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Executive leader networks and organizational performance: An alternative exploration of "the leader effect"

Crocitto, Madeline Marie, Ph.D.

City University of New York, 1989

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EXECUTIVE LEADER NETWORKS AND ORGANIZATIONAL PERFORMANCE: AN ALTERNATIVE EXPLORATION OF "THE LEADER EFFECT"

by

Madeline Crocitto

A dissertation submitted to the Graduate Faculty in Business in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York.

1989

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ABSTRACT

EXECUTIVE LEADER NETWORKS AND ORGANIZATIONAL PERFORMANCE:
AN ALTERNATIVE EXPLORATION OF "THE LEADER EFFECT"

by

Madeline Crocitto

Advisor: Dr. Sidney I. Lirtzman

Environmental, organizational and leader effects on midrange stock price and profitability (profit/assets) were examined over a ten year period, 1976-1985, in a sample of 101 public American corporations derived from a random sample of 239 Disclosure firms. Environmental variables were measured by industry GNP and concentration. Organizational effects were assessed by corporate size, technology, age and inside and outside ownership. Leadership was defined as corporate executives with the rank of vice president and above.

Based upon demography and network theory, it was posited that leadership should be examined on three levels of analysis: the executive group, the individual CEO/President level, and the individual-group level. Group characteristics of stability of tenure, inequality of entry dates and insularity or ratio of career to total managers were hypothesized to be negatively related to performance. The visible or star individual leader measured by business press citations, the individual leader as a gatekeeper through extraorganizational governance memberships, and the individual-group bridge based on distance in date of entry was hypothesized to have a positive effect on performance.

Results of correlational analysis revealed the independent variables more highly associated with stock price. The initial pooled

data regression analysis revealed serial correlation. Subsequently, the analysis was performed cross sectionally with significant but low levels of R^2. Improvements in explained variance did not result from short term and long term lagged effects of the predictors. Guided by the organization as an actor explanation of organizational performance (Hall, 1977), the lagged effects of the previous Y value were added to the model. For both dependent variables, the lagged endogenous model resulted in the greatest improvement in explained variance, followed by leader group stability. The group level leader effects were more frequently significant with greater beta weights, and higher regression partial correlation coefficients than the individual-group or individual level leader variables.

Differential leader effects were found for group insularity, i.e., it was negatively associated with profitability and positively related to stock price. The individual level variables, which had a negligible impact on profitability were more predictive of stock price.

Overall, the results support the benefits of executive managerial tenure as proposed by administrative and bureaucratic theory, as well as the ability of prior performance to influence performance in the short run.

ACKNOWLEDGMENTS

Completing this dissertation has been an adventure. Certainly not in the genre of an Arctic expedition but nonetheless, as bewildering, exhilarating and frustrating as any unknown.

I was particularly fortunate to have Dr. Sidney Lirtzman as my Committee Chairperson. His encouragement and comments on preliminary drafts helped crystallized by ideas into something researchable as well as augmented my understanding of the limitations of studying a dynamic phenomena. He instinctively knew when to let me meander through literature and when to intervene to prevent my tangential jaunts from taking me off course. Dr. Edward Wolf furnished invaluable statistical and practice guidance with humor and optimism throughout the analysis of an imbalanced, messy data set. Dr. Samuel G. Ryan, Jr. has served as a mentor from my early days in the program. As a teacher and researcher, he instills the value of doing one's best. The insight and thoughtful comments of Dr. Harris Jack Shapiro prompted me to rethink the leadership phenomena which I attempted to study. In addition to being an inspirational professor, Dr. Abraham Korman has assisted in the development of my research skills and consistently supported my efforts.

I am especially grateful to those who assisted me in the data collection phase of my research. Mary Grant's staff at the C.W. Post Business Library, especially Judy Corso, cheerfully proved access to their archives and a hospitable environment in which to work. Rona Ostrow was generously with her time and diskettes in training me to retrieve necessary citations through the on-line services of the Baruch College Graduate Business Resource Center.

The data analysis involved much computer time and was not amenable to all SPSS-X and SAS procedures. Ramon C. Gallo, Jr., Caesar Pacifici and Robin Beckerman, on the staff at the Baruch College Educational Computer Center, generously gave of their time and expertise in coping with the thornier aspects of my investigation. Their friendship provided a refuge during the long hours of computer work. Robin's expert knowledge of SAS greatly expedited the programming of my lagged variables. When all else failed, Kenneth Bell took time from his own dissertation to assist with some of the distance calculations and shared advice on the finer points of PC management.

Most importantly, I cherish the unfailing emotional support of my friends Maali Ashamalla, Faten Moussa and Akira Tomoika throughout graduate school, especially during the dissertation phase. Shirley Gilman Bell, whose expert advice I relied upon to decipher the technical aspects of financial statement analysis, has unabashedly supported my efforts over the years.

Perhaps it is appropriate at this point to express publicly a private gratitude. If it were not for the policies of the State and City of New York, I would not have attended college, much less graduate school. It is my intention to be a credit to this system by continuing their tradition of effort and excellence in my own work.

Finally, without the inspiration of John R., John C., and Michael Gavencak, I would not have tried: without their love and understanding, I would not have succeeded. In a frail attempt to return their trust, this work is dedicated to them.

Madeline Crocitto
April 1989

TO JOHN AND MICHAEL

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CHAPTER 1

INTRODUCTION

The subject of leadership has received intense attention, prompting some observers to note the "sanctity" (Meindl & Ehrlich, 1987) or messiah-like status conferred upon our corporate leaders. There are literally thousands of articles related to the subject of leadership. For the sake of comprehension, they can be classified into two streams of literature.

The first consists of theory and research that is academically and psychologically oriented. Research in this stream was initiated by trait theorists involved in the search for personality traits that characterize effective leaders (e.g. Ghiselli, 1971). This was followed by personal-behavioral theorists concerned such with such topics as job versus employee-centered leaders (Likert, 1961); consideration and initiating structure (e.g. Fleishman, 1973); Theory X and Theory Y classifications of leader predispositions (MacGregor, 1960); and, the managerial grid model of Blake and Mouton (1964). These approaches gave way to situational theories which recognize the contribution of situational factors to leader effectiveness. Examples of these are Fiedler's (1968) contingency theory, Path goal theory (House, 1971) and the Vroom and Yetton (1973) decision model. Research examining the usefulness of these various theories and techniques is based on primary data collection involving middle and lower level managers, supervisory personnel and some occupational specialties.

The second direction reflects a sociological foundation, with researchers relying on secondary data collected by government and private sectors. Following bureaucratic theory, it is predicated on the assumption that the greatest responsibility for organizational outcomes lies where authority is most concentrated. Whether labeled the institutional level (Parsons, 1969), upper echelon (Hambrick & Mason, 1984) or strategic apex (Mintzberg, 1979), the leader region of the organization is responsible for synthesizing the various parts of the organization into one entity; mediating between the organization and the environment and, handling the demands of salient organizational constituencies (Mintzberg, 1979). It is in the upper levels of the organization that the greatest degree of discretion is allowed in meeting environmental demands (Thompson, 1967) which involves the adoption and deletion of various strategies and policies (Aldrich, 1979; Salancik & Pfeffer, 1980). Thus, those that analyze and work in organizations attribute organizational outcomes to the decisions and behaviors of upper management.

American corporate leaders are considered wielders of vast economic and social influence. Large, profit-oriented corporations, whether industrial or service based, play a major role in American society as generators of sales, owners of assets and stocks, employers, and influencers of public policy (Blumberg, 1975). These megacorporations constitute a powerful influence on economic activities in our society and affect the lives of all individuals.

The business press is replete with portrayals of corporate managers as the designers of goals and strategies, bearing the triumph or ignominy of their ultimate results. The leadership literature has only recently directed its resources to the investigation of the leader effect in our powerful business institutions.

Initial studies utilizing corporate samples reported leader influence as overshadowed by environmental and organizational factors (Lieberson & O'Connor 1972; Weiner & Mahoney, 1981). Subsequent studies have employed a pretest-posttest analysis of performance differences upon executive succession. They reported increased company growth with insider succession (Shetty & Peery, 1976) as well as with outsider succession (Helmich, 1974). It was also found that the succession effect varies with the size of the firm (Dalton & Kesner, 1983) disposition of the predecessor (Reinganum, 1985) and anticipation of the leader change (Beatty & Zajac, 1987). Still others, following the suggestion of Hambrick & Mason (1984) have discovered some relationship between top manager demographics and strategic orientation (Norburn, 1986) and performance (White & Abelson, 1986).

The relatively new course of studies offers no clear consensus of the effect of leadership on organizational outcomes. Due to the paucity of studies, there is little in the way of replication and expansion. The purpose of the present study, then, is to build upon the research that has examined leadership in business organizations.

Analysis of the leadership literature suggests further conceptualization, definition and study of leadership should proceed

on three levels of analysis: The individual leader; the leader-group and the group level. The conceptualization, definition and measurement of leadership on each of these levels is guided by the sociological concepts of networks and demography. Schematic models of the leader effect on all three levels are presented and explained. Specific hypotheses of the leader effect are offered with their respective rationales and variable measures.

In order to compare the findings of the present study with those that have preceded it, the appropriate environmental, organizational and performance variable measures are adopted from previous research. A longitudinal perspective is also taken. In addition to a refinement of leader measures, the present research seeks to increase generalizability of findings through a random sample of all publicly listed firms.

After examination of several appropriate statistical models the limitations, conclusions and suggestions for future research are presented.

CHAPTER 2

CONCEPTUAL BACKGROUND

The roleholders at the pinnacle of the organization are charged with the creation of an organizational paradigm. Through it the organization receives justification from salient environmental constituencies, and provides social support and satisfaction to organizational members (Pfeffer, 1981). Leaders of an organization must continually select from the many perceptual and behavioral variations that comprise the paradigm, those that have significantly impacted on organizational success (Miller & Friesen, 1980). These methods of information processing, decision making, goal formation and strategic orientation previously associated with success are preserved. The leadership group associated with this success thereby broadens their power base, as they are deferred to by major constituency groups such as stockholders and the board of directors. With the continual entrenchment of this leadership group comes the probability of rejection of approaches and strategies that differ from the prevailing "success formula". This is likely to be so even when it becomes obvious that prior approaches are no longer appropriate in meeting environmental demands (Miller & Friesen, 1980).

A change in the occupants of leadership roles, then, implies a change in the organization's paradigm. New leaders create a fresh construction of social reality, accompanied by unique language, symbols, norms, values and expectancies that influence information processing and decision making (Schein, 1985). Succession in leader roles has been affirmed as one of an organization's most significant events (Brady &

Helmich, 1984). Changing a leader signifies changes in organizational behavior. It is hoped such changes will facilitate the "fit" between an organization and its environment as unequivocally manifested in organizational success.

LITERATURE REVIEW

The literature concerned with the effect of leadership on organizational outcomes proceeds on the assumption that succession is a "methodological requirement" (Smith, Carson & Alexander, 1985) i.e., that leader change is the most appropriate point from which to study the "leader effect" (Gordon & Rosen, 1981). A major review of studies of the effect of executive succession on organizational outcomes by Brady & Helmich (1984) identified three major areas of research attention:

1) The effect of succession rate.
2) The influence of the source of the successor, i.e., from inside or outside the organization.
3) The influence of succession patterns.

The research relevant to each of these three areas is summarized in the following pages. It should be noted that many of the succession studies used samples of sports teams. The researchers alleged the structure of such teams was similar within its respective sports "industry" in terms of the number of team members, positions, authority relations and performance evaluation.

Rate of succession

It has been submitted that rapid rates of succession lead to negative organizational outcomes and that conversely, slower rates have a positive effect on organizational outcomes (Brady & Helmich, 1984).

This proposition is based on the assumption that succession disturbs the equilibrium of the organization's system. Rapid succession encourages leaders to take a short term perspective when analyzing decision outcomes. Repeated disruption of the social system results in chaos as leader group members continually reorient themselves to personnel changes. Energy is diverted from the tasks of the leader group, and group members are stressed from coping with the transformations of social relationships. These circumstances work against the formation of a new organizational paradigm and diminish organizational learning.

A negative association between high rates of succession and organizational outcomes was first reported in Gouldner's (1954) classic case study of an outsider plant manager replacement in a gypsum plant. An increase in the size of the administrative component, tension and a punishment oriented bureaucracy resulted, a finding also evident in lab studies of college students (Trow, 1963). A study of sixteen professional baseball team managers over the years 1921-1941 and 1951-1958 found an inverse relationship between succession and the percentage of games won (Grusky, 1963). This was also upheld in a study of major league baseball manager succession effects and the percentage of team wins (Allen, Panian & Lotz, 1979). Another study of 26 national football teams reported the percentage of games won in a regular season to be negatively associated with coach changes over an eight year period (Brown, 1982).

The detrimental impact of succession on performance was also demonstrated in an examination of 2,137 local newspaper publisher succession from 1800-1975. Succession, especially following the loss of

a dominant owner/publisher, was related to organizational death. However, this relationship diminished with the age of the newspaper (Carroll, 1984).

Brady & Helmich (1984) note that recurring succession may deter potential candidates who perceive the organization as an undesirable place of employment.

The adverse relationship between leader change and organizational performance is refuted in other studies. A longitudinal study of 22 professional baseball teams from 1954-1961 found no relationship between midseason manager changes and the percentage of games won. This prompted the researchers to posit the leader as a scapegoat whose succession appeases major constituencies (Gamson & Scotch, 1964). An investigation of the effect of the number of coach changes for 129 college basketball teams on the percentage of games won from 1930-1970 also failed to discover any relationship between coach change and team performance. However, an inverted U relationship was reported between coach tenure and team performance, suggesting that tenure may also have some influence on organizational outcomes (Eitzen & Yetman, 1972).

Allen, Panian & Lotz (1979) also point to the necessity of investigating circumstances beyond the mere occurrence of succession. Although they found the team winning percentage of their baseball team sample to be lower with manager succession, this effect varied with the timing of the succession act. Succession that occurred between baseball seasons had less of a detrimental influence than those occurring during the season. Multiple succession and outside succession also showed a negative effect on performance in the same study.

Successor Source

Another aspect of the succession event commonly investigated is the source of the successor. Inside successors are generally considered to be individuals that are appointed to leader positions after occupying other roles in the organization for a specified period of time. Outsiders are usually considered as those who fill leader positions without prior organizational employment.

Outside Succession

Outside succession can be beneficial. It has been associated with increased performance and participation, as well as lower levels of conflict in a case study of an automobile plant (Guest, 1962); a higher percentage of growth in the number of subsidiaries in 29 firms in the chemical and allied products industry (Helmich, 1974); financial and merger strategic changes in 313 publicly owned industrials between 1930 and 1974 (Osborn, Jauch, Martin & Glueck, 1981); and, a positive impact on corporate stock prices in smaller firms when the predecessor left the firm (Reinganum, 1985).

These organizational transformations may be attributable to the outsider's freedom from the confines of previous modes of information processing and decision making. The new leader may also possess the necessary knowledge experience and skills necessary to align the company with changing environmental demands.

Evidence suggests this alignment is accomplished via changes in the group essential to the new leader's success as well as the implementation of formalized communication mechanisms. The outsider gypsum plant managers in Gouldner's (1954) case study increased the size

of his administrative component as well as instituted more punitive-related bureaucracy. Outsider school superintendent replacements also enlarged the size of their administration (Carlson, 1972). This precludes the newcomers exclusion from the informal communication network already in place (Gouldner, 1954).

A greater number of changes in executive personnel was associated with the outside presidential succession in the chemical and allied products industry (Helmich & Brown, 1972). On a different level, a greater number of board members was associated with outsider presidential succession in a manufacturing firm sample (Helmich, 1974). The dynamics underlying personnel change and expansion were revealed in a study of sixty simulated business organizations. The social isolation of a successor was mediated by the entry of an ally the newcomer could depend upon and trust. This was usually someone previous associated with the successor. This ally offered loyalty and commitment in exchange for appointment as an assistant to the successor. The assistant gathered information useful to the new manager as well as facilitated interlevel communication (Grusky, 1969).

It appears outside succession triggers personnel displacement as the new leader's trusted associates are selected to fill new positions and vacancies created by the voluntary and involuntary exit of incumbents. This temporary disordering of the social system may have a positive effect on organizational outcomes, as the new leader replaces "old guard" personnel with those whose known competence can produce necessary changes. Despite this benefit, such personnel movements may be associated with interpersonal difficulties. Outside successors in a

sample of CEO members of the American Management Association were significantly more concerned with resistance of incumbents to the successor's management style. They also suffered more difficulties in adjusting to the organization's social system (Gabarro, 1985).

Inside Succession

Organizations may seek the continuity of insider succession if performance levels have been acceptable (Gamson & Scotch, 1964; Shetty & Peery, 1976), to enhance motivation, to avoid the risk of an unknown newcomer and to prevent the disequilibrium generated by personnel shifts.

The ascendance of an insider indicates that the prevailing patterns of behavior are likely to be maintained (Brady & Helmich, 1984; Carlson, 1972; Reinganum, 1985; Shetty & Peery, 1976). Presumably, the organization's new inside leader is able to continue meeting the demands of its task environment.

A longitudinal study of fourteen cases of managerial succession demonstrated that learning technical aspects of the job as well as personnel evaluation was more of a strain for outsiders. On the other hand, insiders require less learning time and were already cognizant of prevailing cultural norms, allowing them to take appropriate corrective action earlier. Outsiders were more frequently associated with failed successions as revealed by their turnover within two years following succession. Also associated with an unsuccessful outsider succession was his inability of the newcomer to develop a set of reciprocal beliefs with influential personnel (Gabarro, 1985).

Preference for inside succession was illustrated in a study of 270

chief executives selected from a Business Week listing, 89.3% of whom were associated with the same company preceding their ascendance. Firms with insider CEOS showed greater return on invested capital and higher levels of sales growth (Shetty & Peery, 1976). This was also supported in a study of professional baseball teams that demonstrated a higher number of games won with insider succession (Grusky, 1964).

Thus, it appears outside succession is appropriate only when the company is lacking necessary human resources required to meet environmental demands (Brady & Helmich, 1984).

Succession Patterns

As described above, the continuity offered by the insider and the variations accompanying an outsider both carry advantages and disadvantages. Varying the sequence of successor source allows the organization to enjoy the advantages of both. Helmich (1974) classified the presidential succession patterns of 29 manufacturing firms as adaptive under the following conditions: Insider replaced by an outsider; outsider by an outsider; and, outsider to insider. These patterns were associated with growth in the number of subsidiaries and expansion in the size of the board of directors.

Factors influencing successor source

Performance

Performance is most often considered a variable dependent on leadership expertise. On the other hand, it has also been hypothesized as a predictor of succession (Trow, 1961; Grusky, 1969) which is a basic assumption of the scapegoat hypothesis (Gamson & Scotch, 1964). Brady & Helmich (1984) propose a "two way" recursive model of performance and

succession. Poor company performance may generate the need for a leader's replacement. If the leader is not matched to the characteristics and demands of the company, and is not familiar with the corporate culture in order to devise and implement a turnaround strategy, he is replaced. Each additional leader change cycle generates cumulative chaos. The cycle ends when the proper individual-organizational fit is made and the organization restores itself to stability. This model has yet to be tested in organizational samples.

Size

The size of the organization also influences the source of a successor. Presumably, large organizations have a more sizable labor pool from which to select and groom those with leadership potential (Brady & Helmich, 1984). This contention is supported by the finding that a greater percentage of small firm CEOs were outsiders (Shelly & Peery, 1976), and a reportedly higher incidence of insider succession in a sample of large firms (measured by sales and number of employees) selected from Standard and Poor Register of Corporations (Dalton & Kesner, 1983). Reinganum (1985) reported an interaction between the source of the successor, the disposition of his predecessor and firm size measured by stock market capitalization on stock price. In this sample of New York and American Stock Exchange listed companies, outsiders were more likely to assume office in small companies. The effect of leader change on stock market price was positive and significantly different in large firms only when the predecessor exited. No significant fluctuation was discovered for the larger companies in the sample, regardless of the source of the new leader.

Another analysis of the effect of inside/outside succession on stock prices under the condition of predecessor death was made in a sample of 60 CEOs of NYSE and AMEX listed firms. Inside succession was positively, significantly related to market returns, suggesting support for existing strategies. No significant market reaction was found for external succession; however, this was attributed to a paucity of cases (Worrell & Davidson, 1987).

Leader Characteristics and Succession

More recent succession research has incorporated moderating factors in addition to the successor source. Smith, Carson & Alexander (1984) included leader ability into their investigation of the leadership effects of fifty United Methodist ministers. Utilizing salary adjusted for tenure as a measure of ministerial ability, it was found that leader ability did significantly affect performance on the five criteria of church attendance, membership, property value, operating budget and church/general assembly contributions. Further analysis of prior performance and succession and subsequent performance showed minister change to be an insignificant predictor of performance. These findings were supported in a sample of 22 National Basketball Association teams over five seasons. Coach ability, measured by win/lose records, former experience, as well as team performance prior to succession were found to have a significant effect on team performance. Testing the succession effect alone was found to be insignificant (Pfeffer & Davis-Blake, 1986).

No Leader Effect

Reinganum's (1985) finding supports Grusky's (1961) contention that

the leader's impact is diminutive in large, bureaucratic organizations, since much of the leader's role is determined by rules and traditions. It also reinforced the findings of no performance effect when professional baseball teams changed managers midseason (Gamson & Scotch, 1964), and with the number of college basketball team coach changes (Eitzen & Yetmen, 1972).

Beatty & Zajac (1987) differentiate between CEO succession as a perceptual event indicated by changes in capital markets, and managerial succession manifested in changes in company production/investment decisions. Analysis of CEO change announcements in 209 large public corporations yielded a significant negative drop in the stock prices of firms 30 days after the announcement regardless of successor source. The stock prices of firms with unanticipated changes fell more drastically than did those of firms with anticipated changes. Long term effects indicated by deviations in the systematic risk of a firm's stock were also dependent upon leader replacement, regardless of successor source. Overall, both their short term (30 day) and long term (300 day) analysis of leader change revealed a negative impact. The authors argue that stock prices are a useful way to gauge perceptual reactions to corporate signals of the anticipated outcomes of succession effect. They also note the utility of considering succession effects as different from managerial effects.

Summary

Inquiries into the effect of leader succession on organization outcomes yield the following conclusions:

1) Outside succession leads to greater change in the social

system of the organization via personnel movement, and an increase in the size of the administrative component.

2) Generally, outside succession has a positive bearing on performance and may be considered an adaptation mechanism.

3) Successor source may be a partial function of organizational contextual features as demonstrated by the size effects on internal labor pools. This suggests other factors such as industry labor markets would also be influential in determining the frequency of industry as well as organizational outsider succession.

4) Successor success may be contingent upon the characteristics of the succession event such as source of the previous successor (Helmich & Brady, 1974) and the deposition of the predecessor (Carroll, 1984; Reinganum, 1985).

Multivariate studies

Other explorations of the leader effect have incorporated organizational and environmental measures into their designs as well as expanded their scope to situations of nonsuccession.

The effects of environmental, organizational and leadership variables were assessed on the performance variables of sales, net earnings and profit margin in 167 corporations in 13 manufacturing industries over a twenty year period (1945-1965). Leadership was defined in terms of the tenure of a CEO or corporate president. A decomposition of variance analysis resulted in 6.5%, 7.5% and 14.5% of the respective variance of sales, net earnings and profit margin assigned to leadership. Lags of the leader effects for one, two and

three years for sales and net earnings were insignificant. However, the lagged leader effect on profit margin dropped to 12% after one year and then rose to 32.1% and 31.7% for two and three years. One finding that supports the succession literature was the positive correlation between the number of vice presidents and profit margin. The authors believed a high number of vice presidents help centralize top management's control by efficiently implementing policies and providing information from lower levels. In this study, an outsider CEO increased the size of the administrative component and enhanced performance (Lieberson & O'Connor, 1972). This suggests an outside successor may make higher quality decisions because of access to greater information via the number of administrators surrounding him.

Salancik & Pfeffer (1974) employed the same methodology in their investigation of the effect of mayors on city expenditure and income in thirty cities from 1951-1968. They discovered city variables accounted for 80% and 90%, year effects accounted for 6.7% and 2.5% and mayor effects accounted for 10% and 5.6% of the variance in expenditures and income respectively. Both the Lieberson & O'Connor (1972) and Salancik & Pfeffer (1974) studies support the notion that large organizations have enough momentum to perpetuate themselves beyond the influence of any one roleholder.

Weiner (1978) demonstrated that the small percentage of performance variance explained by leadership in the two studies described above was a function of their chosen methodology. She reexamined the effect of the same independent and dependent variables studied by Lieberson & O'Connor (1972) in a sample of 193 randomly selected industrial

corporations and found a similar pattern of variance attributable to each of the predictors. However, when the leader effect was removed from the regression equation first, it explained 96.1%, 94.8% and 77.5% of the respective variance in profits, sales and profit margin. Weiner (1978) reported these high percentages as artifactual and attributable to the compounding of leader and company effects.

Weiner & Mahoney (1981), utilizing the same sample as Weiner (1978), further investigated the effect of environmental, organizational and leadership factors on organizational performance by refining earlier measures of these factors. Environmental effects were measured by yearly GNP, industry sales and industry concentration ratio; organizational variables were measured by size (assets) and technology (capital/labor ratio); the leader effect was assessed through the company's debt/equity ratio and percentage of net earning retained, in the belief that these measures reflected the strategic decisions of corporate leaders. The performance variables of profitability (profit/assets ratio), profit and stock price were recorded for the tenure of the CEO for each company in the sample. Multiple regression analysis showed that leadership i.e., retained earnings strategy did not significantly contribute to the variance of any of the three dependent variables. Capital structure strategy (debt/equity ratio) was negatively related to profitability and stock rices. Stewardship, a categorical variable, accounted for 12.8%, 43.9% and 47% of the variance in profit, profitability and stock prices respectively. Stewardship also represented other nonspecific variance and may have reflected the influence of other variable not included in the model. The authors

called for the identification and measurement of potential leadership variance that might be causally associated with organizational outcomes within the context of intraindustry analysis (Weiner & Mahoney, 1981).

Leader Characteristics

Interest in individual level leader characteristics on the macro level is belated in comparison with the initial trait theories on the micro level. Recent multivariate explorations of succession and leader competence show both have a positive impact on organization performance in a sample of church ministers (Smith et al, 1984) and football team managers (Pfeffer & Davis-Blake, 1986).

Demographic characteristics such as age, functional orientation, career experiences, education, socioeconomic background and financial dependence have also been posited as influencing managerial perceptions, information processing and strategic choices in an upper echelon theory proposed by Hambrick & Mason (1984).

There is some support for their posited relationships between top management demographics and organizational behavior. A survey of CEOs and senior vice presidents in 354 British firms classified as operating in growth industries (GOGOs), turbulent industries (YOYOs) or declining industries (DODOs) reported some association between industry type and managerial demographics, among other variables investigated. There was no difference in managerial birth order or education among industries. However, managers raised in a cosmopolitan childhood location were more frequently found in growth industries; more of those born and educated in Scotland were associated with the YOYOs. Executives in declining industries played individual sports at their respective universities,

while those in growth industries played team sports. Managers in growth industries were also significantly younger than managers in declining industries. Both GOGO and DODO industry managers viewed finance as the fastest functional route to the top, while the YOYO firm managers preferred marketing (Norburn, 1986).

Further attention to leadership characteristics was evident in a study of 58 Fortune manufacturing organizations. Each CEO was interviewed with regard to the quantity and type of influence activities he engaged in; his socioeconomic status; and, whether the company assumed a growth or profit orientation role. Other independent variables included CEO role tenure, ownership, capital structure strategy, size technology, industry size and environmental diversity. Industry size significantly predicted all dependent variables of sales, profit and return on equity. Ownership and capital structure were negatively related to ROE. Size was a significant predictor of sales and profit. Socioeconomic status and especially CEO role tenure showed the greatest prediction for ROE, but were negligible for sales and profit. Surprisingly, lower levels of advocacy were found in organizations with higher performance. The author urged greater attention to the development of more sensitive measures of leadership (Falbe, 1984).

The demographic characteristics of age, company tenure, position tenure, heterogeneity in terminal degree and functional orientation were investigated in a sample of the upper level mangers in forty firms in the diversified, metal, electrical equipment and utility transmission industries. Results showed a curvilinear pattern by industry. Successful firms in poorly performing industries had younger managers

with lower tenure and less deviation of company, position tenure and age, with homogeneous functional and educational training. High performing firms in successful industries had a higher incidence of company and position tenure and were older (White & Abelson, 1987). The relationship between proportion of outsiders, functional background and strategic orientation was investigated in a sample of 75 managers in three tobacco firms classified as having prospector, analyzer or defender strategic orientations. It was found that outsiders with a marketing orientation were more characteristic of prospector than analyzer firms. Prospectors also had outsider, R & D and production top manager orientations as did analyzers in comparison with defenders. The authors suggested their findings present a useful guide in aligning upper management with appropriate corporate strategic orientations (Chaganti & Sambharya, 1987).

Thus, while some relationship between leader group demographics and industry characteristics was documented, there are too few studies from which to draw any firm conclusions. Further replication of this linkage as a strategic consequence, as well as how it impacts on organization performance is necessary.

Given the research described, examination of a CEO and leader group demographic characteristics offers a potentially useful avenue of study of the effect of leadership on performance. The literature reviewed underscores the need for valid measures of leadership, as well as the utility of considering the relationship between the leader and the other members of his social system, a relationship essential to the success of the leader (Gabarro, 1985).

ANALYSIS OF THE LITERATURE

What is of particular concern in the research reviewed is the inconsistency of findings about the influence of leadership on organizational performance. This is especially true of the succession literature which encompassed a greater variety of organizational types than did the multivariate studies. The succession literature has only recently, progressed beyond the study of successor origin to other characteristics, such as competence, that might influence performance. The multivariate studies of corporate leadership demonstrated little effect in comparison with organizational contextual variables. The leader effect also varied with the dependent variable studied. Yet, the popular business press exists on stories about top managers and their teams, background, plans, successes and failures. These eclectic results are addressed in the following explanations:

1) Strong environmental forces may overpower the plans and strategies of a leader, regardless of who the leader might be (Pfeffer, 1981). The business press may be focusing on the "human" interest aspect of an organization in order to generate interesting copy.
2) The recruitment and selection process for leaders, especially corporate executives results in homogeneity of personnel filling these roles with little variance available for measurement (Pfeffer, 1981).
3) The board of directors constrains managerial behavior, restricting their range of acceptable actions (Mizruchi, 1983).
4) The diversity of results may be attributable to the measurement

of leadership. In the succession literature, it was measured by whether or not there was a leader change. In one multivariate study, leadership was a categorical measure of remaining variance, pooled with the error term in a decomposition analysis (Lieberson & O'Connor, 1972). The leader effect may have been obscured in the financial ratios used to reflect managerial decisions (Weiner & Mahoney, 1981). Similarly, the leaders studied have varied from corporate boards of directors, upper level managers, sports team coaches and managers, students and church ministers.

5) The measurement of organizational performance, always a knotty situation, varies with the sample. How generalizable are sports teams win/loss records to corporate financial measures such as profitability or sales?

6) The above reasons for lack of consensus over the leadership effect leads to a basic question. What is the underlying phenomena studied. Is it really "leadership" in a classical, inspirational sense or is it administrative management constrained by owners and organizational governance mechanisms?

Approaches Suggested by the Literature

Expansion of Research on Individual Leader Attributes

The usefulness of studying group demographics as well as the significant moderating effect of individual leader competence appears promising thus far. This approach can be extended to the assumption that an individual leader's demographic and psychological profile would also be related to such variables as industry characteristics, group

satisfaction and performance. This intriguing proposition has received virtually no formal research attention beyond that of the case presentation of business periodicals. Admittedly, secondary demographic data would be easier to obtain than responses to questionnaires. However, the Helmich (1975) study collected primary data on leadership style and succession with significant findings. It encourages interest in the relationship between the leader's psychological and demographic characteristics and how they together influence micro and organizational level outcomes.

Movement Beyond the Individual Unit of Analysis

Individual Leader - Group Dynamics

Additional insight can be acquired into the leadership-performance linkage by proceeding beyond the individual level of analysis. The leader as a catalyst for a group is amply documented, both conceptually and empirically. The phenomenon of leader change generating personnel change has been established in the succession literature (e.g., Brown, 1982; Carlsen, 1972; Gabarro, 1985; Gouldner, 1954; Grusky, 1969a; Helmich, 1974; Helmich & Brown, 1972) and in the popular press such as the publicized movement of Hal Sperling and Walter Murphy from Ford Motors Company to Chrysler Corporation following the presidency of Lee Iacocca (Iacocca, 1985). Yet, little is known about the interaction between the leader and the group and the significance of these patterns on organizational outcomes.

This research demonstrates the coping behavior of a new leader by the exchange of incumbent personnel with proven allies. Such replacements remove the uncertainty of authority acceptance and personal

relations with which every new group must struggle, and are precursors to "valid" communication (Bennis & Shepard, 1974).

A leader relies on his immediate work group to accept authority and provide accurate information. Such dependency is a prerequisite to his effectiveness (Barnard, 1938). Subjected to bounded rationality, the leader needs others to provide and evaluate information (Simon, 1976). People tend to look to others to define reality. The individual leader's assessment of the firm's environment and related factors is contingent on his social situation. His opinions and attitudes are affected by the norms and values of the reference group he has chosen (Zimbardo, Ebbeson & Maslach, 1977). The leader's work group can influence decisions by altering relevant information through omission, filtering and/or uncertainty absorption (March & Simon, 1958).

Although a leader holds a position of higher authority than those in his work group, the group is essential if he is to fulfill his role requirements. So too, however, is the group dependent on the leader. The study of leader-group relations would lead to a better understanding of the reciprocity between the two.

The leader of any group has status based on power, authority and influence, and determines the group's climate and norms (Schein, 1985). One outcome of this, however, is that often the higher status person elicits agreement from lower status members (Korman, 1976). The leader may surround himself with a body of supportive "yes people" who will filter information to conform to the leader's beliefs and decisions. The danger in this is that groupthink may ensue, leading to poor or disastrous decisions. However, a leader that encourages information

gathering, examination, debate and the expression of doubts and objections would minimize poor decision outcomes (Janis, 1972).

Existing literature demonstrates that a leader is instrumental to member satisfaction and task attainment at low and middle levels in an organization (House & Baetz, 1979). However, the mutual effect of the leader on the group and vice versa remains unexplored at the upper levels of corporations.

The Leadership Group

Although a leader holds the position of highest authority, he is also a group member. The social structure of the leader group is an outcome of the experiences and perspectives of the individuals that compose it. The greater the environmental complexity, the greater the organization's need for personnel with the necessary expertise to handle it, or the greater differentiation (Lawrence & Lorsch, 1969). Accompanying differentiation is greater dependence of group members on each other and the increased likelihood of political behavior (Thompson, 1967), conflict, and the need for integration (Lawrence & Lorsch, 1969).

Changes in the environment require changes in the structure of the group responsible for the organization's relationship with it (Thompson, 1967). This is accomplished by a change of personnel as the organization attracts or promotes those with the distinctive competencies necessary to align the organization with its environment. Often, outsiders enter the executive group when the company does not have the requisite personnel to meet the demands of the changed environment. Such personnel changes constitute a form of interorganizational communication (Pfeffer & Leblebici, 1973) and provide the means through which new

ideas, techniques and information used in other firms can enter the company.

These personnel changes may be replacements for the leader and/or other members of the executive group. Adjustment to these changes is seldom easy. Since executive teams are not usually replaced en masse, newcomers and their allies are faced with remnants of the old regime. This conditions can escalate into polarized factions, one in favor on the "new way" and others adhering to the old. The dynamics of this situation are explainable from a coalition perspective. People form coalitions when they believe their utility can be maximized jointly rather than singly. This is predicated on the existence of a joint order preferencing of individual goals (Cyert & March, 1963). Once formed, coalitions are resistant to change (Bacharach & Lawler, 1980). The incumbent coalitions should, therefore, resist any attempts to abrogate their position, even if their power base has been removed vis-a-vis the leader.

Regardless of whether or not coalition membership includes the leader, a lack of adjustment of the coalition's "preference ordering" results in goals that do not correspond with environmental demands. The organizational system eventually suffers from entropy through lack of positive responses from the environment. Once dominant, a powerful coalition may ignore environmental signals requiring organizational realignment, while performance deteriorates. Powerful constituency groups might then oust the leader because he, with the most responsibility, has not been diligent in assigning and managing personnel in crucial positions within the leader group.

The literature investigating the interaction of individuals in groups explains how such politically astute individuals can place themselves in such a precarious situation. Individuals form coalitions for utility motives (Cyert & March, 1963) and are, therefore, likely to have attitudinal or ideological similarities which guide their preference ordering (Bacharach & Lawler, 1980). Feelings of warmth, support, identification and cohesiveness will result. Opinions, attitudes and behaviors that conform to those of the group are rewarded. Similarity among members is valued. This combination results in a group that is resistant to information which threatens its cohesiveness. Their decision making is characterized by selective attention to information, uncertainty absorption and groupthink (Janis & Mann, 1977). This may explain the Eitzen & Yetman (1972) finding that poor performance results when leadership does not change for an extended period of time. Leaders and their coalitions are so concerned with maintaining group cohesiveness, that flawed information processing and decision making may result. The organization is unable to meet environmental demands.

Changing the leader changes this situation. The new leader, whether an insider or outsider, quickly brings cohorts into his executive constellation. The new entrants are likely to have similar preference orderings within the new cohort group which are divergent from those of the previous coalition and other incumbents. Conflict may erupt when there are sharp differences between them. Communication and social interaction between such groups is low, although commitment and unity characterize relations within the cohort.

Group Composition

Societal events are interpreted analogously by those within the same birth cohort. Date of birth (age) is the criterion used to identify cohort groups (Ryder, 1965). Pfeffer (1983) has noted the potential usefulness of applying the cohort concept to study groups on the organizational level. He believes date of entry has the same implication for organizational socialization as does date of birth for an individual's perspective of society.

Those that enter the organization at the same time usually experience organizational events at the same point in their careers. Their subsequent attitude towards, perception and memory of these events is likely to be similar. This should result in parallel preference ordering of individual goals. Organizational cohorts, therefore, are likely to form coalitions in order to satisfy these goals. This similarity fosters attractions of group members to each other, strengthening as their association increases over time. Communication is high and cohesion results.

Evidence of conflict among organizational cohorts has been demonstrated through secondary data analysis. In thirty-two departments of two state universities over a five year period, five and eight year cohort gaps and the presence of an older cohort faculty group were positively associated with full and assistant professor voluntary exits, early retirements and assistant professor involuntary exits. Such turnover was credited to the conflict existing between cohort generations (McCain, O'Reilly & Pfeffer, 1983).

The proportion of exits from top management groups in a sample of

thirty-one randomly selected Fortune 500 companies was positively related to variance in entry and birth dates after performance, group size and company age were held constant. At the individual level, the probability of a manager remaining was positively correlated with date of birth, closeness of age with others in the group and the firm's financial performance (Wagner, Pfeffer & O'Reilly, 1984).

Implications of Cohorts in Organizations

The empirical research cited above shows that clusters of group members distant from other groups are associated with conflict, lack of communication, divergent preference ordering and poor coordination. This should also apply to executive leader groups. In addition to insularity as a means to promote cohesion, a leader may maintain his power by increasing the number of administrative positions surrounding him. This provides a bargaining advantage over smaller coalitions within the group. Ideological similarity within the coalition is high, but differences between coalitions are accentuated. The members of the more powerful coalition would have their personal goals satisfied through the group and would be less likely to leave voluntarily.

Shifts in technology change the interdependence of individuals in a group. Research in academic institutions found that turnover was greater for leaders of highly interdependent departments in terms of task structure and resource scarcity. Changing administrators was viewed as an adaptive mechanism to handle this interdependence (Salancik, Staw & Pondy, 1980). Apparently, continually changing the leader affected the composition of the group and prevented the entrenchment of strong coalitions.

Areas To Be Addressed in the Study of Leadership

The preceding suggests that it is necessary to examine leadership multidimensionally - not as either a group or individual phenomenon. Rather, the assessment of leader effectiveness should involve the individual leader, his relationship with his work group and properties of both the individual and group leader members.

In conclusion, this section has identified three major areas to be considered in the study of the effect of leadership on organizational performance. They are:

1) What characteristics of the leader in addition to insider/outsider status are associated with organizational outcomes? Specific attention should be paid to demographic properties.
2) What bearing does the relationship between the leader as the highest formally ranked roleholder, and his executive group have on organizational performance?
3) What cohort patterns of the leader group are associated with organizational outcomes? In which direction?

The purpose of the proposed model in the next section is to more definitively analyze the effect of leadership, if any, through the combined use of the demography and network theories. The relevance of cohorts and leader/group demographics to organizational processes has theoretical and some empirical basis. Network concepts, often employed to examine micro group relations, have been underutilized on the organizational level. Demography, often employed on the societal level has also been underemployed on the organizational level of analysis. Both offer a theory and method to guide the study of leadership and its

effect on organizations. The purpose of this paper is to address this effect.

CHAPTER 3

PROPOSED MODEL

What has evolved in the literature are two opposing factions. One believes that leadership does have an impact on organizational outcomes. The other views the organization as an "actor" which generates its own behavior beyond the efforts of any one or group of individuals (Hall, 1977). This perspective is herein referred to as the "organizational momentum" approach. Thus far, the multivariate studies of organizational samples, with broad based leader measures, support the latter position. More recent studies that included leader characteristics (i.e., competence), or have explored market reactions to leader change, support the former.

It is essential, then, if the present effort is to contribute to the literature, that the environmental, organizational and performance variables investigated correspond to those used in previous research. They need to be controlled for in order to isolate the influence of leadership as well as to compare and contrast findings.

The variety of definitions and measures of leadership in prior work have not clearly revealed the impact of leadership, especially in the corporate arena. The present research endeavors to address this effect through the model proposed below.

General Model

The framework of the model was drawn around the following equation explicitly described by Lieberson & O'Connor (1972) and Weiner & Mahoney (1981) and acknowledged by the intraindustry samples of White & Abelson (1987), Pfeffer & Davis-Blake (1986) and Helmich (1974):

Performance = f(Environmental + Organizational + Leadership).

What follows is first, a description of performance, environmental and organizational variables along with their definitions and measures. This is followed by a brief discussion of network theory and demography from which the leadership component of the above equation is conceptualized and defined. Following that are the specific hypotheses, measures and rationales for the leadership hypotheses. They examine leadership on a group, individual-group and individual level of analysis.

Performance - Dependent Variables

The potential number of financial indicators of company performance is limitless. Most frequently examined was stock price, which reflects the market's "raw" evaluation of the company (Beatty & Zajac, 1987; Reinganum, 1985; Worrell & Davidson, 1987). Receiving similar attention was organizational performance in terms of extracting profit from sales (Lieberson & O'Connor, 1972) or assets (Weiner & Mahoney, 1981). The dependent variables in the present study were selected to represent the market's perception of the firm as well as executive decisions. Both measures indicate the organization's success in satisfying the major constituencies of investors, owners, employees and consumers. This is necessary to the survival of organization whose goals include profit.

Profitability

Decisions are made by leaders regarding the many potential uses of fixed and current assets. The profit to assets ratio (P/A) indicates the ability of management to allocate assets to generate profit. If top management is correctly assessing the environment, profits should

increase. The judicious use of assets to assist in the process of meeting environmental demands through research and development, advertising and cost reduction procedures should be reflected in the P/A ratio. Assets that have been allocated towards the creation and/or maintenance of products and services that do not generate profit suggest problems with the interpretation of environment stimuli. This implies faulty information processing and decision making as well as lack of strategic vision within the top management group.

Stock Prices

Stock price signifies the ability of top management to secure equity financing. It also serves as an indicator of how the company is regarded by financial institutions and the public at large. Reinganum (1985) subscribing to the efficient market hypothesis, notes the market objectively evaluates all available information about a company, which is quickly reflected in the market value of the stock. Although a complete model of stock price predictors remains to be developed, stock prices may react to environmental, industry-wide or specific company factors (product tampering, for example). Since global economic and governmental factors should affect most business activities, stock price reflects the reaction of the investment community to specific corporate factors. Their reaction to changes in leadership has been significant under some conditions. If this reaction is positive, the price of the stock will rise; if negative, it will decline (Beatty & Zajac, 1987; Reinganum, 1985; Worrell & Davison, 1987).

Independent Variables

Environmental variables

Year: The partitioning of data into yearly segments allows for the effects of economic conditions and relevant major events (embargoes, wars, etc.) to be assessed during a similar time frame for all companies in the sample.

Industry Gross National Product: The measure was selected in lieu of Gross National Product because it more specifically reflects the conditions prevalent in each industry. It is measured in constant 1982 dollars.

Industry Concentration: In profit oriented organizations, the task environment is defined in terms of the company's market. The economic structure of a specific market has been operationalized in terms of its concentrations, or the total annual dollar sales for an industry divided by the number of companies in an industry.

It is often held that market structure determines the behavior of industry participants in relation to price and output, product policy, sales promotion, interfirm coordination and reaction to potential market entrants. The degree of industry concentration is a determinant of the extent to which a company is affected by environmental demands. Where there is a high level of concentration, monopolistic or oligopolistic conditions prevail. The company has little worry about customers satisfying their demand elsewhere. With low levels of concentration, market conditions create competition, where collusive behavior is discernable and difficult to implement. Under extreme competition, competitors may band together and form industry associations to handle powerful constituencies that threaten their survival (Mund & Wolf, 1971).

The environment is of greater dominance in circumstances of intermediate concentration ratios. The organization has little influence over the market as an individual, and does not enjoy the strength in numbers when competitors band together (Pfeffer, 1977). Thus, industry concentration ratios provide an indication of the complexity of an environment facing a particular organization. The measurement of this variable differs by industry and is explained in the method section.

Organizational Variables

Technology: Technological expertise can influence performance. Lieberson & O'Connor (1972) specified that their sample companies were drawn from thirteen industries based upon similar technologies. Further explanation of this commonality was not provided.

Weiner & Mahoney (1981) utilized the organization's capital to labor ratio to measure technology. It indicates the level of efficiency attained in the transformation of inputs to outputs. A high capital investment signifies allocation of money to machinery in relation to labor, or a high degree of mechanization.

The use of the capital/labor ratio eliminates classification problems that arise when assigning companies into technological categories. Assessed in ratio form, the capital/labor ratio is a more sensitive indicator of technology than simple classifications, and allows for interindustry comparisons. Specifically, it is the total dollar value of capital assets divided by the number of employees.

In addition to distinguishing between manufacturing and service-based organizations, the capital/labor ratio also reveals managerial

decisions about costs of labor versus costs of machinery. Replacing people by machinery which may be cost efficient would impact on the profitability measure. However, if such a decision created poor morale, labor disputes and an overall decline in the reputation of the company, it might depress stock price.

Since the sample is not restricted to industrials, another measure of technology is included. The nature of service based organizations requires less money invested in capital equipment but greater administrative and selling expenses. Therefore, another measure of technology, administrative technology is used to evaluate the type of technology used in nonindustrial firms. It is computed as the total amount of administrative and selling expenses divided by the number of employees.

Size: The literature reviewed measured size by the dollar value of the firm's assets, and is one size measure used in the present study. Assets indicate the capital resources available to the firm. Size in assets is associated with profit, since the firm can deploy assets to gain economies of scale in manufacturing and distribution. Such resources may be used to gain information about, and exert influence over, its environment.

It is possible for a company with sizeable assets to have few employees. This was actually the case for one real estate company in the sample that subcontracted for most of its services and had fewer than ten employees. Since number of employees is also an indicator of company size, it was included in the present research.

Size is an important consideration since it has been reported that leader succession has less of an effect on organizational performance in large firms (Dalton & Kesner, 1983; Grusky, 1963; Reinganum, 1985). Number of company employees provides evidence of internal labor markets which should influence tenure, especially that of upper level managers. Tenure is the criterion used to identify organizational cohorts, which is more fully addressed in the leadership section.

Ownership: Ownership of common stock is a primary method of ascertaining control in a corporation. The presence of a majority outside stockholder is considered a constraint on managerial behavior (Mizruchi, 1983). Presumably, if top management owned a sufficient quantity of stock (which might constitute less than 1% of outstanding shares in a large company), reelection to their positions as well as placement on the board of directors could be assured, regardless of corporate performance.

The literature generally supports a relationship between top management ownership of common stock and tenure (Allen & Panian, 1982; McEachern, 1975; Salancik & Pfeffer, 1980), and is the reason for the inclusion of ownership in the present study.

Inside ownership is measured by the percentage of common stock held by each top management member. The percentage held by the largest shareholder of record was included as well, in order to consider outsider constraints on managerial discretion.

Prior Performance: This was included among the organizational variables because it is the most salient consequence of environmental,

organizational and leader characteristics of a firm. It reflects the results of earlier decisions, strategies and goals.

Based on the organizational momentum approach, present performance is a function of the firm's previous performance levels. As such the prior performance levels of an organization should be considered in any investigation of firm performance.

The second reason for the inclusion of prior performance is due to the relationship between performance and leader succession. Prior profits have been reported as a basis from which to distinguish leader succession from nonsuccession in industrial firms (Osborn et al, 1981). Leaders are more likely to be sacrificed in response to performance decrements (Allen, Panian & Lotz, 1979; Gamson & Scotch, 1964), regardless of their capabilities. A leader is a visible target to blame. His removal appeases dominant constituency groups. Thus, lower levels of executive tenure can be expected in poorly performing firms.

Leadership Variables

Corporate leaders are those with the most responsibility and position power in the organization. The executive level managers of American corporations have been understudied in contrast to their boards of directors. This is undoubtedly due to the board's legal responsibility for the behavior of the organization. However, it has been argued that insider board members have control over the organization by virtue of their position and stock interests (Pedersen & Tabb, 1976). In reality, many of these board members are inside managers. They may dominate the board via membership as well as superior knowledge of the firm's business (Mizruchi, 1983). It is

sensible to proceed on the assumption that in organizations, those holding the highest positions as well as those with major input into decisions are the true "leaders." In the present study, executives with the rank of vice president and above are defined as corporate leaders. This is also supported by Mintzberg's (1979) description of roleholders in the strategic apex, as well as their definition in prior work (e.g., Wagner, et al, 1984).

The contribution of the present research lies in its comparability and extension of previous findings about the influence of leadership on organizational performance. This was attempted by considering the leader effect from a different perspective.

The approach taken here was prescribed by the research questions constructed around the individual leader, leader-group and leader group levels of analysis. Examination of these questions as well as selection of constructs and their measures was guided by network theory and demography. As such, the proposed research has tangential merit since it also extends the literature in both these areas.

Network constructs were adapted to the exploration of leader group inequality, insularity, and stability, which evaluate all members of the leader group along selected demographic characteristics; the individual level leader variables of prominent star visibility and gatekeeper role through extraorganizational membership; and the individual-group level variable of central bridge which assesses the leader's tenure relationship with the other group members.

What is hypothesized in the present context is that examination of the leader and leader group network properties will demonstrate an

association between these properties and organizational performance. The concept of a network, prevalent in sociological studies has seldom been applied to the study of organizational behavior. Therefore, a brief introduction to network analysis precedes the definition of specific network variables and their relationship to organizational performance.

Networks

A network is a well-defined set of persons, objects or events that are linked through relations. The content of such relations may include communication, boundary penetration, instrumentality, sentiment, exchange of power and authority, and/or kinship links. It is a major premise of network analysis that the structure of these relations and the location of any individual within the network has significant behavioral, perceptual and attitudinal consequences for the network as a whole as well as for individual network participants (Knoke & Kuklinski, 1982).

The social structure of a group can be assessed through matrix construction and primary data collection. Network members are asked to identify those with whom they have a relationship specified by the researcher. It may also be assessed through ratio measures from secondary data sources. The ratio or percentage of network members similarly classified, as well as the distance between each pair of network members can be calculated, as can the distribution of network members over a selected criterion (Blau, 1981). It is the second method that is most appropriate for the present research.

Network concepts easily lend themselves to various levels of analysis:

1) The position of an individual within a network can be assessed by the frequency and type of relations present between the subject individual and other network members.
2) Pairs of network members (dyads) can be examined for direct ties through common possession of a characteristic or involvement in the same activity.
3) The entire network may be studied by examining the linkage patterns among all members. Variations in these patterns may be compared with those of other networks in a population sample (Burt, 1981).

Each of these levels can be assessed through the construction of a matrix or with qualitative and quantitative measures. Regardless of which is selected, the reciprocity of relations i.e., the symmetry of network transactions, cannot properly be determined if all network members have not responded accurately (Burt, 1981; 1982). The use of secondary data on top managers avoids this problem. However, by nature of the data, the choices, interaction patterns, communication and influences processes of the executive group can only be inferred.

Demography

Demography is the study of the size, composition, distribution, and characteristics of a population, their respective changes (Nam, 1979), and their association with other societal factors (Nam, 1982). Demographic statistics are effective gauges of the status and change of a social system (Land & McMillen, 1979).

In ecological terms, the demography of the population inside and outside an organization influences the growth and exit of labor populations and explain organizational growth, maintenance and decline (Stinchcombe, McDill, Walker, 1968). Reed (1978) argues for a demographic approach to the identification of cohorts which serve as catalysts of organizational politics as well as produce change and adaptation. Tichy, Tushman & Fombrun (1979) believe social networks provide a useful framework from which to analyze organizational structure and processes, as well as intra and interorganizational relationships.

It has been proposed that cohorts defined by a date of entry or tenure criterion, are influenced by organizational personnel policies, growth and technology. Cohorts in turn, influence succession and performance, control and power distribution, interorganizational relationships, career paths and cohort relations. These antecedents and outcomes of cohort characteristics are recursive. (see Pfeffer, 1983, p. 321).

The present study uses demographic indicators to assess the pattern of cohort formulation and other network properties of members of the upper level subsystem of corporate organizations.

Summary of Model

The specific model investigated can be summarized as:

Performance =f(ENVIRONMENTAL + ORGANIZATIONAL + LEADERSHIP)

Stock Price	Year	Technology	Group
P/A Ratio	Industry GNP	Capital	Inequality
	Industry	Administrative	Insularity
	Concentration	Size	Stability
		$ Assets	Indiv-Group
		Number Employees	Bridge
		Ownership	Individual
		Inside	Star
		Outside	Gatekeeper
		Performance t-n	

What is presented in the next section are the constructs, definitions, measures, hypotheses and rationales of the proposed leader network attributes and organizational performance. Hypothesized relationships are presented schematically in figures 1, 2 and 3.

The method and source of data collection did not allow for examination of the moderating effects of leader and leader group dynamics. Accordingly, the hypotheses that are delineated in the next section only address the leader's influence on performance and not the moderating processes. Environmental and organizational factors are also excluded from the hypotheses since they are in the model for control and comparison purposes only. It is the intention of the researcher to focus primarily on the "leader effect".

HYPOTHESES

Group Level Hypotheses

Variable: Inequality

Definition: The dispersion of organizational entry dates among individual network members.

Measure: The average Euclidean distance between all combinations of network dyads based on date of entry into the organization.

Hypothesis: The relationship between inequality or dispersion of entry dates in the leadership group and organizational performance is negative.

Network analyses often examines the dispersion or clustering of network members along various dimensions (Lincoln, 1982; Tichy, Tushman & Fombrun, 1979). However, the identification of clusters as well as their interpretation is notoriously problematic (Knoke & Kuklinski, 1982). It is conceptually and statistically more appropriate to examine the distribution of a sample along a criterion measure when testing hypotheses, rather than investigate ill-defined clusters. Thus, the term equality rather than clustering is preferable to indicate level of dispersion.

The relative equality/inequality of wealth distribution across a population, often used in economic analyses, may be used to describe the social structure of a group's membership distribution along a quantitative parameter (Blau, 1977). This is conceptually similar to the network property of clustering members into dense regions (Tichy, Tushman & Fombrun, 1979) and inspection of the closeness of such

clusters to each other (Lincoln, 1982).

Pictorially, equality of wealth distributed across a population as the X and Y axis of a graph shows points equally dispersed along both axes. Inequality of the distribution of wealth, on the other hand, would be the case where much wealth is concentrated in the hands of a few. It would appear as a cluster on a graph (Blau, 1982).

These concepts have been adapted and redefined for use in the present data set to study population dispersion and cohort formation in large organizations. Equality in the present case, would denote similarity of entry date into the company. Inequality would imply dispersion of these entry dates, or members entering the organization at different points in time. Thus, these terms in the present case are not equivalent to their definition in economic analysis. In fact, they are defined in the reverse direction.

Inequality in the upper level managerial sphere, then, would reveal a group with varying dates of entry into the company. There are several implications for the group's social processes and decision outcomes if it is characterized by equality or inequality.

In the case of inequality of entry dates, some heterogeneity of tenure would exist. This allows for the fresh insights and perspectives of newcomers, as well as the seasoned experience of the more tenured group members. However, it would not be conducive to cohort formation, since there would be a lower probability of similarity of attitudes, values and perceptions. The formation of such cohort groups is necessary to smooth group processing of information and decision making. Cohort membership provides social support and creates feelings of mutual trust

and respect. This allows for healthy debate since there is little fear of ridicule or dismissal. It aids in consensus building which allows for a quick response to critical situations. This would not be so if there is a great disparity in entry dates. The probability of communication and interaction would be low; generation gaps would be expected. Such dispersion, associated with conflict and low levels of satisfaction, may generate further turnover and continual group readjustments. The ensuing heterogeneity would distract decision makers from organizational concerns, generate a short term perspective and result in poorer quality decisions.

The public corporations included in the sample are already large and established in their respective lines of business. Such a sample would benefit from group equality in terms of longer organizational tenure i.e., the group members should have closely clustered dates of organizational entry and ample company experience. A cohort of longer tenured top managers should enhance corporate performance. A cohesive group counteracts the generation gaps, preoccupation with social processes, chaos and the downward performance spiral demonstrated with the entrance of newcomers. The resulting social support should also facilitate the empowering process associated with leadership (Conger, 1989).

A group that is similar in terms of tenure does not necessarily imply stagnation. Group members may change by promoting newcomers from other areas of the organization. Promotion from within supports career paths, increases motivation and actually provides the job security that encourages calculated risk taking. It is the personnel policy of

companies considered successful (Peters & Waterman, 1982). Job security fosters a long term perspective, as there is enough learning of the corporation's workings and time available to accurately research and assess the short and long term value of various projects, etc. It is the mobility and short tenure of corporate managers that fosters a short term perspective, incomplete knowledge of the firm and lack of responsibility for corporate outcomes, that has been associated with America's loss of market competitiveness (Ouchi, 1981).

A management group with long corporate tenure does not mean the group is necessarily homogeneous. The composition of the group may change in response to environmental conditions by selecting new executives from internal labor pools. Although the group may be similar in terms of organizational tenure, the individual managers may have lived in diverse locales, had different functional backgrounds, be of various ages and had career experiences in various other companies and industries. Also, heterogeneity in top management group tenure may vary. If those who are promoted into upper management have worked for the company long enough, their capabilities, skills and personalities are known. The appropriateness of the individual for a top management position and the distinctive competencies he would bring to the group allows incumbent group members to make a good social and skill fit among the position, the individual, and other group members. They are guaranteed a new, capable manager well schooled in the company's history, policies and procedures. There is time to assess the individual further and groom him for a position such as President or CEO. Longer tenured managers allow for an orderly succession process which is less

disruptive to the company (Vancil, 1987). Therefore, equality here is posited as enhancing performance in corporate samples since it denotes experienced, longer tenured upper level managers.

Restated and as hypothesized, inequality or dispersion of executive entry dates should have a negative impact on performance.

Criterion

Date of entry into the organization is the criterion rather than entry into the executive constellation, because the latter would not reflect the degree of socialization into the organization's culture. For example, if two managers entered the executive constellation five years ago, there would be no indication of whether both had entered from outside or inside the organization, or whether one had worked for the company for twenty years. It might then be concluded that two managers with the same date of entry, one from inside and one from outside the firm, would have similar preference orderings in comparison with two managers who worked for the company for twenty years, but entered the top management group at different times. The assumption of greater similarity in the first case described above is also not warranted based upon cohort-related research (e.g., McCain et al., 1983; Wagner et al., 1984).

Measurement

Several measure of inequality in social aggregates are available, such as the Gini Coefficient utilized in economic analyses; another is a heterogeneity index which gauges the distribution of subjects over selected categories (Blau, 1977). The measurement preferred in the present research is the Euclidean distance between each individual and

each other member of the group. It was chosen for the following reasons:

1) It captures the precision of ratio level data in comparison with existing categorical variables.
2) It is believed to be a more accurate indicator of the extent of similarity or dissimilarity in a group (Wagner, et al, 1984).
3) It has empirically demonstrated its sensitivity to the date of entry distribution in a group by its predictive ability (Wagner, et al., 1984).

The distance statistic has much utility because it takes into account dispersion, profile level and shape, and can be subjected to rigorous types of analyses (Nunnally, 1978). Individuals who have a smaller date of entry distance from all other group members are similar to each other and are considered cohorts. The shorter the distance, the greater the equality. The greater the distance, the greater the inequality of the group. The member's dyadic distances may be summarized and the average degree of distance computed across the entire group, providing a quantitative measure that facilitates further analyses.

Such dispersion, with its consequences for social influence and decision making, are hypothesized to have a negative impact on performance.

Variable: Insularity

Definition: The number of internal links of a social unit as a ratio of the number of possible external links (adapted from Tichy & Fombrun, 1979).

Measure: The ratio of the number of company career top managers to the total number of top managers.

Hypothesis: Insularity is negatively related to organizational performance.

Organizations must remain open to environmental changes and adapt themselves accordingly if they are to survive (Aldrich, 1979). Adaptation is a process that occurs over time. Therefore, an organization that remains closed to environmental signals should undergo the process of negative entropy for a period of time before its demise. In the long run, despite organizational slack, the longer the organization remains closed to its environment, the less adaptive it becomes.

Corporate executives are charged with seeking predictable relations with environmental constituency groups in order to reduce uncertainty and maintain equilibrium (Pfeffer & Lebleici, 1973). Often the solution to problems with these relationships is to change the leader (Thompson, 1967). The newcomers have no vested interest in previous procedures and are willing to make necessary changes.

The empirical evidence cited earlier supports the beneficial effects of openness to outsiders. Outside leader succession extends the leader group by promoting a higher incidence of personnel changes (Brown, 1982; Gouldner, 1954; Helmich & Brown, 1972). The results of

these changes are generally positive in terms of innovations (Carlson, 1964), growth (Helmich, 1974), survival (Carroll, 1984) and revenues (Stearns, 1984). However, outsiders may only focus on short term gains, take longer to learn the corporate culture and have difficulty with incumbent acceptance of authority (Gabarro, 1985).

Inside succession, which is associated with fewer personnel changes, seldom opens the executive system (Helmich, 1974; Gordon & Rosen, 1981). Explanations for this include the proclivity of insiders to repay political debts (Carlson, 1962) as well as the preservation of formal and informal networks that support the leader's power (Helmich, 1974; Gouldner, 1954). Insular academic institutions with a greater proportion of long tenured professors showed a decreased ability to attract students, supply faculty and interact with other schools (Baty, Evan & Rothermel, 1971). The researchers concluded that inbreeding lead to the degeneration of a system. However, this situation is not necessarily applicable to large organizations which have larger labor pools and vacancy chains than an academic department.

Insularity may be avoided by means other than the entry of top managers directly from the outside. Hiring people at middle and lower levels with experience in the public sector, academia, other companies and industries, allows for technology and information transfer and the formulation of new procedures and methods of information processing and decision making. The organization learns from these individuals, while the individuals learn about the organization. After sufficient time to accurately assess performance and the individual organizational match, those qualified can be promoted.

Some organizational experience is desirable, and should counterbalance the problems of outside succession such as gaining the acceptance of the group and learning about the company. The new executive should ideally be knowledgeable in the company's purpose and procedures and familiar to group members. Therefore, the ideal situation is to promote a top manager with some diversity in his background but with experience in the company's business. This can be achieved through the promotion from within of noncareer managers. Opening the group to such members increases the pool of information, skills and perspectives that sustain information processing, decision making and goal formation. This should strengthen environmental alignment, with minimal disruption of the social system of the group.

Maintaining an insular group of career managers offers the benefit of social support and consensus characteristic of a cohort, since members most likely followed the same career path to the top. It also insures the individuals' familiarity with company history and culture, and have developed a long term decision making perspective. The individuals in the group should be accustomed to one another, and need little time to adjust to the "personality" of the group. Furthermore, Perrow (1972) argues that tenure is a necessary motivator, as it allows the individual to conceive of his involvement in organizational learning as an investment.

Secure in their tenure and with the prior performance of the company if satisfactory, group members may become complacent and cease attending to the environment. However, if a need for change becomes apparent, a group with career and tenure homogeneity might not have the

necessary skills and perspectives to change the status quo and foster adaptation. Their previous experiences within the company and their present state of group homogeneity may result in faulty information processing and decision making under transformed environmental conditions. The outcome of such a situation is certain decline, in today's world of global competition and increased rapidity of change. The business climate of the 1976-1985 time frame in the present study was vastly different from that of prior years. It was during earlier years, in a comparatively more simple, stable, certain environment that the career executives in the present study had their training in alternative formation and decision making.

This rationale, as well as the findings for insider and outsider succession and performance, are the basis of the hypothesis that insularity, measured by the ratio of career to total managers, is negatively related to organizational performance.

Variable: Stability

Definition: The degree to which a network pattern changes over time (Tichy, Tushman & Fombrun, 1979).

Hypothesis: Stability (the lack of change over time) is negatively associated with organizational performance.

Measure: The average length of group company tenure and the standard deviation of such tenure in the top management group.

Bureaucratic theory holds that organizations maintain efficiency through personnel stability. The roleholder becomes thoroughly familiar with his job and can, therefore, work quickly with few mistakes. Procedures and patterns of interaction are routinized and well known.

However, the section of the organization under investigation in the present study is the strategic apex or top management team. This segment of the organizational serves as an interface between the environment and other subsystems of the organization. Given the continual changes in our environment and that corporate executive tasks are the most ill defined and conceptual of the organization, the benefits of stability would not necessarily be applicable at this level. On the other hand, personnel stability in the top management group provides a sense of security to major constituencies within and outside the organization. Stability of managerial personnel as indicated by tenure, signifies only the best and brightest of experienced personnel from within the company have ascended to its highest levels.

The average tenure measure selected is indicative of how much turnover has occurred (Pfeffer, 1983; McCain et al., 1983; Wagner et

al., 1984). Turnover offers the benefit of ridding the organization of incompetent and discontented people (Bluedorn, 1983). It provides variation in personnel which should increase awareness of new opportunities and requisite changes. Previous perceptions and retention of information are eliminated.

After innovative approaches to information processing and decision making are offered by new personnel, an amended organizational form should ensue. However, members who select a form are those most committed to its preservation. When this occurs, new modes of information processing and decision making are rejected, and the old structures retained. Consequently, turnover is necessary and inevitable if previous approaches are not suited to environmental conditions (Aldrich, 1979).

Lack of turnover signifies resistance to change in anticipation of and response to, environmental conditions. Over time, it should have a deleterious impact on organizational performance. However, longer tenure or little turnover, may also indicate the organization has gradually adjusted the strategic competencies of the group to environmental demands without the disruption of major personnel moves. It may represent a careful personnel strategy of selecting, developing and maintaining those with leadership potential to an eventual, smooth transition into upper management.

The central tendency of the group's tenure may not change dramatically, although the individuals members have. As argued in the inequality variable rationale, tenured managers should have a positive effect on cohort formation and group processes. This does not imply that

the group should remain static. Some variability, through careful replacement of long tenured managers with other experienced managers, should enhance organizational effectiveness. Over time, although the personnel have changed, their average tenure may not. For example, if the average organizational tenure is twenty years and remains twenty years five years later, it indicates some movement of personnel and replacement by experienced managers.

In order to determine whether this is, indeed, the situation, the standard deviation of tenure, representing variability, is the second measure selected to tap the underlying stability construct. More variability signifies less stability. The average group tenure measure is retained for its relevance to bureaucratic theory and position in the literature (Pfeffer, 1983). However, the standard deviation of the group's tenure is also included in the analysis as an indicator of variability.

The effect of variability of tenure on performance could be positive or negative. Too much inhibits cohort formation and can create cohort gaps; too little may fossilize the group in the face of environmental change. In general, some variability of tenure within a group of experienced corporate managers should have a positive effect on performance. Thus, the hypothesized relationship between stability and organizational performance is negative.

Individual Level Hypotheses

Variable: Prominent Star

Definition: The degree of positive visibility directed toward a CEO/President from the business press.

Measure: The ratio of positive to total business press citations about the CEO/President of a corporation.

Hypothesis: Prominent leaders are positively associated with organizational performance.

A network star is the recipient of the greatest number of nominations by other network members (Tichy, Tushman & Fombrun, 1979). This is analogous to a prominent network member, defined as one who is extensively the object of relations with other network members (Knoke & Burt, 1983). Both concepts are integrated for the present research purposes.

In structural terms, a star may be defined as the highest ranking roleholder in the organization. The location of this position in the organization confers prominence and prestige on its roleholder. In business corporations, this is the Chief Executive Officer. The prominence of a CEO/President may be considered not only within the executive group, but within the business community. The present research focuses on stars based on opinion external to the organization.

The source of nominations from the business community can be assessed through analysis of the business press. Periodicals such as Fortune, Business Week, etc., have high circulation rates and are extensively used sources for current business information. They gather

information primarily through profiling and interviewing the CEOs of corporations of interest. In network terms, those CEO/Presidents who are the most frequently and highly rated focus of press attention are stars.

The information presented about these corporate leaders is helpful to various constituencies, as it helps personalize the corporation. Press coverage provides valuable information about the leader's attitudes, values and behavior. If this content is positive, consumers are more likely to be confident in utilizing its products and/or services; investors can more fully judge the risks involved in corporate stocks and bonds. The organization's reputation is enhanced, allowing it to gain valuable resources. Public knowledge of the company's culture, plans and goals should, if positively portrayed, assure constituents of managerial ability. This ability should ultimately demonstrate itself in organization performance.

Another reason for the positive association between a chief executive star and good performance is the star's increased ability to recruit and retain an effective management team. In population ecology terms, the pool of personnel variations is greater since the star's management network and company is viewed as attractive by potential applicants at all levels. This increases the probability that the company will have the necessary human resources to meet present and future environmental demands. The ability of the star to recruit and select the personnel whose knowledge, skills and abilities match environmental demands should result in a top notch management team and high organizational performance levels.

Variable: Gatekeeper

Definitions: A star who links the network to external domains (Tichy, Tushman & Fombrun, 1979).

Measure: The absolute number of organizations for which the chief executive serves as a member of a governance mechanism.

Hypothesis: The greater the linkage with external domains, the higher the performance of the organization.

Environmental linkages are necessary in order to obtain resources such as information, capital and personnel, deemed essential to advance the corporation's mission and strategies. A gatekeeper should continually form and maintain contacts in order to secure relevant resources.

Environmental conditions create external pressures on the organization and increase uncertainty (Pfeffer, 1978). The organizational can contend with this uncertainty through formal and informal network coordination. This is facilitated by a leader with social influence.

One aspect of social influence is the presence of a CEO/President on the board of directors of other organizations (Falbe, 1984). Such membership provides access to information and a degree of control. The direct ties afforded by board membership are augmented by emergent indirect ties to other powerful individuals and groups, thereby widening the number of variations from which the organization can select resources. In other words, membership on a board and other such bodies

provides formal and informal environmental information, as well as broadens the range of power brokers, experienced managers, suppliers and clients known to a corporate leader. It assists in the learning process and should increase the competence of the leader.

Presence on a board indicates the member has some level of expertise in a given area or possesses some desirable attribute. While invitations to join a board may be the result of visibility, board membership offers additional public exposure. It reinforces the choice of the individual for a high ranking position by his employer.

The leader as a gatekeeper is measured by the number of outside board memberships, trustee and related positions held by the CEO/President of the focal organization as stated in the corporate proxy statement. The greater the experience of a top manager on the governance bodies of other organizations, the greater the learning experiences, which should have a positive impact on his primary, i.e., employer, organization.

Individual-Group Linkage Variable

Variable: Central Bridge

Definition: A leader that bridges communication between multiple individuals in a network.

Measure: The average distance in date of entry between the CEO and other top managers in the network.

Hypothesis: A leader that serves as a central bridge has a positive influence on organizational performance.

The holder of a bridge role can broker, access and control information (Knoke & Burt, 1983). This is facilitated when a leader occupies a central location in the network.

Centrality in a symmetrical communication network can be visualized as the hub of wheel (Bavelas & Barrett, 1951). This pattern of communication has the advantages of clear identification of the leader, group organization, stability, and rapid, accurate decisions. A central leader is in a better position to enhance the personal satisfaction of group members and alleviate morale problems.

In the present context, the bridge role of the leader is determined by his distance from each of the top managers in the organization's executive group based on their dates of entry into the company. Some CEO distance is necessary in order to execute the bridge role.

The leader must extend himself out of his cohort group in order to obtain the acceptance and input of other top managers. This is likely to occur if the leader is moderately dissimilar from other members. Moderate distance in entry date allows for the leader to bridge the distance between individuals and groups of individuals, as the leader is

more similar to each set of entrants than they are to each other. This increases the range and volume of contacts available to the leader.

The implications of this are that the leader will have access to a wider range of experiences, attitudes and opinions that promote discussion and examination of assumptions upon which alternatives and decisions depend. The negative processes or outcomes of conflict with the presence of two distant homogeneous cohort groups, are meditated by the leader. The leader should be able to relate to the senior and junior group members by acting as a communication conduit among the various cohort groups. This avoids misconceptions, anger and mistrust typical of large generational distances (Ryder, 1965) and reinforces feelings of alliance and social support.

The organization benefits from a bridge that integrates the heterogeneity of different cohort groups through the resultant higher quality decisions and their effect on performance levels.

Models of Hypothesized Relationships

The hypothesized "leader effect" on the group level, individual level and individual-group level are summarized in Exhibit 1. The dynamics of these effects as described are represented schematically for the group level in Figure 1; for the individual level in Figure 2; and, for the individual-group leader effect in Figure 3.

EXHIBIT 1

Summary of Hypothesized Relationships

Variable	Definition	Profit ability	Stock Price
Group Level			
Inequality	Average date of entry dispersion across group member dyads.	-	-
Insularity	Ratio of career to total number of top managers.	-	-
Stability	Average tenure of the executive leader group.	-	-
Individual Level			
Prominent Star	Ratio of positive to total business business press citation about the CEO/President.	+	+
Gatekeeper	Number of extraorganizational advisory/governance positions held by the CEO/President.	+	+
Individual-Group Level			
Bridge	Average CEO date of entry distance from other executive group members.	+	+

FIGURE 1

Group Level Leadership Hypothesized Relationships

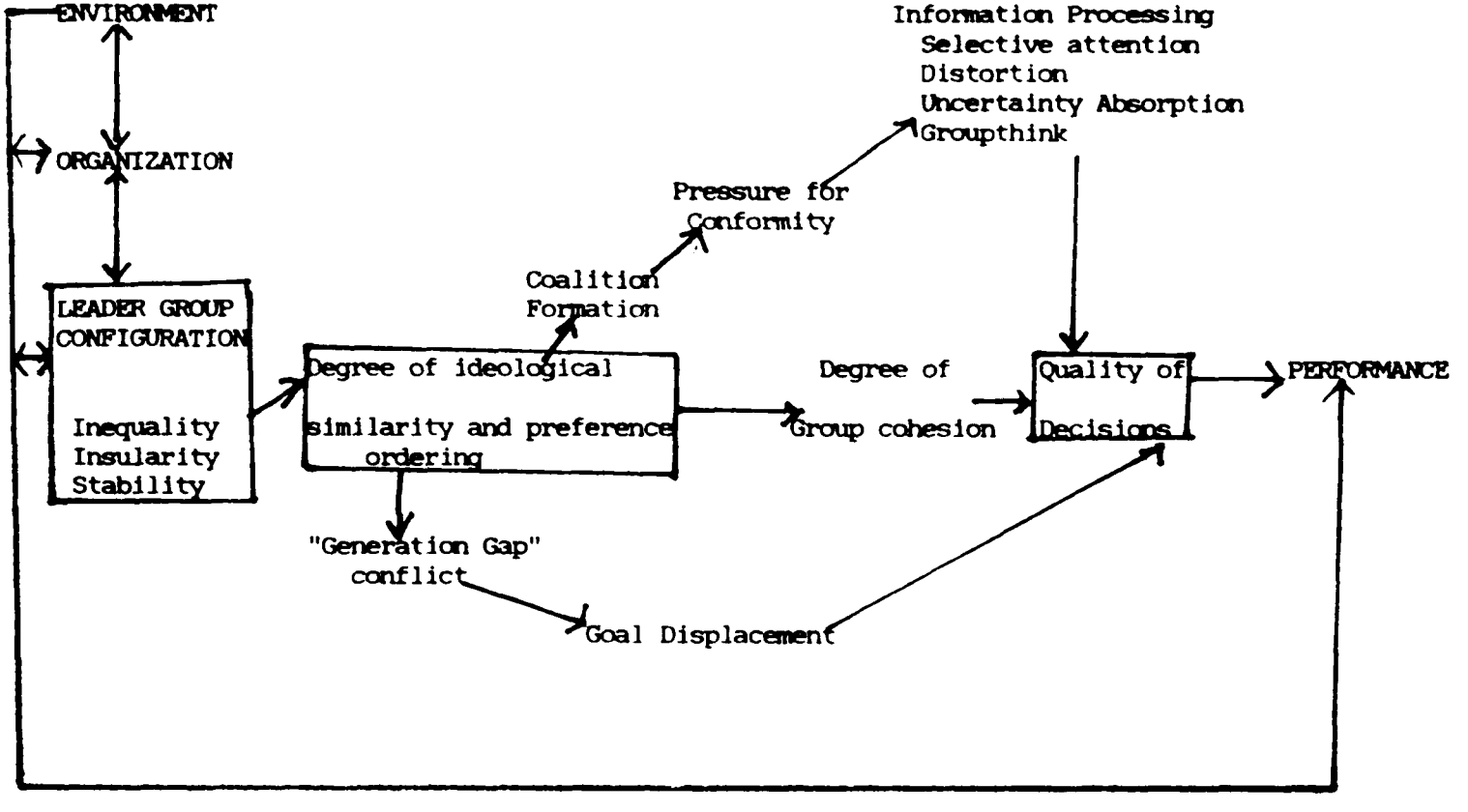


FIGURE 2

Individual Level Hypothesized Relationships

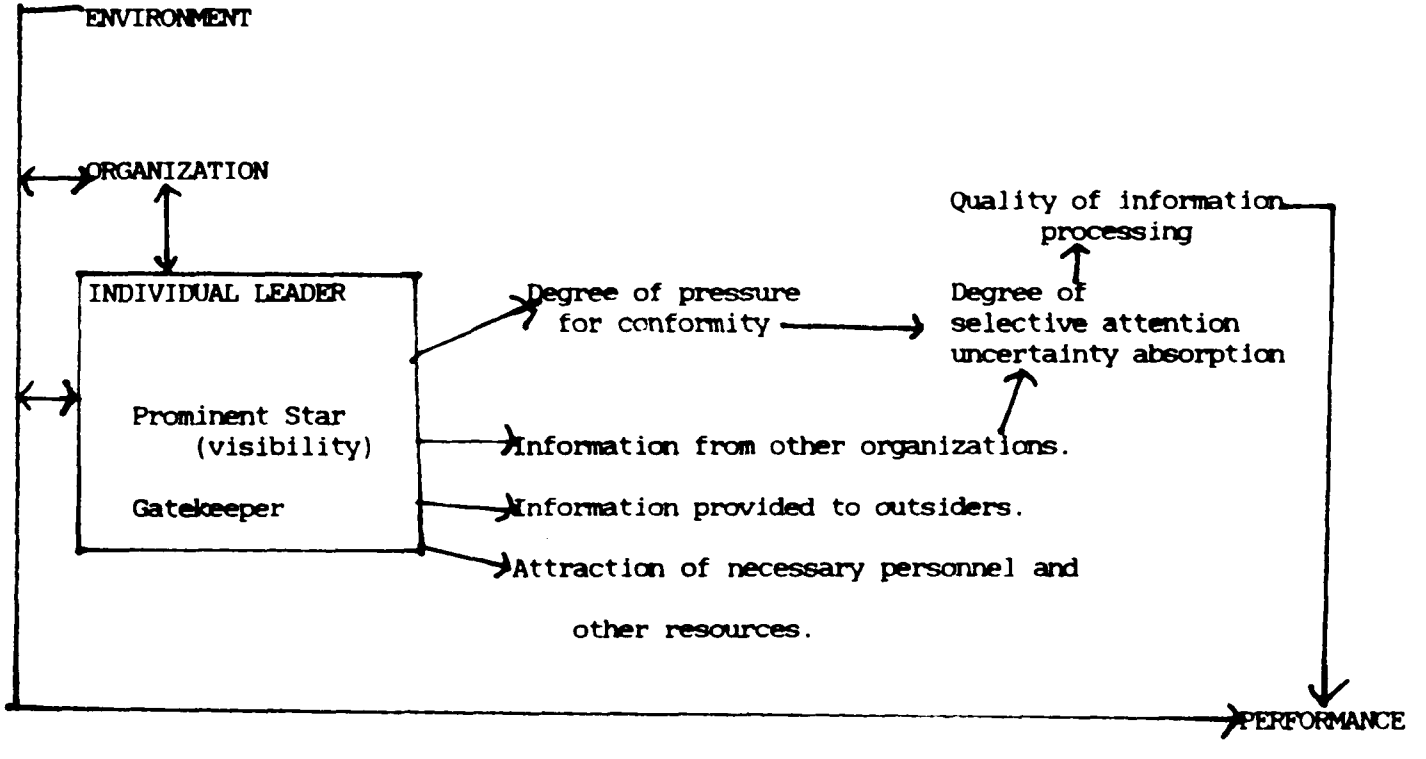
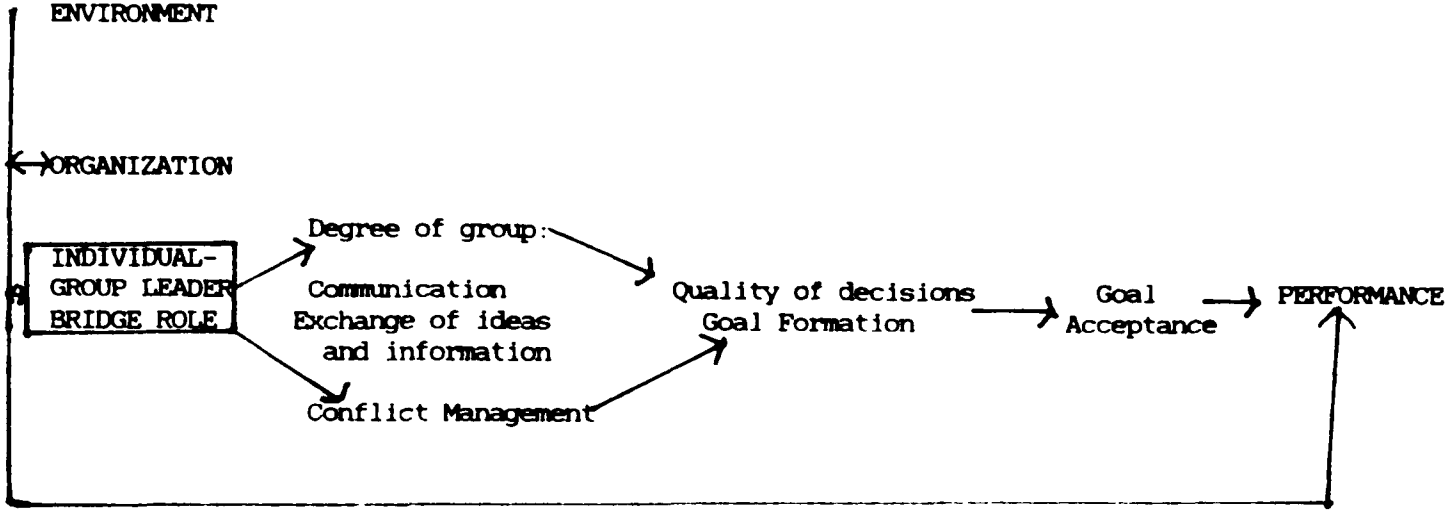


FIGURE 3

Hypothesized Relationship

Individual Leader Bridge Function and Organizational Performance



CHAPTER 3

METHOD

Time Frame

In order to maintain consistency with previous research and examine the long term effects of the independent variables, the present study was designed as longitudinal. Although prior research analyzed corporate data for a twenty year period, the conditions of this study necessitated a shorter time frame.

It was determined that a ten year time period would be appropriate for the present investigation for several reasons. First, it allowed for the inclusion of younger firms at different stages of their life cycles and in different industries than would be the case if a longer time frame was selected. Thus, a bias towards older firms in established industries such as manufacturing was potentially averted. Second, it decreased the probability of sample attrition. Organizations often change their corporate identity through such behaviors as mergers, acquisitions, bankruptcy and reorganization; the stock of smaller firms is sometimes delisted and no public data is available. The longer the time frame, the greater the likelihood of such occurrences. Third, data availability was also a problem in time series research. Vintage corporate records are more difficult to obtain from the corporations that provide such information from the Securities and Exchange Commission (S.E.C) data base. The older the records, the more likely they are to be unavailable. From a practical standpoint, much of the data was available on microfiche, whose quality deteriorated with age. Corporate filing requirements have continually changed towards greater

disclosure. A focus on more recent corporate records insured the same level of detailed information was available for all firms studied.

Sample Selection

The sample was confined by data availability to public corporations. This created some bias towards larger corporations since those that fall below $5 million dollars in assets and have less than 300 shareholders are exempted from filing 10-K reports with the S.E.C. They would be excluded from the pool of companies sampled.

Since data collection began in mid 1986, the years 1976-1985 were examined. It is not uncommon for copies of corporate reports such as 10-Ks that correspond to a December fiscal year to be unavailable at government depositories until the following May. Occasionally, the company is given an extension for filing all or part of a required report. By designating the last year of the time series to be 1985, availability of all selected company filings was assured.

The companies were sampled from a 1982 Disclosure data base list since it was an approximate midpoint of the selected time frame. It offered some convenience, since the government figures consulted for industry GNP were constant in 1982 dollars; 1982 was also a census year.

It was arbitrarily decided that the companies sampled should have filed reports with the Securities Exchange Commission for at least a majority of the years under investigation, i.e., any six out of the ten designated years, in order to preserve the longitudinal design while preventing sample attrition as organizations changed.

The 1982 Disclosure data base consisted of 12,000 potential companies organized into 239 columns. The listing was sixty pages long

with four columns of company names for 59 pages and one last page with three columns.

A Basic program random seed generated 239 random numbers. The first number generated was assigned to the first company column listing, the second to the second column, etc. The random number assigned to each column was counted from the top down, and the corresponding company was assigned to the sample. However, some corporations had their investment trust series occupy more than one column which would yield duplicate firms. This occurred for seven firms with twenty trust series. After these were subtracted from the pool of 239 columns, 219 columns contained viable choices for inclusion in the sample.

Each organization selected was then researched to determine its suitability for sample inclusion. This was accomplished by consulting corporate 10-K reports, annual reports and proxy statements filed with the Securities Exchange Commission (S.E.C.). as available at the S.E.C. New York Branch and government depository libraries. The firm's 10-K report for 1982 was scrutinized for information concerning parents and subsidiaries (usually in Item 4). If no reports were available for 1982, the most proximal preceding or following year's reports were used. In two cases, subsidiaries of a parent already included in the sample were identified, further limiting the companies available to 217.

If a company's records were not available through public filings, its name was researched in sources such as The Dun & Bradstreet Directory of Corporate Affiliations, Moody's Manual, Standard and Poor's Register of Corporations and both North American and International volumes of Who Owns Whom for 1982 and proximal years, in order to

identify the company's origins. If over 50% of the company was owned by another company, the parent organization was included in the sample, provided data was available. Ultimate control over decisions for the subsidiary lies with the parent's executives. If the company was owned by another company with headquarters outside the United States, it was excluded from the sample. If no information about the company was available, it was eliminated from the sample.

In some cases, the date of entry of corporate managers could not be determined from corporate reports. The S.E.C. only requires corporations to disclose their executive's positions and career experiences for the previous five years. Sometimes, a company will only provide the minimal amount of biographical data for executives as required by law. Usually, they provide additional information beyond legal requirements, especially if the executive is relatively new. Sources such as The Dun & Bradstreet Directory of Corporate Management or Who's Who in Commerce and Industry were also consulted. These privately published directories gather their data from corporate filings as well as directly from the executives. If the individual manager did not choose to reveal his biography beyond what is publicly available, and his date of entry could not be backtracked via previous records, the company was omitted from the sample. This was so even if one top manager's biography was unobtainable, because it would leave that corporate network composition incomplete and render the subsequent analysis misleading.

In all, 101 companies remained in the sample for a total of 946 observations over all ten years. Not all necessary data was available for each year for the entire ten years. Occasionally, it was missing

from the S.E.C. data base or the company was exempted from filing in a particular year. Of the 946 observations, the distribution of frequencies per year is as follows:

Year	Number of Firms
1976	94
1977	97
1978	99
1979	99
1980	100
1981	100
1982	94
1983	92
1984	89
1985	82

A listing of these companies along with the years for which data was collected as available appears in Appendix A.

Comparison of Sample Included and Excluded Firms

Due to the extent of sample attrition, a chi square test of the frequencies of firms included and excluded from the sample was performed by industry, to determine whether there was any significant difference between the two groups. Since the observed frequencies often fell below five per cell when four digit S.I.C. codes were used, industry frequencies were collapsed into the following six categories and corresponding S.I.C. Codes:

Agriculture/Mining	0000-1999
Durable/Nondurable Manufacturing	2000-3999
Transportation, Transportation Services, Electric Gas, Sanitary, Communication	4000-4999
Wholesale/Retail Trade	5000-5999
Banking, Securities, Insurance companies and services, real estate and holding companies	6000-6999
Services	7000-7999

The chi square statistic, $X^2_{(1)} = 27.28$, ($p<.001$) indicated that the industry frequencies of companies included in the sample were significantly different from those excluded. Specifically, firms in the agriculture/mining category were under represented $X^2_{(1)} = 6.42$, ($p<.05$); durable and nondurable manufacturing firms were over represented $X^2_{(1)}=12.16$ ($p<.001$), and firms in financially related industries were under represented $X^2_{(1)} = 8.22$ ($p<.01$). There were no significant differences in the frequencies of included and excluded firms for the transportation and electric, gas, sanitary and communication services industries; wholesale and retail trade industries, and service based firms. The total sample distribution by percentage in these six categories was:

Agriculture/Mining	14.06
Durable/Nondurable Manufacturing	36.37
Transportation, Transportation Services, Electric, etc.	9.30
Wholesale/Retail Trade	8.35
Banking, Securities, Insurance	22.41
Services	7.51

It is assumed the initial random sampling was representative of the population. The degree to which the final sample composition deviated from that of the population of Disclosure listed firms could not be accurately assessed. There is no source, including government bureaus, against which to check the industry distribution of the 101 sample firms. However, it does appear that the benefits of a randomized sample selection were compromised.

Sample Description

The distribution of the firms by size indicated the sample was dominated by large firms based on the categories of the U.S.

Statistical Abstract (1986). This was reinforced by the descriptive statistics (see Table 2). The average total assets of sample firms was almost three billion dollars, with an approximate average number of employees of 19,000. This, when taken with firm age, shows a sample bias of large, established firms.

However, some variables reflected the presence of smaller firms. Both inside and outside ownership figures were high as is characteristic of smaller, owner managed firms. After all, Burch (1972) argues that less than 1% ownership of General Motors stock could be considered a controlling force, which illustrates the tendency toward stock ownership dispersion with the greater capital requirements of larger firms. The S.E.C. employs a more generous allowance, and requires outside owners of more than 5% of the total voting stock to be identified. Average sample inside and outside ownership figures were well above that point (see Table 2).

The average group tenure and ratio of career to total managers, contacts and citations were also indicative of smaller firms. The average tenure of 13.48 is on the low side, considering that the average managerial age was 50.30 years. The low ratio of career managers implies that the company is not old enough to have a substantial labor pool from which to select top managers. The top managers of some of these sample firms may have gained experience elsewhere and then founded their own firms.

The low mean number of citations and contacts, i.e., less than two each, was more characteristic of unknown, smaller firms. CEO/Presidents of small firms are less likely to be found on other boards of directors

and will not warrant as much national press attention as would larger firms.

The influence of smaller firms is also present in the dependent variables. The sample firms were not impressively profitable nor was their stock selling at an average high price during a period of relative growth in the stock market (U.S. Government Business & Commerce Digest, March, 1988).

The large standard deviation in the organizational level variables (see Table 2) indicated the desirable diversity of firm characteristics. However, as discussed above, the benefits of random selection were jeopardized by sample attrition.

MEASURES

The measures described briefly in the preceding chapter are more fully explained below.

Environmental Variables

Year

If the data is partitioned into yearly segments, the environmental effects should be equally influential for each company. Although there was some variance in fiscal years, most of the companies had fiscal years in the later month of the year, with 45% of them in December. In two cases where the companies had fiscal years ending January 31st, the following year was used i.e., 1977 to 1986 to make their data more comparable to the other firms. Therefore, divergence in reporting periods was not regarded as a significant problem. The influence of environmental factors during a chronological year should have a equivalent impact on all sample firms.

Industry GNP

The National Income and Product Accounts of the U.S. 1929-1982 (1986) Table 6.2, and Table 701 GNP By Industry 1980-1985 of the Statistical Abstract of the United States (1986) provide Industry GNP figures in constant 1982 dollars. Their tables provide industry wide GNPs as well as specific figures for industry subsets. For example, manufacturing is decomposed into durable and nondurable, with ten descriptions within each subset.

If the company's business type did not match the industry GNP descriptions, the company's self description as it appeared in Item 1 of its 10-K report for that year was reexamined. The firm's self categorized major line of business was translated into an S.I.C. classification using the S.I.C. Manual (1972) descriptions. This usually then facilitated a match with the industry GNP descriptions. This was performed as necessary for each company for each year, since a firm's S.I.C. code may have changed more than once over the time span studied. Incidentally, the change of primary S.I.C. Codes or the number of S.I.C. codes per company presented an engaging picture of adaptation.

Industry Concentration

The U.S. Department of Commerce, Bureau of the Census, compiled industry data for two years, 1977 and 1982, within the ten years studied. Since this was often the only data available to determine industry concentration, the 1977 figures were used to indicate industry concentration for 1976, 1977, 1978 and 1979. The 1982 figures were used for 1980-1985 years. This assignment was based on the proximity of each year to the 1977 and 1982 Census figures.

Four digit S.I.C. codes were used to judge concentration in order to get as specific a measure of a company's environment as possible. For each sample company, many of which were diversified, the primary S.I.C. Code was determined by the four-digit number available on the 10-K and annual report microfiche header cards. These were cross referenced for accuracy with the company's described line of business in Item 1 of the 10-K. Researchers should be cautioned that there are occasional mistakes on the header cards.

The Bureau of the Census does not have a uniform reporting procedure for concentration due to inherent industry differences. Regardless of the criteria, concentration in each industry is reported for all firms, as well as for the 4, 8, 20 and 50 largest firms. In the present sample, the figures for the largest eight were included to aid comparability with other research (e.g., Weiner & Mahoney, 1981).

Industry concentration figures were taken from the respective government industry census reports as follows. The concentration for durable and nondurable manufacturers with S.I.C. Codes from 2000-3999 was taken from the Census of Manufacture. It determines concentration by totalling the value of shipments, defined as the net selling value F.O.B. plant, exclusive of freight and taxes. The Census of Wholesale Trade covering S.I.C. Codes 5000-5299 and the Census of Retail Trade covering 5300-5999 industries both determine concentration based on a sales criterion. Concentration ratios for service industries are calculated by total dollar value of receipts, for three digit S.I.C. codes of 700-891.

Unfortunately, the Census Bureau does not provide concentration ratios for every industry. The Census of Mineral Industries covers S.I.C. codes 1000-1999. The summary statistics are arranged by values (in millions of dollars) of shipments and receipts by number of employees. No concentration figures by the largest firm groups are available in either the 1977 or 1982 Census. Proceeding on the assumption that the largest firms are likely to employ the greatest number of employees, the dollar value of shipments and receipts for the eight largest employers was added, and their percentage of the total value of shipments and receipts computed. This percentage was the best approximation of concentration possible, given the data provided.

There is no census information available for industries beyond those described above, although some government data does exist. Thus, the necessary calculations were made through a variety of means depending on the industry. First, the U.S. Statistical Abstract was consulted to acquire the appropriate criterion and total yearly figure for the specific industry. For example, the total assets of all commercial banks would be tabled. The eight largest of such banks, based on assets, was established by consulting the Fortune industry ranking for 1977 and 1982 to conform to the time periods covered by the Census. Concentration was then established by dividing the total assets for that industry by the total assets held by the largest eight. The same procedure was used to estimate concentration for insurance companies in the sample.

This procedure was not always feasible. Some business press rankings in a category actually intermingle distinct S.I.C. Codes. For

example, a transportation industry listing might include railroads, trucking firms and airlines. To avoid distortion, the total figure for a specific industry, such as airline transportation (S.I.C. Code 4511) based on operating revenues, was taken from the U.S. Statistical Abstract. Ward's Directory was consulted for the operating revenues for the top eight firms in that specific four digit industry for 1977 or 1982. This procedure was followed for any other firms in the sample for which Census Bureau Information was not available. This included firms in such areas as private utility and sanitation suppliers, insurance agencies and real estate agencies.

Organizational Variables

All organizational variables were taken from the corporation's balance sheet and income statement as they appear in the 10-K report. Occasionally, the annual report was used when the 10-K was unavailable.

Technology - Capital technology was computed by taking the total dollar value of capital assets (i.e.,) machinery from the corporatE balance sheet, and dividing it by the number of employees. Administrative technology was determined by taking the total dollar value of administrative and selling expense from the firm's income statement, divided by the total number of employees.

Ownership - Ownership figures were taken from either the 10-K or proxy statement. Inside ownership was determined by the total number of common stock i.e., voting shares held by the corporation's top managers. Any shares held by the managers' immediate family members for which they disclaimed any control over were not included. Outside ownership was determined by total holdings of the stockholders of record as delineated

by the S.E.C., i.e., the total amount of stock held by those groups or individuals owning 5% or more of voting stock.

Leadership Variables

The measurement of specific leadership variables was described in the previous chapter. This section offers a further explanation of each measure.

These managers are defined in the present study as those with the rank of vice president and above. This was based on Mintzberg's (1979) description of roleholders in the organization's strategic apex, as well as empirical specification of corporate leaders (e.g., Wagner, et al, 1984;). Corporate S.E.C. filings such as the annual report and 10-K statement identify corporate leaders as those with the rank of vice president and above. Larger firms often distinguish between executive vice presidents and divisional vice presidents. There are greater numbers of divisional vice presidents, who are of lower rank than executive vice presidents. When sample firms made such a distinction, only the executive vice presidents were considered.

Earlier studies (Helmich & Brown, 1972), omitted the positions of chairman, honorary or founder chairman and vice chairman positions on the supposition that they were more concerned with long term planning and community affairs rather than operating decisions. They were included as leaders in the present study for several reasons. First, long term planning and the management of environmental relations are the responsibilities of the upper region of the organization. These activities are essential to organizational survival. Second, these positions are often created for tenured individuals in order to maintain

their expertise while forming vacancy chains. Third, these honorary positions, usually occupied by long tenured personnel, offer a repository of information on the company's history and culture that should not be ignored.

Inequality

Inequality was determined by computing the Euclidean distance between each manager and each other manager in the group utilizing the SPSS-X Cluster/Proximity subprocedure (Norusis, 1985). It should be noted that the Euclidean distance was equivalent to the absolute distance since only one variable, date of entry, was involved. A Fortran program totalled the pairwise distances, which were then divided by the total number of group members to control for the size of the group.

Insularity

The individual manager's biography was inspected and a judgement made whether he was a career or noncareer manager. Career managers were those who spent 95% of their career with the company. This was determined by their age at entry as well as number of years of military service. Many of the managers sampled served in various branches of the U.S. Military during World War II or the Korean War. If the individual manager served more than four years, he was coded as a noncareer manager. Presumably, those that spent more than the required number of years in the service during wartime reenlisted voluntarily. This reflects a conscious career choice. Being drafted does not. Managers that had no more than two years missing between the date of their graduation and date of entry into the sample company due to military

conscription were considered career managers. Those individuals who spent their early years with the company and left for a year or more to return to the original company were coded as noncareer managers. The latter reflects a clear desire to exit and return. A missing year between graduation and date of entry may have been spent in graduate school or noncareer related activities.

Stability

The average tenure was computed by subtracting each manager's date of entry from the year of study averaged out over the entire top management group.

Gatekeeper

The biography of the highest ranked top manager was inspected and the absolute frequency of board of director and trustee memberships, industry association memberships and other related affiliations was tallied.

Prominent Star

The leadership variable was assessed by abstracts appearing in ABI/Inform On Line Data Base Search, Data Base #15, for each yearly period. No industry trade or newspaper data bases were utilized since abstracts, necessary for the data coding, were not provided. On line sources were appropriate for the present research purpose since a high volume of information was required. This precluded usual methods of index searches for articles and photocopying which would have seriously lengthened the data collection time period, as well as taxed the resources of the researcher. The abstracts were independently coded by three coders - the researcher, a nonacademic professional and a full-

time employed, evening business student. In two instances, problems arose with the coding which were resolved after a group meeting.

Central Bridge

The Euclidean (i.e., absolute) distance between the highest ranked roleholder and each other group member was computed via the SPSS-X Cluster/Proximities subprocedure for the entire group, which was then divided by the total number of group members.

Dependent Variables

Stock Price

The corporation's 10-K report or annual report of its yearly high and low stock price was recorded. The midrange value of stock price was attained by taking the average of the two. For NASDAQ-listed stocks where the bid and asked for price is listed in corporate reports, the bid price was included in the belief it more accurately represents the market's perception of the company and its management.

Profitability

The firm's net income figure as it appeared on its yearly income statement was divided by the total dollar value of the firm's assets as they appeared on the balance sheet.

It was possible for both these dependent variables to respond to changes in environmental conditions not included in the model. Therefore, yearly figures for National GNP and New York Stock Exchange Composite Index (N.Y.S.E) were correlated with each dependent variable. They were insignificant for stock price and significant but negative and low for profitability (see Table 4). Since they did not contribute to

the behavior of either dependent variable, they were excluded from further analyses.

PROCEDURE

All data was collected by company and entered onto a specially prepared data sheet. All necessary calculations (of means, ratios etc.) were performed by SAS Basics (1985) computer procedures.

Environment Variables

The environmental variables of year and industry GNP were entered as recorded on the data sheet, as were the industry concentration ratios taken from census records. The other calculations of industry concentration were performed by hand before their entry into the computer data set.

Organizational Technology

Raw data for organizational variables number of employees, assets, and capital assets were recorded from the balance sheets. Selling, administrative expense and profit were derived from the income statement. SAS Basics (1985) compute statements were used to calculate the capital/labor ratio, administrative technology, and profit/assets ratios. Ownership figures for each corporate leader was available in either the 10-K report or proxy statement. They were totalled by hand and their sum entered into the data set. The same procedure was followed for outsider holdings of record, i.e., only the total percentage of such holdings was entered into the data set.

Leader Characteristics

Biographical data was gathered as stated in the corporate 10-K or proxy statement. If it was unavailable or unclear, an outside source

such as the Dun and Bradstreet Directory of Corporate Management was consulted. The privately published sources were also checked on a random basis to cross reference information that was available from the government documents, in order to determine the accuracy of the Directory. No discrepancies were found, and the directory-based biographical information was included as necessary for sample firms.

In total, 4,164 managers were surveyed. Their average tenure and age for each year surveyed was as follows:

Year	Tenure	Age
1976	15.02	50.36
1977	15.18	50.07
1978	16.03	50.33
1979	14.61	50.32
1980	14.34	49.83
1981	13.89	49.60
1982	13.36	49.41
1983	14.25	49.89
1984	13.55	49.60
1985	13.19	50.33

The Pearson product-moment correlation coefficient between date of entry and date of birth was $r=.53$ ($N=4164$, $p<.0001$), which fell outside the range of $r=.80$ usually considered for multicollinearity (Cohen & Cohen, 1975). Since the cohort concept as adapted for organizational behavior only encompasses date of entry, only the individual's date of entry was included in the analyses. Date of birth was not.

Each company had one number representing average distance of each CEO from each other group member, as well as one number representing the average of each group's members' distance from each other group member on the date of entry criterion.

Statistics

The descriptive statistics and regression analyses were performed utilizing SAS REG and AUTOREG subprocedures. For the regression results, the values of all significant parameter estimates are reported as standardized Beta weights. The signs of the Beta coefficients that were not significant were not useful in determining any directional trends and are not included. The significant results are presented and discussed in the next chapter.

CHAPTER 4

RESULTS AND DISCUSSION

Preliminary Analysis

A Pearson product-moment correlation coefficient matrix for the pooled dated was computed for all independent variables and between the independent and dependent variables in the study. Two additional environmental variables appear in these results. National GNP and The composite yearly index of the New York Stock Exchange were added on a post hoc basis after the initial low R^2s for the yearly regression analysis. This was done in order to evaluate whether some major environmental conditions had overshadowed the environmental, organizational and leadership variables in the model. Results appear in Tables 3 and 4 respectively.

Correlational analysis was performed first to detect substantial intercorrelation. Such intercorrelation or multicollinearity, affects the values of the beta coefficients computed in multiple regression analysis by creating sizable variance of the parameter estimates, as well as large standard errors (Lewis-Beck, 1980). This can lead to insignificant and unstable parameter estimates although the R^2 of the regression equation is significant. One commonly accepted criterion of significant multicollinearity is a correlation coefficient between two variables of .80 or higher (Cohen & Cohen, 1975). If this exists, measures should be taken to avoid biasing the parameter estimates.

The highest degree of association in the pooled data existed for the leader variables average group tenure and the ratio of career to total managers; average group tenure and standard deviation of average

group tenure; and, the average group members' distance from each other member and average group tenure (see Table 3).

Average group tenure also showed some association with the size variables, the dollar value of total assets and number of employees. The ratio of career to noncareer managers was also positive and significantly correlated with the number of employees which was anticipated. Large companies attract new job seekers and offer greater promotional opportunities than can smaller firms.

However, the correlation between the number of employees and firm age was significant but low. The correlation between the career manager ratio and company age was similar. Although the average age and number of employees of the sample firms was relatively high, there was also a great deal of variability (see Table 2). Approximately 43% of the sample had less than 1,000 employees; 28% had less than 500. The prevailing notion that older firms are larger in terms of employees is not necessarily descriptive of the data, for several reasons. The first is that the older manufacturing based firms rely more on machinery than do newer, service-oriented, labor intensive firms. The other explanation has to do with the computation of firm age. If a firm underwent a restructuring under a new name, the incorporation date of the current form was considered the company's date of birth, although it may have existed under a different name for a number of prior years.

It is possible that the same managers occupied their leadership positions in the "new" company although they were career managers. This was especially likely during the early 1980's, when several sample companies merged or were acquired, but retained over 50% of the voting

stock and remained in the sample.

Internal labor markets appear more related to the size of the firm rather than the age of the firm. Some firms, regardless of age, prefer to buy rather than grow their talent based on the industry demand for labor. Mobility is especially likely in the retail business, securities trades and new service industries which, combined, constituted approximately 40% of the present sample.

The leader bridge i.e., CEO average distance from all other members and the standard deviation of the group were also significantly correlated, as was the CEO's average distance with the group's average distance. These correlations are to be expected since the individual leader is a part of the group.

Overall, the highest intercorrelations were between the leader variables chosen for the present study. However, since none of the correlation coefficients approached the .80 criterion, all specified variables remained in the model.

It has been noted that economic-related data is often intercorrelated (Ostrom, 1978). While this was true in the present study, the correlations between the environmental and organization variables were of no greater magnitude than r=.48 for industry GNP and company age. This positive association suggests that in this particular sample, the primary S.I.C. codes of older firms were in industries with growth in the value of their goods and services.

Administrative technology (administrative/selling/general expense per employee) was positively correlated with the environmental variables National GNP and the New York Stock Exchange Composite Index. Companies

are more likely to make these types of expenditures during favorable economic periods. The correlation between administrative technology and capital technology was r=.29. Although significant, a higher correlation as well as contrasting signs was expected, since they were intended to measure machinery-based or industrial technology versus administrative-based or service-oriented technology. This relationship was further investigated through the factor analysis discussed in the next section.

Both size measures i.e., dollar value of assets and the number of employees were positively correlated at r=.41 which did not approximate the .80 criterion.

Based on the results in Table 3 and as described above, the subsequent analysis progressed on the assumption of little manifestation of multicollinearity.

Dependent Variables

The Pearson correlation coefficients for each independent variable with each dependent variable appear in Table 4. The independent variables of the model were more highly associated with stock price than profitability.

Average group tenure showed the highest correlation with both stock price and profitability (r=.43 and r=.14) followed by the career manager ratio (r=.33 and r=.10) respectively.

There were no similar parallels for the other independent variables. In fact, the direction of the relationship between the independent and each dependent variable was not always the same for both dependent variables. The negative relationship between profitability

and the environmental variables National GNP (-.16) and the New York Stock Exchange Composite Index (r=-.15) was more than likely sample specific, as an average of 15.41% of sample firms were not profitable during the years studied. The percentage of companies in the sample with a profit to asset ratio less than zero were as follows:

Year	Percentage
1976	10.64
1977	7.22
1978	12.12
1979	12.12
1980	11.00
1981	13.00
1982	19.15
1983	18.48
1984	24.72
1985	25.61

Some of the other negative but insignificant correlations between independent variables and profitability were found for total assets (dollar value), industry GNP, firm age, capital technology and for the individual leader variables of gatekeeper and prominent star. Taken together, these correlations suggest that large, older, capital-intensive firms were less profitable, as were sample firms in high growth industries. The problem of lower profitability for this particular sample is evident since the firms studied continued to remain unprofitable after the recession of 1980-1982. Some may be attributed to problems in the manufacturing sector, about 36% of this sample, which faces stiff international competition. About ten sample firms were small oil firms which lost their rapid growth due to worldwide depressed oil prices.

Interestingly, the correlations between the same independent variables and profitability used in the present study were very similar

to those reported for an industrial sample (Weiner & Mahoney, 1981). They are compared as follows:

	Correlation with Profitability		
Independent Variable	Present Study		Industrial Sample
National GNP	-.16		-.13
Industry GNP	-.03	Industry Sales	-.02
Assets	-.03		.00
Capital Technology	-.02		-.08

Weiner & Mahoney (1981) explained the negative relationship between National GNP and profitability as attributable to the effect an increasing GNP has on the value of assets. An escalating GNP causes the value of assets to rise at a faster rate than profitability. Since profitability is measured by the ratio of profit to assets, a rising GNP enlarges the value of the divisor. Hence, the negative sign for profitability for both National and industry GNP as well as the asset-based measures (capital technology=capital assets/number of employees) as they are similarly affected.

The similarity of these findings over two studies covering diverse time periods, of unequal sample sizes, and drawn from two distinct population bases supports the negative relationship between these independent variables and profitability over time.

The ideal circumstance for multiple regression, the selected mode of analysis, is when the independent variables are not correlated with each other but are correlated with the dependent variables. As in most research studies, this was not the case in the present situation. The relationships between some of the independent variables were greater than those between the independent and dependent variables. It was expected, based on the correlations in Table 4, that the model would show a better fit for stock price than for profitability.

The pooled correlation coefficient (r=.17) between the two dependent variables while significant, accounted for less than 3% of the variance in each other. If stock prices instantly reflect all available information, they are more of a short term performance measure than is profitability, which is usually measured quarterly and annually. The two dependent variables reflect marginally related, but temporally different, performance measures. Therefore, it was decided to independently analyze the effects of the various models for each dependent variable. The results and discussion are presented for profitability and then stock price, with a general summation and analysis at the end of the chapter.

Preceding this, however, is a principal components analysis of the independent variables. Since previous research proceeded on the undemonstrated assumption of the validity of the measures of these effects, principal components would help determine whether the specified variables selected did, in fact, correspond to environmental, organizational and leadership variables. This procedure would also detect the common variance of environmental, organizational and leader variables to produce a more parsimonious model of their respective influence on organizational performance.

Principal Components

A principal components analysis of linear combinations of the specified environmental, organizational and leadership variables. Ideally the results should have identified three factors that conform to these three dimensions. They did not. A three factor principal components analysis resulted in a combination of interloaded

environmental, organizational and leader variables while leaving some variables which did not load at .40. The choice of .40 as a loading criterion was a compromise. Nunnally (1978) states a "usual rule" of .30 or better; others consider .50 as a loading cutoff (Norusis, 1985). Therefore, the researcher decided on .40.

A varimax rotation, which minimizes the number of variables with high loadings on a factor, did not clarify the three dimensions. This was not unexpected. Principal components was appropriate since the residuals were correlated. This procedure also maximizes the percentage of variance explained by the variables in the data set (Nunnally, 1978).

A more cohesive analysis was obtained from a five factor principal components analysis suggested by the scree plot and components with eigenvalues greater than one. In this case, 59.45% of the total variance was accounted for by the five components. Table 5 contains the percentage of explained variance and variable loadings for each component.

Component 1 which contains the largest amount of variance over all the variables, clearly contains all the leader group variables, which were significantly correlated (see Table 3). Also loading on component 1 were firm age and number of employees, which is empirically consistent with the advantage older, large firms have in possessing extensive internal labor markets. In addition, the loading for standard deviation of tenure and individual CEO distance from the group all attest to the prevalence of internal labor markets from which the company can cultivate talent for movement into executive positions, as well as its ability to attract outsiders. Both may result in tenure variations

within the executive group.

Although component 1 captures the group level leader variables, it demonstrates their relationship with the organizational characteristics of age and size.

The bridge role of the CEO's distance from other members loaded both on component 1 (positive) and component 3 (negative). The signs of this variable suggested that the leader variables of the first component are more age-related than size related, since firm age had a higher loading than did number of employees on component 1.

Component 2 with 12.49% of the total variable variance, had only three factor loadings above .40, N.Y.S.E., National GNP and administrative technology. These variables, especially the first two, did not load on the same factor as the environmental variables of industry GNP and industry concentration as specified in the model. Administrative technology reflected greater administrative, selling and related expenditures during conditions of economic expansion. Accordingly, component 2 represents general environmental economic conditions.

Appearing on component 3 with positive loadings were the two individual level leader variables gatekeeper and star, and both size measures. The component loadings for number of employees and assets was greater for component 3 than component 1. Thus, the variance in Factor 3 was more indicative of firm size and supported the association of gatekeeper and star roles with company size. The CEO bridge and standard deviation of tenure loadings were negative. Since the size loadings were higher for this component, the negative bridge loading and

standard deviation of tenure demonstrate the greater resources available to larger firms that promote cohort formation and retention.

It was revealed in the succession research that successors tend to move their constellation of supporters along with them. Thus, similar tenure patterns among executives in large nonowner, nonmanagerially controlled firms can be expected. If the firm is profitable, the team remains intact. If an existing managerial team is removed from office, a newcomer enters from inside or outside the organization, bringing along his allies. They are likely to be inter or extra organizational cohorts. Thus, the distance between the highest ranked leader and the leader group's organizational entry date is minimal. This rationale also explains the negative loading for the standard deviation of tenure. Larger firms, with a greater probability of career managers, have less variability of organizational tenure on the group and individual level. In sum, component 3 reflects the organizational size characteristic and individual level leader variables which accounted for 11.87% of the total factor variance.

The first three dimensions accounted for 44.91% of the total (59%) variance of the five factors.

The fourth component represents the variables intended to measure specific task environment variables i.e., industry GNP and industry concentration. While these two loaded on the same factor, the other general environmental measures appeared in component 2. Rather than measure the external environment of a company, the variables on component 4 seem to be organizational specific and more accurate representations of specific task environments in comparison with the

variables on component 2.

Although the capital technology measure also loaded on this variable, the administrative technology measure did not. The negative sign for industry concentration implies that firms with a high ratio of capital assets per employee are in competitive, high growth industries. Thus, it is inaccurate to consider capital technology solely within the realm of industrial-based companies. Service-based firms may have capital assets in terms of computers and other information- based equipment. It seems likely that firms in growth industries, especially those with skills shortages would increase expenditures for capital assets to assist in their continued development. This finding is also a result of the measurement of capital technology. Some firms do not differentiate land from machinery in their assessment of their capital assets. At least one sample firm, in the real estate business, had extensive land and building holdings that were included in their capital assets figures, although they employed ten people.

According to the principal components analysis, the capital technology measure is associated with industry-specific conditions or measurement, while the administrative technology measure is related to general environmental conditions. As such, both measures were retained for entry into the multiple regression analysis.

The last component had two significant loadings associated with company characteristics, insularity (ratio of career managers) and inside ownership. Given the prevailing compensation systems which include stock options, those executives with longer tenure are likely to amass notable stockholdings. This last component seems to assess

managerial control since the inside ownership loading was highest for component 5. However, outside ownership did not approximate the .40 criterion on any factor, and insularity (ratio of career managers) showed a higher factor loading on component 1. The last component explained only 6.61% of the total variance of the five components.

In conclusion, the task environmental variables (industry GNP and concentration) appeared on component 4; the organizational variables of size (number of employees and dollar value of assets) loaded on component 3, and managerial control (inside ownership and insularity) on component 5. The general environmental variables loaded on component 2 alone. The leader group variables loaded on component 1, suggesting a relationship with company age; the individual level leader variables were closely associated with the size measures on component 3. Overall, the components support the usefulness of the model while underscoring the combined effects of organizational characteristics such as age and size on the configuration of its leader group.

The complexity of the components and interloading of the variables illustrate the systems interdependence of an organization. Therefore, the results of the principal components analysis did not suggest any reduction in the original model.

Predictive Power of the Hypothesized Model-Profitability

General Comments

From a practical standpoint, the results of a multiple regression analysis of the variables in the proposed model indicated it was a poor predictor of profitability, with a total adjusted R^2 of .06 for the pooled sample data. Although statistically significant, it explained

little of the variance in the dependent variable of profitability (see Table 6).

Examination of the scatterplot of the residuals for the pooled data revealed most of the residuals to be positive, comprising a linear, upward pattern. The autocorrelation of .41 indicated that rather than a random distribution of residuals, a pattern of sequential positive error terms existed over the ten year time period studied. These positive error terms create a value of the dependent variable greater than the mean. (Conversely, a negative autocorrelation would produce a value below that of the mean value of the dependent variable over time).

The significance of the autocorrelation figure of .41 was tested via the Durbin Watson statistic d and was found to be significant ($d=1.19$, $n=857$, $p<.01$). Rather than offer an exact test point for a given alpha level, the d statistic offers a range of upper and lower bounds based on the number of independent variables and number of observations. If the d statistic falls below the lower bound, autocorrelation of the error term exists. Low levels of d signify that the differences in the error terms are small, or that the neighboring error terms are of similar size over time i.e., that e_t and e_{t-1} are positively correlated. If the calculated d is above the upper level, the null hypothesis of no autocorrelation among the error terms is accepted. A d that falls within this range i.e., below the upper bound and above the lower bound, is considered inconclusive (Bowerman & O'Connell, 1987).

If autocorrelation of the data set is not considered, there may be a substantial difference between the true error term and the estimated

one. When positive autocorrelation is present, the error variance is underestimated and estimated model coefficients will be unreliable. The resultant regression line infers a close fit with the data when it, in actuality, is not (Ostrom, 1978).

In order to resolve the problem of autocorrelation, the effects of the regressors on profitability on a cross sectional, yearly basis were assessed. The d statistic for each year (see Table 6) indicated no serial correlation for eight of the ten years. The d statistics for 1978 (1.82) and 1984 (1.79) were in inconclusive bounds. They were sufficiently close to the upper level of 1.85 and, in addition, demonstrated such low R^2s, as to preclude little bias of the parameter estimates attributable to autocorrelated errors.

Another advantage of a cross sectional analysis is that the yearly segmentation provides comparability with other studies such as Weiner & Mahoney (1981), as well as considers general environmental events during a specific time period. However, the environmental variables National GNP and the N.Y.S.E. were not entered into the yearly regression equations since parameter estimates could not be computed from their single observation per year. Their influence was not viewed as crucial since the correlations between these two variables although significant and negative, were low (see Table 3), and other measures of the task environment were included in the regression analysis.

Cross Sectional Results - Profitability

The yearly regression analysis yielded adjusted R_2s ranging from a low of -.14 in 1976 to a high of .16 in 1982, again indicative of a poor fit of the model. Table 6 displays the significant standardized beta

coefficients assessed by their respective t statistic, for the pooled and yearly data for each independent variable by year. The total explained profitability variance by the independent variables of the present model was much lower than the 54.5% found by Weiner & Mahoney (1981) and the 51.2% to 91% range reported by Lieberson & O'Connor (1972), although the latter study consisted of independent variables different from those of the present study.

Similar to the overall poor predictability of the present model were the diminutive effects of environmental and organizational variables. The initial pooled data and cross sectional analysis presented in Table 6 demonstrate little impact of organizational and task environmental characteristics. With the exception of industry gnp in 1982, there was no influence of environmental variables on profitability. Of the organizational variables, only firm age was significant and negative for the pooled data and for 1982. Outside ownership was significant for the pooled data and for 1982 only. Inside ownership was significant for the total sample and for 1977 and 1983.

Lieberson & O'Connor (1972) attributed a range of 19% to 29% of explained variance to organizational characteristics. Although none of their organizational measures were equivalent to those of the present study, some were similar (ex. industry concentration ratio; advertising expenditures/total output; assets per employee). The greater correspondence between the environmental and organizational variables employed in the present study and those included in the Weiner & Mahoney (1981) research also underscored the lack of support for these effects in the present research. The significant Beta coefficients for

technology and industry concentration in the Weiner & Mahoney (1981) study were not significant in any of the ten yearly analyses, despite the similarity of correlations with profitability for the pooled sample data. This can be attributed to differences in sample size, as well as variation in the number and measures of other independent variables included in the regression equation.

However, the results in Table 6 sustain the effect of leadership on corporate performance. Leadership accounted for a range of 7% to 15% of explained variance in profitability in the Lieberson and O'Connor (1972) sample and 43.9% in the Weiner and Mahoney (1981) sample. Although the leader variables of the present study do not explain nearly as much of the profitability variance, they did demonstrate a consistent influence. Leader group stability (average tenure) was significant for the pooled data and for the individual yearly analyses from 1978 to 1983. The standard deviation of the group's tenure was significant and negative for 1977 only; insularity (ratio of career managers) was negative and significant for 1983 and 1985. The gatekeeper role showed one negative significant parameter estimate in the pooled data, but was insignificant in the yearly analysis. The coefficient for the star citation measure was positive as hypothesized, but significant in 1984 only.

Of all the independent variables, the parameter estimates for average group tenure revealed it as the most consistent, significant predictor of profitability. Contrary to the findings in other corporate samples, the leader influence was greater than that of any one or group of task environment or organizational factors. Leader group stability (average tenure) was characterized by larger beta coefficients, a

greater frequency of beta significance, and at higher alpha levels than any other environmental or organizational variables.

Lieberson & O'Connor (1971) contend that the leader effect varies with dependent variables. This is a partial explanation for the disparity of their findings with the present research, since the dependent variables were not the same. Their finding that leadership had a lesser effect than industry and company effects was not substantiated in the present study. Weiner & Mahoney (1981) admitted that their 43.9% of explained profitability variance due to leadership, as measured, included the persistent influence of some variable(s) excluded from the regression equation and, therefore, were reflected in the residuals which were included in their stewardship measure.

Another reason for the reported divergence is the variety of time frames and the number of firms investigated. The present study covered 101 companies over ten years, only half the amount of time in comparison with the 167 companies studied for twenty years by Lieberson & O'Connor (1972) and 193 companies studied for 19 years by Weiner & Mahoney, (1981). This may have been an insufficient length of time for some of the independent variables to fully influence profitability. Also, the influence of the regressors of the present study may have been suppressed by other, perhaps environmental variables salient during the 1976-1985 time period and not included in the model. The other time periods of 1956-1974 (Weiner & Mahoney, 1981) and 1946-1965 (Lieberson & O'Connor, 1971) were relatively more benign for American industry than the more recent years included in the present study. Accordingly, the predictors of profitability during the earlier years may not be as

appropriate for the time period studied. It is also possible the variances in earlier studies were influence by serial correlation which would result, inaccurately, in a good model fit.

Thus, the findings of the present study do not support the effect of the environmental and organizational variables reported in earlier studies. This may be attributed to differences in the time periods explored, which was considerably shorter in the present study; to variety in the measurement of environmental, organizational and leader effects; to distinctive methods of data analysis; and, to differences arising from the samples themselves. Lieberson & O'Connor used companies in several industries. Their results were replicated in a study of mayors (Salancik & Pfeffer, 1977). However, their correspondence was found to be methodological, a function of the order in which they were removed from a regression equation (Weiner (1978). Weiner & Mahoney (1981) used industrials listed on Compustat tapes. The sample firms of the present study were drawn from a diversified population and despite sample attrition, represent assorted industries with accompanying diversity in their task environment, organizational and leadership characteristics.

Supportive of earlier studies was the influence of leadership, measured quite distinctively from stewardship or financial ratio measures of prior research. Obviously due to the lower amount of explained variance in the present model, the reported leader effect was nowhere as impressive as reported in the other two corporate samples. Due to the distinctive differences in explained variance, the hypothesized model was further examined in order to improve its

predictability.

Exploration of Alternative Models - Profitability

One procedure to improve the fit of the model was derived from the literature reviewed. It involved lagging the effects of the independent variables on the dependent variables of subsequent years. One set of researchers used one, two and three year lags (Lieberson & O'Connor, 1971); another, two and five year lags (Weiner & Mahoney, 1981). The effect of church ministers was lagged for one, two, three and four year lags (Smith, Carson & Alexander, 1984).

In the corporate samples, lagging the leader effect did not improve the explained variance in profitability nor, in the sample of church ministers, did a lagged minister effect have any influence on a variety of measures of church performance. Due to sample, temporal and predictor diverseness, lags were investigated in the present research for several reasons. First, lagging did produce an increase in the explained variance for stock prices in prior research (Weiner & Mahoney, 1981). If lags show distinct effects for separate dependent variables, then such an approach does improve the explanatory power of leadership in the long term. It is possible that lags might increase the predictive power of the present model due to sample and time frame variations, due to the particular leadership measures used. Second, earlier findings of no lagged leader effect did not consider independent variables other than leadership, which would function as intervening variables. Their inclusion could illuminate the relative influence of environmental, organizational and leader variables in the long and short run. Further, investigating lagged effects would contribute to the

findings of prior researchers. No effect of leadership lags on profitability would support earlier results. Some effect would prompt examination of the conditions and time span under which the leader influence operates.

As part of the exploration of an appropriate model, several distributed lagged models of exogenous variables were examined. In addition to lagging the leader effects, they also included the lagged effects of the environmental and organizational variables.

The logic that guided the choice of which year's independent variables should be used to examine profitability at a later point in time was as follows:

1) To examine whether the decisions emerging from a corporation's unique juxtaposition of environmental, organizational and leader variables occurring during a favorable economic year influence profitability during ensuing periods of prosperity and decline.

2) To examine whether the decisions emerging from a corporation's environmental, organizational and leader characteristics occurring during an unfavorable economic year influence profitability during ensuing periods of prosperity and decline.

3) To explore short term effects.

4) To explore long term effects.

The time periods chosen were based upon composite economic changes over twelve leading indicators and a composite index of profitability covering the years 1976-1985 appearing in the Business and Commerce Digest, U. S. Government Bureau of Economic Analysis (March 1988). Both composites indicate a relatively calm year of 1976 i.e., few drastic

percentage changes, following the preceding recessionary period which lasted from fourth quarter 1973, through the first quarter 1975.

Profitability exhibited more variation during 1977, dropping off during the last quarter of 1977 and first quarter 1978. After 1977, both indicators presented a downward trend with ratchet type gains and falls on a monthly basis from 1978 to 1983. Profitability for 1978 did not reach 1977 levels, and dropped steadily during 1979 through the first two quarters of 1980. Although a small upward trend was indicated for the last half of 1980 until the last half of 1982, this period was also identified as recessionary. After 1983, both indicators revealed rising profit levels until the last quarter of 1985.

As such, the effects of the stable years of 1976 and 1977 and the recessionary years of 1980 and 1982 were lagged for various time periods ranging from one to six years. The models investigated were adapted from a distributed lag model of the form:

$$Y_t = a + b_0X_t + b_1X_{t-1} = \ldots + b_nX_{t-n} + e_t$$

(Ostrom, 1978).

Examples of the models investigated are as follows:

One year lag $Y_t = a + b_0X_{t-1} + et$

Two year lag $Y_t = a + b_0X_{t-2} + e_t$

Three year lag $Y_t = a + b_0X_{t-3} + e_t$

Five year lag $Y_t = a + b_0X_{t-5} + e_t$

In the present circumstances, only one set of independent variables at a time were used as predictors due to problems inherent in the data set. There are sixteen independent variables. Taking the independent variables for the years 1976 and 1977 to predict Y for 1977 would

involve 32 independent variables, excluding the intercept. There are only 83 observations for 1977. This would allow for less than three observations per independent variable, threatening the conditions for multiple regression analysis and resulting in the loss of a serious number of degrees of freedom. This precludes the lagging of independent variables beyond one period at most. Following this example, if the independent variable values for 1976 were used as regressors to predict 1977 profitability, the intervening independent variables of 1977 could not be investigated. One advantage of the use of such a nondistributed lag model is that it avoids the problems of multicollinearity of the independent variables at t and t-1 which would bias the parameter estimates.

Profitability - Lagged Independent Variable Effects

The independent variables of 1976, a profitable year, were entered into a regression equation to determine their short term effects on profitability for 1977 a relatively profitable period, and their long term effects on profitability for the recessionary periods of 1980, 1981 and 1982. The lagged model of 1976 independent variables yielded R^2s ranging from -.12 to -.06 (See Table 7). The 1976 independent variable lag on profitability of 1977 did not demonstrate significant betas, with the exception of inside ownership, which was also positive and significant in the cross sectional analysis for 1977. Also comparable to the cross sectional analysis was the positive significant effect of 1976 group stability on profitability in 1978, 1981 and 1982. No 1976 variables were predictive of profitability in 1980. Significant beta coefficients for 1976 effects on 1981 profitability were industry GNP

and inequality (average group distance), both negative, and stability, which was positive.

For 1982 profitability, 1976 industry GNP and group stability had significant beta coefficients; standard deviation of tenure and outside ownership showed significant negative beta coefficients (see Table 7). Thus, the 1976 long term lagged effects on 1981 and 1982 suggest that the decisions emanating from a long-tenured group of cohorts, i.e., small distances or variations between individual members, free of interference from a dominant outside owner, enhanced long run profitability.

Interestingly, the sixth and most long term period, 1981, was the one most influenced by the 1976 independent variables based on the significance of the beta coefficients (see Table 7). The lagged effects of 1976 environmental, organizational and leader variables demonstrated greater predictability in the long run i.e., for 1981 and 1982.

Apparently, decisions arising from the arrangement of environmental, organizational and leader variables at that point in time had a positive impact on profitability during subsequent difficult economic periods. Stability, a group leader variable and industry GNP both had significant beta coefficients in the long run. Nevertheless, the amount of explained variance was virtually nil, and little can be concluded as far as the short and long range impact of independent variable conditions in the favorable climate of 1976.

The short term effects of the independent variables of profitable 1977 were investigated for 1978 and 1979 and the long term effects for the same recessionary years 1980, 1981 and 1982 (see Table 8). The

effects of the 1977 independent variables were even less remarkable than the findings for the lagged 1976 independent variables. The 1977 model resulted in R^2s ranging from -.12 to -.03. There were no significant 1977 independent variable effects for either the short term 1978, 1980 or 1982 long term profitability. There was one significant, negative beta coefficient for 1977 outside ownership and 1979 profitability.

Similar to the 1976 effects, the 1977 lags showed significant negative relationships between industry GNP and average distance in group entry dates for 1981. The betas for 1977 independent variable effects on 1981 profitability were low. Although there was an increase in explained variance for 1981 over the cross sectional analysis, adjusted R2 was below zero and as such, the investigation of 1977 independent variable lags was unimpressive. Based on the insignificant amount of explained variance in profitability employing these lags, (See Tables 7 & 8) no analysis was performed for the lagged effects of 1978, also a profitable year.

An assessment of the effects of independent variables in economically unfavorable years on profitability during subsequent unfavorable time periods was made. The independent variables for 1980, whose first half profitability was the lowest since the 1974 recession, were regressed against profitability for 1981, a year of partial decline. The 1980 effects were also examined for 1982, when profitability plunged even further. The effect of the independent variables of 1980 was also examined for 1983, which showed the greatest quarterly growth for the entire ten year period studied, and for 1985, another growth year (see Table 9).

For 1980 effects, firm age was negative and significant for 1982 and 1983; industry gnp had a negative effect on 1981 profitability and a positive one in 1982. Outside ownership was positive and significant for 1982 and 1983, recessionary and recovery years. The leader variables stability and insularity of 1980 showed the strongest, consistent lagged effects on subsequent profitability. Of note were the negative long term effects of 1980 insularity on 1983 and 1985 profitability.

Overall, the environmental, organizational and leader lagged effects of 1980, a recessionary year, offered the greatest increase in adjusted R^2s for 1981 and 1985 over the cross sectional analysis. However, like the 1976 and 1977 lagged analyses, the 1980 lags did not product a significant amount of explained variance.

The long term effects of 1982 predictors were limited by the range of the time period studied, which ended with 1985. The short term effects of 1982 independent variables produced some significant beta coefficients for 1983 and 1984 but none for 1985 (see Table 10).

The lagged effects of 1982 firm age showed a negative significant beta for 1983, similar to the 1980 effects. The effects of 1982 industry GNP were positive and significant for 1984. Industries that were able to grow during the recession maintained their performance.

The leader effects of 1982 were significant for stability for 1983 and 1984. Insularity was significant in the short term (1983), showing negative signs for all lagged effects, in agreement with 1980 insularity lagged effects. The short term effects of 1982 stability and insularity which were significant for 1983 profitability, suggest that while companies benefit from the tenure of upper managers, some heterogeneity

in their source (i.e., noncareer managers) is useful in the short run, especially when the economic climate changes. The lagged influence of the 1982 model on each of the years studied resulted in a reduction in explained variance. The lag of this year did little to further the investigation of the respective influence of environmental, organizational and leader variables on profitability in the short run.

Summary of Lagged Independent Variable Effects

Despite the occasional significant parameter estimates in some of the lagged cases investigated, the resulting coefficients of determination (R^2) were insignificant in both the short and long term, regardless of whether the independent variables occurred during favorable economic periods (1976 and 1977) or unfavorable years (1980, 1982). The short and long term independent variable effects varied with the year. The environmental, organizational and leader effects of 1976 increased explained variance in the short term, 1977, and long term, 1981, but not significantly. The short term effects of 1977 predictors increased explained variance at t+3, i.e., 1981 only. The independent variables of 1980 offered the greatest increase in explained variance, for the short term 1981 with an adjusted R^2 increase of 10%, and in the long term, 1985 with an increase of 2%. The effects of 1982 independent variable lags decreased the amount of explained variance in comparison with the cross sectional analysis for each year studied.

The effects of the lagged model generally had a depressive effect on explained variance in comparison with the cross sectional analysis. In total, of the improvements in explained variance, the amount actually defined by the sixteen independent variables was negligible. The

greatest improvement was offered by the lagged effects of 1980 on 1981 profitability, which provided an adjusted R^2 of .01. However, this was an improvement from the cross sectional adjusted R^2 of -.09 which was not of much practical usefulness.

Furthermore, the direction of the beta coefficients of lagged effects varied with the years in question. For example, industry GNP for 1976, 1977 and 1980 showed a negative effect for 1981 and positive impact on 1982 profitability (see Tables 7-9); for 1982 lagged effects of industry GNP, the beta coefficient was positive for 1984 . The directional changes of industry GNP effects may reflect fluctuations in how industry growth influences the valuation of assets or unmeasured random environmental shocks, rather than the "true influence of industry GNP on profitability.

Of the leadership variables, stability betas were significant and positive in both the long term and short term covering unfavorable and favorable economic years. In 1980 and 1982, insularity produced a negative effect on profitability of subsequent periods (see Tables 9 & 10). The fit of the proposed model was not enhanced by the exploration of the long term and short term influence of the independent variables.

These results were similar to those reported by Weiner & Mahoney (1981), who reported no change in explained variance for profitability with stewardship lagged two years, and a decrease of 9.3% in explained variance when lagged five years. Although not specifically isolated, the present analysis also included cases of succession, since leader change would affect the tenure of the remaining group members. What the present results suggest is that tenure, or nonsuccession, has a long and

short term positive effect on profitability. However, a group that has a career lifetime in one organization does not. If it is assumed that longer tenured groups are more effective, and if they weren't, would be ousted, the findings for the stability variable support the contention that effective leaders do have a positive effect on performance.

Alternative Model Exploration - Lagged Dependent Variables

The poor fit of the models may be partially attributed to the violation of the independence assumption. Under normal conditions, the effects of variables not included in the model would be random and normally distributed. This did not hold true in the present sample, as the autocorrelation coefficient $r=.41$ ($d=1.19$, $p<.01$) indicated an association among the error terms across time. The nonsignificant pattern of the cross sectional and lagged analyses did little to eliminate the problem of autocorrelation of the error term and increase the accuracy of the regression equation.

In order to determine the correct model to fit to the data, the residuals were examined and were determined to be randomly distributed for the pooled data. However, a pattern resembling a straight vertical line was evident for the plot of the residuals by year.

Three models have been proposed to handle time series data conforming to a pattern, according to the Box Jenkins methodology. The first is an autoregressive model in which the dependent variables act as regressors in predicting the dependent variable at a later time period. It can be expressed as:

$$Y_t = o_1 Y_{t-1} + o_2 Y_{t-2} + o_3 Y_{t-3} + \ldots + o_p Y_{t-p} + e_t.$$

The second model in the Box Jenkins framework involves a moving

average, which relies on predicting Y_t from previous values of the error term. The third is a mixed autoregressive moving average model. It encompasses both the autoregressive and moving average models in that Y_t can be predicted from both the past values of the dependent variable and error term. However, these two models are inapplicable given the short duration of the time series of the present data. An adaptation of the first model described above was judged best suited to the data.

Its selection was guided by the theoretical perspectives of the organization as an actor (Hall, 1977) and systems theory (Berrien, 1976). Hall (1977) asserts that organizational decisions are influenced by such factors as environmental relations, traditions and power flows, which combine to constrain the influence of any one individual or group. This is held to be true even at upper levels of the organization. Systems theory assumes that these three factors should be considered as subsystems of the organization, which aspires to maintain them in a steady state equilibrium. It appears that maintenance of this equilibrium occurs in gradual increments, as feedback from prior decisions initiates shifts in decision premises.

Applied to a corporation, quarterly and other short term profitability indicators would be used as feedback to make short term corrections of prior decisions which disturbed the system. In this manner, one period's outcome becomes an input into decision making for the next proximal period. Long range decisions should reflect these cumulative learning experiences. As such, leaders may serve as a system's maintenance team while gradually aligning its course with the environment. The lagged independent variable results of 1980 imply

leadership may be more critical during stressful periods, when system change rather than system maintenance is required.

The yearly scatterplots, the characteristics of the data, and these theoretical positions infer that the first Box Jenkins autoregressive model is appropriate for the present data. Since the positive autocorrelation of the pooled data was significant, the estimated variance of the intercept and beta weights would be underestimated, leading to an overinflated t ratio used to judge the significance of parameter estimates. The serial correlation of the pooled data set (in Table 6) may be attributed to systematic disturbance of the error term as well as the omission of previous values of the dependent variable.

It was expected that lagging the previous value of the dependent variable might improve the fit of the model as well as alleviate the serial correlation. Thus, the following lagged endogenous variable model was used:

$$Y_t = a + b_1 Y_{t-1} + b_2 X_t + e_t.$$

It should be noted that most models employing lagged dependent variables usually incorporate more than the X value of the present time period that is, $X_{t-1} \ldots X_{t-n}$. This was not feasible in the present circumstance due to the potential loss of necessary degrees of freedom. As explained earlier, if an X_{t-1} was added to the above model, parameter estimates would be made from 33 independent variables, including the Y_{t-1} variable and excluding the intercept. There are at most 91 observations of Y values due to imperfect company and year correspondence. This yields less than three observations per regressor, which would jeopardize any multivariate analysis. Accordingly, the results of the previous and

subsequent regression analyses are discussed in terms of adjusted R^2, which takes into account the size of the sample and number of regressors.

The theoretical approaches and proposed lagged endogenous variable can be accommodated in the autoregressive model by adding the previous period(s) dependent variable value as an independent variable in examining Y_t.

A separate set of performance variable lags was created for each company in the present sample, since each company was not included in each year studied. It should be noted that the use of such lags eliminates the number of time periods investigated by one year. This excluded the study of 1976 since no data from 1975 was collected. For example, for a firm's 1977 profitability, all the independent variables for 1977 and profitability for 1976 i.e., Y_{t-1}, were included as regressors. For Y 1978, regressors included all independent variables of 1978 along with the profitability figures for 1977. This pattern was continued for all subsequent years in the study.

In order to check for any significant autocorrelation remaining in this model, Durbin's h statistic was computed. This test is more appropriate for models employing lagged values of a dependent variable in comparison with the traditional Durbin-Watson statistic. It is calculated from ordinary least squares estimates as follows:

1) Generate OLS parameter estimates.

2) Estimate p as: (p)=1-d/2 where d=Durbin-Watson statistic.

3) Find the sampling variance of b*, the coefficient of Y_{t-1} for t-1 only.

4) Enter into the equation:

$$h = p \sqrt{\frac{T}{1-Tvar(b^*)}}$$

5) The resulting h is tested as a standard normal variable where H_0 = Autocorrelation=0 is rejected at 1.64 ($p<.05$) (Ostrom, 1978 p 51).

It should be noted that if $Tvar(b^*)>1$, the h statistic is not useful. This happened in 1979 and 1985. The significant R^2s for these years verified the appropriateness of a linear model. The SAS AUTOREG procedure using maximum likelihood methods was used to estimate the parameters and to test for first order autocorrelation. The t tests for these three years indicate that their autocorrelation parameter estimate was not significant, upholding the validity of the parameter and standard error estimates. The results in Table 11 contain the Durbin's h statistic or t test of the autocorrelation parameter estimate where appropriate.

Incorporation of all prior lags i.e., $Y_{t-1}...Y_{t-n}$, did not improve the fit of the model, nor were any of the lags earlier than Y_{t-1} significant. Thus, the model can be categorized as deterministic i.e., a time series with little change in the significance in the parameter estimates over time, for the lagged endogenous effect (Y_{t-1}). The cross sectional, lagged endogenous model offered the greatest improvement in explained variance, significant for all years except 1979. Since the lagged endogenous model produced the greatest amount of explained variance in profitability, it offered an appropriate model to test the hypotheses.

All tables of results contain the significant values of the

standardized beta coefficients, calculated by the standard deviation of the original predictor regression coefficients divided by the standard deviation of Y. These standardized coefficients, or beta weights, allow for the comparison of predictors measured in different units, which characterized the present data. These beta coefficients are influenced by the intercorrelations between predictors and thus, are not useful in judging the comparative influence of each regressor (Norusis, 1985).

Therefore, the partial correlation coefficients of the lagged endogenous model are also reported, in order to determine the relative contribution of each predictor to the explained variance of the dependent variable when the linear effects of the other independent variables are partialled out. These partial correlations, calculated from changes in explained variance, offer the most useful method to assess the relative effects of each predictor (Norusis, 1985). They were included due to the levels of intercorrelation between the leader variables in Table 3. Although they did not approximate the r=.80 criterion for multicollinearity, the leader variables were most highly interrelated of all the predictors.

The next section discusses the findings of all the models - cross sectional, lagged independent variables and lagged endogenous analysis as tests of the hypothesized effects of group, individual-group and individual level leader variables on profitability.

Profitability - Results of All Models

Group Level Leader Variables as Regressors

Inequality

The hypothesized negative relationship between inequality, or

dispersion, of group members' entry dates and profitability was not supported. There was a lack of significance of the beta coefficients in the cross sectional results (Table 6), 1980 and 1982 lagged exogenous findings (Tables 9 & 10) and lagged endogenous model (Table 11). The significant beta weights for 1981 from the lagged inequality of 1976 and 1977, can be attributed to the effects of the intervening independent variables or random shock between 1976/1977 and 1981, that could not be included in the regression equation (see Tables 7 & 8). This explanation is further supported by the fact that the lagged endogenous model produced no significant beta weight for inequality (see Table 11). Had an event of major impact in addition to the recession occurred in 1981, it would have been disclosed in the yearly analyses.

The lack of significance for the effects of inequality on profitability was anticipated, since the correlation between the two was only .03 (n.s) (see Table 4).

The threat of multicollinearity is a troublesome situation, with the potential to exist at correlation levels below the .80 criterion. The procedure of omitting potentially confounding variables is one method of dealing with this situation (Lewis-Beck, 1980). The inequality variable was most highly correlated with both measures of stability (see Table 3). Another regression was run omitting these two stability measures and retaining the inequality measure with the same environmental, organizational and other leader predictors. This was performed to examine how the inequality beta coefficients would change with the deletion of these two group level leader variables. This additional analysis was performed on the lagged endogenous model only,

since it offered the most explained variance.

These revised regression results again indicated this variable had no effect on profitability (see Table 12). None of the parameter estimates was significant, despite the omission of other potentially confounding independent variables.

Overall, the combined results of the cross sectional, lagged and lagged endogenous models lead to the conclusion that this variable had no meaningful effect on profitability. Although the lagged effects of 1976 and 1977 supported the benefits of a cohort group in the long run, the lagged endogenous model maintained no such pattern.

Examination of the partial coefficients between inequality and profitability were zero or minimal, varying with the year examined (see Table 14). Given the lack of significance of the beta coefficients for inequality, it was concluded that although there was some minimal support in the lagged predictor effects, the hypothesized negative relationship between inequality of group members' entry dates and profitability was not supported (see Table 13).

Insularity

Insularity, as measured by the ratio of career to total managers, was a poor predictor of profitability. In the cross sectional analysis, the hypothesized negative relationship was supportive for 1983 and 1985 only, which were years of economic recovery.

The lagged model tests of the effects of insularity on profitability generally upheld the long range benefits of noncareer managers. Clearly, the 1980 insularity effect was also negative and significant in the long term, 1983 and 1985 (see Table 9). The beta

coefficients for both these years were the highest of all lagged effects over all years investigated. Further, the significant beta weight of 1980 effects on 1985 (B=-.5060) was greater than the beta weights of 1980 effects on 1983 profitability (B=-.3709). In other words, increasing the ratio of career to total managers (by one standard deviation) had a greater negative impact on profitability in the long run i.e., 1985 than in 1983, when the influence of other 1980 predictors was controlled for. The detrimental effects of insularity were also evident in the 1982 short term impact of 1983 profitability.

However, appealing the lagged insularity influence might appear, the adjusted R^2s were nonsignificant for 1983 and 1985. Although some of the beta weights were significant, they were of small magnitude, increasing the level of profitability by less than one-half of one standard deviation unit. The explained variance of the entire 1980 lagged model was 3% for 1983 profitability; it was below zero for 1985 profitability (adjusted R^2=-.02, see Table 9). Therefore, the presence of significant beta coefficients significantly different from zero provides little additional explanatory power. Their relative contribution to the total explained variance, if they were to be added or removed from a regression equation would be minimal, since the overall model accounts for virtually no variance in profitability.

The lagged endogenous model reinforced the negative effect of insularity in 1983 (see Table 11). The significant, negative Beta coefficient for 1983 insularity in the cross sectional analysis was also significant in the lagged endogenous model at the same significance level. However, the beta weight i.e., change in Y, was lowered with the

addition of the Yt-1 lag. The fact that this result was sustained despite the addition of the significant Y_{t-1} lag generally supports the negative effects of group insularity on organizational performance. However, there was one positive significant beta coefficient in the lagged endogenous model for 1984 which refutes the other findings.

The correlation between insularity and profitability r=.10 was significant, but low (see Table 4). Moreover, the partial correlation coefficients revealed a minute association between insularity and profitability, even when most significant at Pr=.06, (p<.05), in 1984 (see Table 14).

The potential bias of the parameter estimates via multicollinearity was also considered when assessing the influence of insularity on profitability. Since insularity was most highly correlated with average group tenure (r=.65, p<.001) and the standard deviation of group tenure (r=.37, p<.001), a regression was run omitting these two variables and preserving insularity, the same individual leader, environmental and organizational variables, and the Y_{t-1} lag. The only notable parameter estimate was for 1984 (B=.2333). It was slightly lower than the significant positive beta weight for 1984 in the lagged endogenous model. Since this was the only significant finding, no table is presented.

It would appear the effects of insularity vary with the year studied and, as a whole, the hypothesized negative effect between insularity and profitability received minimal support. Insularity, or a higher ratio f career managers, provides systems maintainers which created a disadvantageous impact on profitability. Of course, the

reverse is also plausible. A beleaguered group facing profitability declines is less likely to seek the disruptions caused by outsiders.

Stability

Stability, one of the independent variables most highly correlated with profitability (see Table 4), provided the most persistent leader effect regardless of the models explored. However, results were in the opposite direction hypothesized.

In the cross sectional analysis, the beta coefficients were positive and significant for 1978-1983, covering both recessionary and profitable yearly periods (see Table 6).

The long term and short term beneficial effects of stability were also demonstrated by the lagged independent variable models. Leader group stability in 1976 was positively, significantly predictive of profitability in 1978, 1981 and 1982 (see Table 7); lagged 1977 stability was significantly associated with 1978 and 1982 profitability (see Table 8); the lagged effects of 1980 stability were positive and significant for all years investigated (see Table 9); 1982 stability was a significant predictor of 1983 and 1984, but not 1985 profitability.

The size and direction of the stability effect on profitability were sustained in the lagged endogenous model (see Table 11). However, the beta coefficients were positive and significant for four of the nine years studied (1978, 1979, 1981 and 1982) in comparison with six of the ten years studied in the cross sectional analysis. The beta weights were of similar magnitude in both the cross sectional and lagged endogenous models.

Although the Y_{t-1} lag was of major significance, its inclusion into

the multiple regression equation did not change the fundamental direction and magnitude of stability. A change of one standard deviation unit of stability induced a similar change in profitability across the cross sectional, lagged, and lagged endogenous models. This illustrated the enduring, positive nature of this variable's effects.

One reason for a finding of a significant R^2 with few or no significant beta coefficients is that of multicollinearity. This surfaced as an obvious problem for stability, as both average tenure and its standard deviation were included in all the models. Since the correlation for average tenure and standard deviation of tenure was $r=.51$ ($p<.001$), a regression was run with all the predictors of the lagged endogenous model, with the exception of average tenure. This was performed in order to determine whether the significant effects of average tenure were obscuring those for the standard deviation measure, as well as to decide which better represents stability of the leader group. Inspection of Tables 6 - 11 reveals the standard deviation of tenure, or variability of date of entry, to be negatively associated with profitability. It was less often significant than average tenure. Another regression was run retaining stability (average tenure) and omitting the standard deviation of tenure. The results of these two regressions produced little difference in explained variance and in the size and significance levels of the beta weights for the same years. Therefore, no additional tables are reported.

It can be concluded that average tenure and not standard deviation of tenure, is a more accurate measure of the stability construct since it was more often significant with larger beta weights over all three

models.

The influence of stability is more clearly assessed by examining the partial correlations. For each year in the lagged endogenous model, the partial correlations were higher for the lagged profitability effect i.e., Y_{t-1}, than they were for stability. The partial r for stability ranged from zero to Pr=-.09, at best. The larger Pr for 1978, Pr=.07, and 1979, Pr=.06 ($p<.05$), were associated with profitable years. The similar partial correlations for 1981, Pr=.05 and Pr=.09 for 1982 occurred during recessionary years (see Table 14). The benefits of cohort tenure stability endured throughout favorable and poor economic conditions. However, they were offset by the short term momentum of the organizational system as revealed by the significant lag.

What is noteworthy about these findings is that they sustain such tenets of bureaucratic theory as hiring and promotion based on capability. One consequence is that individuals familiar with corporate history and culture, with necessary expertise are promoted to top management. As such, those who make it to the upper levels of the organization should be the "fittest" of all potential executives. They have survived and mastered the politics of the organization and possess recognized abilities. Individuals promoted into the executive constellation are competent and personally harmonious with other group members. This is more likely to occur the longer the individuals have worked together. Presumably, those malcontented or difficult individuals have voluntarily or involuntarily exited the company or most certainly, would not be promoted into the upper levels of the company.

In general, the data support the benefits of minimized turnover in

American corporations. Such an approach elicits a substantial internal labor pool from which to cull, train and inculcate company policies and procedures. Promotion from within the company is a source of motivation, as these successful individuals serve as role models to those at other levels. The outcome is a group of individuals well versed in the company and industry environment, and familiar to company and industry members. Their presence in leader roles should also reduce anxiety since the members of the leader group are a "known quantity". Others in the company who have worked with members of a management team would have a greater awareness of their personalities and abilities. The social system of the group is preserved and there is little disruption from new members, as depicted in the succession literature.

What is particularly interesting about the data is that the effects of stability were always positive and significant during 1981 and 1982 in the cross sectional and lagged endogenous model as well as for 1980 lagged effects . These, along with the insularity results, support findings in the group literature that individuals band together against a common outside threat, in this case, a poor economic climate.

One caveat is that the findings endorsing the benefits of stability may only hold for large, bureaucratic organization, or at least those large enough to be publicly listed. The stability findings may not be relevant to much smaller and/or younger companies or small groups such as classes or intraorganizational departments.

Comments on Group Level Leader Variables and Profitability

Although the predicted relationships were often not significant and sometimes not in the hypothesized direction, some insights were offered

by the group level results.

First, inequality, or dispersion of tenure distribution, and its prevention of cohort formation was not, alone, predictive of profitability. The highest Pr for equality was -.10 (see 1979, Table 14). It was significant for 1976 and 1977 lagged effects on 1981, the middle of the recession. This result suggests support for the long term benefit of cohort formation of decision making during benign periods. Taken with the stability results, the implication is that groups with little tenure dispersion comprise a smoothly functioning, future-oriented, group.

Although dispersion in terms of date of entry was not significantly related to profitability, heterogeneity of executive source was, in both the long and short term. Insularity i.e., ratio of career to total managers showed generally negative associations with profitability, especially in the cross sectional and lagged endogenous models (see Table 6 &11). Although significantly correlated with stability (r=.65), insularity explains only 43% of the variance of stability. Therefore, the high tenured executives in the present sample were not necessarily career managers.

This indicates that organizations do seek a balance between cohort similarity and the insularity of career managers by incorporating individuals with some variety of tenure and source into their executive group. Advantages of homogeneity and heterogeneity of executive group composition are gained through tenure-based company knowledge, qualified by executives with exposure to other firms and/or industries. Organizational learning is enhanced by recruiting those with a variety

of experiences inside and outside the organization.

At this point, no further understanding of the process by which leadership influences profitability can be determined from the data. The findings for the group level variables of inequality, stability and insularity indicate that more detailed attention to the latter two over a longer time span would provide an appropriate framework from which to study the leader effect.

Profitability -Results By Individual Leader Variable

Prominent Star

This construct was measured by the ratio of positive to total citations appearing in major publications of the business press. It showed significant correlations with the group level leader variables of stability (r=.14), insularity (r=.23), inequality (r=.23) and CEO as gatekeeper (r=.27) (see Table 3). This implies that longer tenured managers of groups that demonstrated management change through CEO and group distances, were more often cited in the business press. In fact, the changes in the group were likely to attract the attention of the business media. Given the publication dates of periodicals surveyed, which appeared at weekly, bimonthly and monthly intervals, the effects of this variable should have appeared within the lagged time periods examined.

The correlation between star citations and profitability was zero and negative (see Table 4). The negative correlation coefficient sign was most likely attributed to the tendency of the press to focus on the leaders of firms with new and trendy products and services, which, may not be profitable in the introductory stage.

The cross sectional analyses (see Table 6) did not support the hypothesized positive relationship between the presence of a prominent star and profitability. Only one beta weight was significant in 1984. A similar beta coefficient was found in the lagged endogenous model for the same year (see Table 11). Given these generally insignificant results and the low alpha level of the lone significant beta weight, little support for the influence of a star CEO was offered.

An alternative test was based on the premise that a prominent star might be associated with profitability in the long run rather than the short run. This possibility was not sustained in any of the lagged exogenous analyses.

To rule out the possible effects of multicollinearity between the group level leader variables, which included the CEO/President, and the individual level star, an abbreviated lagged endogenous regression model was run. It retained all the environmental and organizational variables along with the individual level leader variables of prominent star, bridge role and gatekeeper role. Group level leader variables, i.e., insularity, inequality and stability were excluded from the model. These results appear in Table 15. The star's effects were similar in that the beta coefficient was significant for the same year, 1984, as in the full model, at the same alpha level and of comparable magnitude. It can be concluded the effects of this individual leader variable were not affected by the group level leader variables.

One explanation for the lack of support for a star CEO, despite the logic of the hypothesis, lies with the selection of topics by business journalists. An informal content analysis by the coders revealed a

predisposition of the business press to focus on topics that are ambitious, exciting, successful and innovative. This was especially so for magazine type periodicals, since trade publications and newspapers were excluded from the data collection. Their overriding premise appeared to be that whatever works for large, visible companies should serve as a source of inspiration for other businesses. In addition, the business press seemed to highlight courageous risk takers who were bottom line successful regardless of company size. The general impression of the coders was that stories about this type of individual leader were more likely to be in the business press than were stories about individuals who lost their positions due to faulty judgments or circumstances beyond their control.

Examining only CEO/President citations also self selects accomplished people into the news. Evidence of this is their position as head of a large corporation that has itself survived to become public for at least six of the ten years investigated.

It appeared that, in the case of an acquisition for example, more copy was available about the acquirer's corporate leader than about the management of the company that is acquired. However, this was merely the impression of the coders and should be subjected to more scientific analysis.

The calculation of positive to total citations was influenced by the quantity of both as available from the ABI/Inform Abstracts. Although a company's CEO/President would be negatively associated with, for example, a failed product such as General Motor's J cars, the management would also be cited for some positive action, such as General

Motor's adherence to quality of work life concerns. More citations concerning the quality of work life would be available, because it was multiphasic and of longer duration than the plans for, introduction and withdrawal of the J cars. It also fit into the preoccupation with the successful and generally optimistic orientation of the periodicals from which the abstracts were coded. In the GM situation, a failed product and subsequent retrenchment should show a more dramatic impact on profitability, due to the capital expenditures of this industry, than would the expenses of an on-going quality of work life program.

Along the same line, another viable explanation of the star citation results is that business press prominence has little to do with the factors involved with profitability. Companies that are cited in the business press for their demonstrations of social responsibility or other "good will" gestures involve acts that may be difficult to quantify, and may actually cost the company money - or have no direct connection to profitability. A company lauded in the press for rectifying product errors would also lose money, at least in the short run, but might receive a positive coding from the raters depending on the circumstances of the case.

A different reason why this hypothesis was not supported may be that star prominence has little to do with profitability within the limited time frame of the present study. Announcements of a new joint venture by a CEO/President may impact on profitability at some future point beyond the lagged periods of the present study, and were therefore, not revealed in the limited time frame of the lagged exogenous models.

In any event, this hypothesis was not supported.

Gatekeeper

This construct was operationalized as the number of extraorganizational governance mechanisms the CEO/President was associated with. The results of this variable did not support the hypothesized positive effects. This measure loaded on the company size factors in the factor analysis (see Table 5); like the asset size measure, its relationship to profitability while insignificant, was negative (r=-.04) (see Table 4).

The efficacy of potential clients, suppliers and other types of associations attained through outside boards and similar positions may not manifest themselves within the same year. Nevertheless, this possibility was not supported by analysis of the lagged independent variable models. which revealed no significant long or short term effects for any of the years investigated (see Tables 6-11).

The results of the lagged endogenous model demonstrated one significant positive beta weight for 1984. Consistent with above, the partial correlation coefficients (Table 14) disclosed the association of the gatekeeper role with profitability to be zero with the exception of 1984 and 1985, in which it was -.05 and -.01, respectively.

The possible suppression of this variable's effects generated by the multicollinearity of the individual level leader variables with the group leader variables was examined. The results of this abbreviated lagged endogenous model disclosed the gatekeeper role to have no significant effect on profitability (see Table 15).

The predominantly negative relationship between gatekeeper and

profitability may be related to size effects. Size in terms of assets, was negatively related to CEO gatekeeper (r=-.11) and profitability (r=-.03). Gatekeeper and profitability were also negatively related (r=.-04). Herein lies the potential for reverse causality. CEO/Presidents of the sample companies may have been invited to hold these external positions precisely because of their position in a visible, large company. Such individuals may be preferred in the hope that they provide increased visibility and contacts to the host organization. Instead of successful i.e., profitable companies seeking to build networks, smaller nonprofit or less distinguished firms may look to respected leaders of prominent companies to provide opportunities and enhance their reputation. This may be true even if these large companies have been less profitable during various periods of time.

Another reason for the nonsignificance of this variable is the measure used. Rather than examine the number of outside organizations the CEO is associated with, a better way to gauge the gatekeeping proficiency of the leader might be to examine the quantity and quality of outsiders he is able to attract to his company's board of directors. Companies often invite individuals of important constituency groups to sit on their boards, thereby coopting environmental elements. In other cases, hostile outsiders interesting in taking over the company may wage proxy fights or buy up enough shares to warrant a board position. This provides evidence of present management's inability to protect and defend its position.

In the present context, examination of all executive external

affiliations may be preferable to evaluating just the CEO as the door of his company's "gate". The lack of support between the gatekeeper role and profitability may also be due to the "cosmetic" aspects of board membership and less with profitability per se.

Central Bridge

The premise of this hypothesis was that a leader with some entry date distance from other group members, occupies a bridge role across the various cohorts that might exist in the leader group. The only significant parameter estimate for the bridge role across all three models was found for 1982 in the lagged endogenous model (see Table 11).

The partial correlations for the bridge role in the lagged endogenous model revealed a slight association between the CEO's distance from other group members and profitability for 1977-1979 and 1983; no influence for 1980, 1981, 1984 and 1985. At best, the correspondence between this variable and profitability was Pr=-.04 for 1982. For 1982, this partial correlation demonstrated this variable to have a lesser influence on profitability than did industry GNP, outside ownership and group stability. It showed a greater association than the gatekeeper and star individual level leader variables, as well as the group level leader variables of insularity and equality. Only the partial correlation for stability was higher for the group level leader variables for 1982 (see Table 14).

As discussed in the group level leader results, a measure of central tendency such as the mean, may be a better measure of the distance construct. This idea is relevant to the measurement of the bridge function. A CEO/President with a longer tenure may be more

proficient in managing communication and decision making processes among several cohort groups. This is true for several reasons. First, a longer tenured CEO is familiar with the company's history, including prior mission and goal changes in response to environmental variations. Thus, he should be a good judge of where the company has been, where it is, and where it should be in the future. As such, he can anticipate and prepare for the necessary company changes by assimilating personnel with complementary knowledge, skills, abilities and personalities. In this manner he can also choose and groom his successor. His role as an elder statesman and mentor should evoke the admiration and respect of his executive group, enhancing his efforts at decision consensus and conflict management. If this line of reasoning is correct, then the CEO's tenure may be a better measure of the bridge role than the average distance operationalization.

This approach was tested by substituting the CEO/President's tenure in place of the average CEO distance measure in the abbreviated lagged endogenous regression. The results of this analysis (see Table 16) were unexceptional. As in the full lagged endogenous model (Table 11), the abbreviated model showed significant beta weights for 1982. The bridge beta, measured by CEO tenure, was significant at $p<.05$ in the abbreviated model, in comparison with $p<.10$ in the total lagged endogenous model. However, it was of lesser magnitude ($B=.1783$, see Table 16 versus $B=.-2866$, see Table 11). Also in the abbreviated model (Table 16) was a significant beta weight for 1979 ($B=.2304$) which was not significant in the full model (see Table 11). The results for the bridge role measured as CEO tenure when viewed with the positive, often

significant effects for group tenure (stability), suggest that the leader's relationship to the group as a cohort member or elder statesman may have a favorable influence on profitability.

However, CEO tenure doesn't offer information about the CEO's relationship with the group, but merely measures another individual leader characteristic. Whether his tenure affects profitability due to his cohort membership and influence in group processes, or whether he is admired as a seasoned expert remains to be studied.

Comments on Individual Level Leader Variables and Profitability

The findings of the individual level variables indicate attributions of corporate performance to the CEO/President may be too narrow in scope. Comparison of the results of the abbreviated models in Tables 15 and 16 which isolate the individual leader's effect showed few individual leader level significant predictors. The partial correlations were generally not as high for the individual level leader variables as they were for the group level leader variables (see Table 14). As such, the results of the present study support the "scapegoat" theory of succession (Gamson & Scotch, 1964), which holds the individual responsible for group-related outcomes.

Of all the individual level variables, any substantial impact of the CEO would have been evident in the average tenure measure, since it was significant on the leader group level. Furthermore, the results of the proposed model revealed that the leader group is probably the appropriate unit of analysis of the leader effect on corporate profitability, at least in organizations large enough to meet public stock trading requirements. However, none of the leader variables had

beta weights as large as the Y lag, which was the strongest predictor of profitability (see Table 11).

Profitability -Environmental and Organizational Variable Effects

General environmental variables exhibited a negative impact on profitability, with a correlation of r=-.16 (p<.001) for National GNP and r=-.15 (p<.001) for the New York Stock Exchange Index. As discussed earlier, these findings are believed to be sample specific. The initial pooled data showed a significant and positive, but small beta weight for both National GNP (B=.0009, p<.001), and not for the New York Stock Exchange, American Stock Exchange and Nasdaq indices. However, this situation could not be further investigated, since the pooled data was characterized by autocorrelation which biased these parameter estimates. Lack of sufficient numbers of observations precluded their effects in the subsequent cross sectional analyses.

The organizational-specific or task environment variables of industry GNP and industry concentration did not have a similar impact on profitability. Industry GNP which generally demonstrated negative beta weights, had a negative, significant beta in 1981, and a positive and significant beta in 1982 in the cross sectional and lagged endogenous models (see Table 11). Firms in industries undergoing rapid growth are generally less profitable, which should be expected for recessionary 1981.

However, the determination of profit may have less to do with environmental factors than with accounting procedures. If profitability (the numerator) is recorded in current dollars and assets (the denominator) is calculated on book value as opposed to current dollars,

the company will appear more profitable. Due to the legal as well as economic environment, some of the sample firms may have changed accounting procedures around 1982. Figures were not kept on how assets were evaluated for each firm in the sample. Closer attention should be paid to this situation in future research.

The effects of industry GNP differed widely, depending on the year examined. The Pr went from virtually zero from 1977-1980, then to Pr=.08 in 1981 and Pr=.14 in 1982, and dropped to Pr=.01, at best, in the remaining years.

Industry concentration was never significant in the cross sectional, lagged independent variables except for 1982 effects on 1984 (Table 10), in the lagged predictor model. The partial correlations which ranged from zero to Pr=.02, revealed industry concentration to have little association with profitability (see Table 14). A mean concentration of .38 (Table 2) suggests sample firms operated in an environment with some degree of competition. Perhaps, through industry associations or other mechanisms, the sample firms were able to neutralize competitive effects on their businesses but not to the extent where they contributed to profits.

The beta weights for the organizational variables did not show any consistency in significance or size throughout all the models. For example, firm age tended to be negative in the yearly breakdowns (see Table 6) and significant for 1982 only. Yet, it was predominantly positive in the lagged models of 1976 and 1977 (Tables 7 & 8) and negative for the 1980 and 1982 lags (Tables 9 & 10). The partial correlations for firm age were zero, except for 1982 (Pr=-.04) and 1983

(Pr=-.01)(see Table 14).

Several explanations exist for this unlikely finding. The company's date of incorporation was recorded from Item 1 of the 10-K report. Several of the sample firms as noted in Appendix A, changed their corporate form. Some merged or were acquired under a new corporate name while retaining assets and executives. Due to economic conditions in the early 1980s, firms were likely to adapt by combining assets in mergers and through vertical integration or diversification, in order to survive and thrive.

Manufacturing firms dominated the sample. They tend to be older than firms in newer, growth industries. Mergers and acquisitions may have taken place in an attempt to decrease costs through vertical integration as well as achieve economies of scale in manufacturing. The fact that this significant finding occurred during a recessionary period may have unduly influenced the industrials in the sample. As the recession started in 1980, these firms may have had no choice but to lock into high interest rates in order to finance necessary capital equipment or meet fixed expenses.

This result is sample specific, since as noted in chapter 3, an increasing percentage of sample firms became unprofitable from 1976-1985 regardless of economic circumstances. Several of the smaller, owner-managed firms were not start up firms, but had been in existence for many years before going public. They were less able to weather the economic downturn, especially afte rapid expansion, than the larger, newer corporate forms.

Both size and technology variables were insignificant predictors of

profitability. The partial correlations were higher for the administrative technology measure than for the capital technology measure (see Table 14), and were unimpressive for both variables.

Outside ownership was only positive and significant for one year, 1982, in the cross sectional model (see Table 6). It was negative when significant in the 1976 and 1977 lagged models (see Tables 7 and 8); the lagged effects of 1980 outside ownership was positive and significant for 1982 and 1983 (see Table 9). These results suggest that outside ownership as a managerial constraint during good economic periods has a negative impact on performance; this constraint enhanced performance during unfavorable times (see Table 9). Outside ownership did not have a significant effect on profitability in the lagged endogenous model.

The effects of inside ownership were positive and significant for the same two years, 1977 and 1983, in the cross sectional and lagged endogenous model. Only 1976 inside ownership had a significant impact on 1977 profitability. Comparatively, the size of the beta weights for inside ownership indicated that it had a greater effect on profitability than did outside ownership especially in the short term. The effects of inside ownership on profitability provides support for compensation systems which link individual gain to company performance.

On the whole, the yearly analyses (as presented in Tables 6 and 11) indicated recessionary 1982 to be the year most influenced by organizational variables. Significant parameter estimates were found for firmage (negative) and industry GNP (positive) in the lagged endogenous and cross sectional models. Aside from firm age, industry GNP and inside and outside ownership, there were no other significant parameter

estimates for any other environmental or organizational variables originally identified as predictors.

However, the prior value of profitability, the Y_{t-1} lag which was investigated to improve the explained variance of the proposed model, was consistently the most powerful organizational predictor of profitability. Examination of all prior profitability levels on the particular year studied identified only the immediate prior year's value as significant. Even with this deterministic pattern, the beta weights varied for the lagged Y value, ranging from an approximate .29 of one standard deviation change in profitability in 1979 to .71 of one standard deviation unit change in 1980 profitability. In all instances, the beta weight for the previous profitability value was significant. A review of the partial correlations related this lag as the variable most highly associated with profitability (see Table 14).

Discussion of Profitability Results

The effects of environmental, leader and organizational variables on profitability varied with the time period in question. Some of the highest R^2s were found for the two years 1981 (R2=.33) and 1982 (R^2=.38) in the lagged endogenous model (Table 11). Similar levels of explained variance were reported in other yearly periods from various combinations of predictors. For example, inside ownership, standard deviation of tenure and Y_{t-1} showed significant parameter estimates in 1977, with R^2=.31. All of the explained variance in 1980 could be ascribed to the Y lag (Table 11). The R^2=.44 for 1984 could be attributed to the Y lag, standard deviation of group tenure, ratio of career managers and inside ownership. What can be concluded here is that the predictors of

profitability vary with each year, as does the utility of the various models investigated.

The environmental and organizational leader variables, with the exception of the Y lag, were characterized as having lower beta weights, or less of an impact on profitability, and were less often significant than were the leader variables (see Tables 6, 11). Accordingly, the environmental and organizational variable partial correlations, with the exception of industry GNP in 1982, were lower in comparison with the group and individual leader variables (see Table 14). None of the originally specified environmental organizational variables was as distinctive in its outcomes as was the leader group variable of average tenure, regardless of the model examined. However, the effects of these predictors were never as strong and consistent as those of the lagged Y variable.

Industry GNP which was sporadically significant, provided some indication of environmental conditions. This, combined with the significant parameter estimate for National GNP in the pooled data, suggest that the model presented would be improved through the addition of other measures that measure environmental conditions. Since the stock market indicators did not show significant parameter estimates for the dependent variable, care should be exercised in the choice of environmental measures. Those most closely related to the dependent variable are the obvious choice.

Organizational variables were not as salient in the present sample as they were in the previous research of Lieberson & O'Connor (1972) and Weiner & Mahoney (1981). Environmental, organizational and leader

variables were most often significant for 1981 and 1982, recessionary years. Contrary to their findings, the group leadership variables, especially stability, were more consistent and powerful in their effects than were environmental and organizational variables, in both the yearly and lagged endogenous models.

The analysis of the lagged endogenous effect on profitability showed a distinctive pattern of only one prior period as significant. While prior measures of the same variable are obviously expected in time series data, what was unanticipated is the short term effect of previous profitability, since it is more likely manifested over the long term.

The short term effects of previous profitability, albeit yearly, showed a uniform pattern which justifies the notion of organizational momentum, or the organization as an "actor" perspective (Hall, 1977). That is, the organizations sampled influenced their own performance in small, steady increments. Often these effects were in combination with the environmental, organizational and leadership factors. Based on the significant predictors in 1982 in the cross sectional and lagged endogenous models, it appears that these latter factors are only significant during stressful times, such as a recession. Indeed, the very direction and significance of the leader variables, especially average tenure, are also part of the organizational momentum, since the positive signs for Y_{t-1} and average tenure emphasize a preference for, and beneficial outcomes of, steadiness. The findings present a picture of steady state equilibrium and growth, with the company propelled by the cumulative, incremental effects of prior performance.

Thus, the above findings provide no evidence for "either" a leader

"or" organizational effect on profitability performance. Rather, they support the integrated influences of organizational processes, environmental factors such as industry GNP, and some leadership characteristics on organizational performance. As such thee results illustrate the futility of attempts to unravel the reciprocal effects of performance and managerial tenure, as well as the partitioning of organizational outcomes into discrete categories of environmental, organizational or leader effects.

The effects of these variables on stock price is examined in the next section.

Predictive Power of the Hypothesized Model - Stock Price

General Comments

The residuals of the stock price midrange measure for the pooled sample data showed no definitive pattern i.e., were randomly distributed, although the mass they presented appeared more dense than that of the profitability dependent variable. Nevertheless, plots of the midrange stock price residuals by year revealed the same vertical pattern as that of the other dependent variable. Characteristic of the stock price scatterplot were distinctive outliers for 1977, 1978, 1979 and to a lesser degree, 1981 and 1983. These were retained to avoid further loss of data, since the SAS programs utilized in the present analysis deleted any case with a missing value.

Regression analysis of the pooled data indicated the appropriateness of a linear model. Although the R^2 of .35 was significant ($p<.0001$), it was not particularly impressive, considering that all but one variable had parameter estimates significantly different from zero. The most likely cause of a generally low R^2 accompanied by significant beta coefficients was bias attributable to the substantial influence of serial correlation. This was present for the stock price analysis, as indicated by an autocorrelation of .72 and a Durbin Watson statistic of .61 (see Table 17). This serial correlation of the error term in the pooled data was more substantial for stock price than it was for profitability. Consequently, the standardized beta coefficients for stock price were, most likely, overestimated (see column "total sample" Table 17).

In order to control for the distortion of these serial effects, separate regressions were run for each year in the study. The results of these analyses (see Table 17) demonstrated the appropriateness of the linear model for every year, with R^2s ranging from a high of .43 in 1979 to a low of .16 in 1983. More of the variables showed significant parameter estimates and greater consistency of direction in predicting stock price than was the case for profitability. Examination of the Durbin-Watson d statistic for each year revealed no significant autocorrelation for 1977-1979 and 1981-1982, whose d statistics were above the upper bounds for their respective sample size and number of independent variables. The d statistics for 1976 (d=2.33), 1980 (d=1.67), 1983 (d=1.66), 1984 (d=1.46) and 1985 (1.65) were all within the inconclusive range of 1.16 - 1.85. However all, with the exception of the d for 1984 were closer to the upper bound than the lower.

The analysis proceeded on the assumption that the size of the autocorrelation coefficients did not significantly affect the estimation of the regression Beta weights. The subsequent approach was to assess any overall pattern of each predictor's effect on stock price in the cross sectional, lagged exogenous and lagged endogenous models.

Cross Sectional Results - Stock Price

It should be noted that the environmental variables National GNP and N.Y.S.E. did not show significant parameter estimates when regressed on stock price, nor were they significantly correlated with the dependent variable (see Table 4). They could not be included in the yearly analyses, and based on the preceding, it was assumed they had little effect on stock prices in the sample companies. The lack of

effect of these general environmental measures may be due to the fact that the smaller companies in the sample were listed on the American Stock Exchange or Nasdaq and not necessarily on the New York Stock Exchange. Also, industry rather than National GNP more accurately represents the task environment of sample firm as suggested by the significant correlation between industry GNP and stock price (see Table 4).

Firm age was a significant positive predictor of stock price, from 1976-1979, an economically calm period, and in recessionary 1981. The coefficients for industry GNP were only significant and negative in 1981 and 1983. The beta weights for industry concentration were insignificant for all years except 1980.

The negative beta weights for industry GNP indicated that the youth and volatility characterizing growth industries reflected greater risk, and resulted in lower stock prices. Stock buyers apparently avoided the uncertainty of industry growth in favor of control over competition and steady demand as indicated by the r=-.17 relationship between industry GNP and stock price, and the correlation of r=.11 (n.s) for industry concentration and stock price (see Table 3).

Both size measures had a significant negative impact on stock price in 1978 and 1979. Apparently, during favorable economic periods larger firms were viewed as inefficient and not good investments or not exciting enough to inspire upward bidding for its stock. The change in the directional relationship of number of employees and stock price from negative from 1977 to 1979 to positive in 1984 (see Table 11) can be attributed to the change in economic climate. The threat of the 1981

recession may have swayed investors away from the more speculative stocks in favor of the blue chip stocks of larger firms. The larger firms had relatively higher stock prices than their smaller, owner managed counterparts and may have demonstrated more variability in price gains and losses in comparison with the smaller firms with stock shares worth a few dollars each.

The effects of capital based and administrative technology were insignificant except for a negative beta weight for administrative technology in 1984. The correlations between both technology measures and stock price were also unremarkable (see Table 4).

The negative and significant effect of inside ownership on stock price from 1980 to 1982 supported the significant negative correlation coefficient r=-.24 (see Table 4). All companies included in the present sample used stock options as part of their compensation packages. It would be expected that managers with such stock options would select alternatives that would maintain or increase the market value of their options. If the company's stock price rose, their personal wealth would increase. The reason why this positive relationship did not hold in the present study was due to the particular companies in the sample.

Approximately 11% of the sample was comprised of small oil companies, with owner/managers with sizable stockholdings, which decreased in value due to declining oil prices. Other small companies constituting 7.5% of the sample were newer, service oriented firms which typically suffered a decline in stock prices after some initial optimism. A few companies ceased trading for some of the years in which they were studied. However, if the company's 10-K report reported a sale

price for a particular year, even if it involved just one transaction, that price was included in the data. In such cases, the price of the stock remained the same for several years, usually at a low price.

Both individual and group leader variables were significant predictors of stock price. The cross sectional findings for these variables indicated that investors demonstrated a distinct preference for a long tenured cohort group composed of career managers. This was determined by the positive, significant beta weights for stability and insularity, and the negative significant beta weights for inequality of entry dates and stability measured by the standard deviation of tenure.

Stability, measured by average group tenure, showed the highest correlation of all the independent variables (see Table 4) and had significant and positive coefficients for all years studied cross sectionally. The beneficial effects of career executive managers as perceived by stockholders was demonstrated by the four years of positive, significant beta weights for insularity in 1977, 1978, 1979 and 1981, covering periods of economic growth and decline; the negative, significant beta weights for the standard deviation of tenure for all years except 1983; and, the negative effects of dispersion in group member distances. The group leader measures were particularly salient for the 1976-1981 time periods (see Table 17). As was the case for profitability, the beta weights for the group level variable stability, were the highest and most consistent among all the predictors of stock price.

The star individual leader variable was not significantly related to stock price despite a significant but low correlation of r=.11 (see

Table 4). This suggests that stockholders make their buy/sell decisions based upon information other than that offered by the popular business press. The predilection of the press to focus on changes in executives or new products, technologies and ventures which are viewed as signs of growth and adaptation has little influence on stock prices.

The two other individual leader variables, gatekeeper and CEO bridge had a generally positive impact on stock price. CEO bridge date of entry distance from other group members was positive and significant for six of the ten years surveyed, i.e., 1976-1979 and 1981-1982 (see Table 17). This underscores the preference of stock traders for continuity of the same CEO/President and implies traders make sense of the corporate legal entity through personification of the leader.

Interestingly, the signs for the CEO bridge based on tenure differences from other group members were positive, while those for inequality or group distance in dates of entry were negative. The individual with a some distance from other group members of lesser rank is probably familiar to stockholders and conveys an aura of stability and competence. His efforts at composing a respected executive group over time would most likely involve personnel changes, thereby increasing his distance from the newer entrants. This provides security through the CEO but adaptation via the introduction of newer members over time. A CEO approaching retirement age may have spent 45 years with a company. Other group members might have forty, thirty, or twenty years of experience with the company, and still be some distance away from the CEO. The findings suggest that gradual group adaptation rather

than drastic personnel changes, especially during crises, are beneficial to how the company is perceived by the stock market.

The CEO/President gatekeeper function as measured by extra-organizational memberships revealed beta weights in the hypothesized direction but significant at lower alpha levels than was the bridge. The positive effect of extraorganizational governance memberships was found during the relatively favorable economic period of 1976, as well as in 1977 and 1980 when prices dropped.

As was the case for profitability, the group level variables were the most useful predictors of stock price. The stability leader variable was significant more frequently and at higher alpha levels than other environmental, organizational and leader variables.

Alternative Model Exploration - Lagged Dependent Variables

Although the results indicated the model was more predictive for stock price than profitability, the overall explained variance of the model was 47% at best, for 1977 (see Table 17). Improvements were sought through the same approach described for the profitability variable.

First, the lagged effects of independent variables were investigated. According to the efficient market hypothesis, stock prices react immediately to market changes and reflect all relevant information at that point in time. If this is assumed, one year lags might be the only relevant time frame provided by the data. Given the immense volume of trading, some might consider this a long term perspective. However, since mid range values were used in the present study, it is acceptable to assume that a high or low stock price may

have been influenced by some organizational and/or leader decisions of the previous year(s). Furthermore, stock trading is fueled by the buyers and sellers perceptions about the company and its leaders which are, in turn, influenced by a history of dividends and prices.

In order to determine which years should be lagged, the March 1988 issue of the U.S. Government Business and Commerce Digest was consulted. The composite indicator of stock prices (p. 13) based on 500 common stocks shows a pattern of rises and falls similar to those of the profitability composite measure. That is, stock prices showed a corresponding decline in the first quarter of 1978, 1980 and during the 1981/1982 recession. They generally showed continual price increases after the 1982 recession, with a 1984 downturn regained in 1985.

Due to the similarity of the pattern of the composite indicators, the same procedures described in the profitability analysis were used to assess the long and short range effects of the hypothesized predictors on stock prices in subsequent years.

The effects of 1976 predictors were assessed against the stock prices of 1977 for the short term and their long term effects on the price drops of the 1980, 1981 and 1982 recessionary period. This lagged model of 1976 effects yielded R^2s ranging from .18 in 1980 to .40 in 1977 (see Table 18). The short and long term effects of 1976 independent variables did not improve the explained variance over the cross sectional analysis. At best, the long term effect of 1976 predictors on 1982 stock price explained the same amount of variance as did the 1982 independent variables (R^2=.31 for 1976 and R^2=.32 for 1982) (see Tables 17 & 18).

Although the overall amount of explained variance was not improved, the composition of significant betas in the regression equation did change. While fewer of the 1976 lagged predictors were significant in comparison with the cross sectional analysis, the standardized beta weights of the lagged effects were greater in value, with the exception of the size beta (number of employees) and 1977 stock price. The directional effects of the 1976 predictors were the same as those in the yearly analysis.

The explained variance of 1977 lagged predictors showed a greater effect than that of the 1976 lags (see Table 19). The R^2 in the short term i.e., stock price for 1978 and 1979 was similar to the R^2 of the cross sectional results (Table 17). Like the 1976 lags, fewer predictors had a significant effect on the dependent variable, but their betas were equivalent to or greater than those reported in the cross sectional results. This was especially so for the stability and insularity leader variables (see Tables 18 & 19). It appears that the group leaders and their decision outcomes had a positive influence on stock price in subsequent benign as well as threatening periods. The CEO bridge in 1977 had a more significant lagged effect on the stock price of subsequent periods than it did in the yearly breakdowns (see Tables 17 & 19).

Coinciding with the profitability analysis, the independent variables of 1980 and 1982 recessionary years were regressed on successive years. The independent variables of 1980, the onset of a period of economic decline, explained more of the variance than the yearly divisions; R^2=.33 versus R^2=.27 for the yearly analysis of 1981;

R^2=.38 versus R2=.32 for 1982; R^2=.36 versus R^2=.16 for 1983; and, R^2=.26 versus R^2=.21 for 1985 (see Table 20).

Apparently, the organizational and leader characteristics of a firm and the decisions emanating from them at the start of an unfavorable economic phase influenced stock price performance at a later time. The negative relationship between 1980 assets and 1982 and 1983 stock price implies the large companies in the sample suffered a decline in stock prices during the recession of 1982 and return to prosperity in 1983 (see Table 20). Such price reductions may have been of lesser magnitude than price drops for the smaller firms. Perhaps investors purchased the stocks of smaller companies when they sensed an end to the recession and held them until economic indicators were up.

Stability (average group tenure) was again positive and significant for all 1980 lags, with betas higher than those of the cross sectional results. Standard deviation of tenure and dispersion of entry date (inequality) was negative and significant, supporting the long term benefits of stability of personnel and group similarity of date of entry.

The individual leader variable results upheld the perceived advantages of a CEO's distance from the remainder of his executive group, as well as the long term usefulness of outside contacts. The beta coefficients were positive and significant for 1980 contacts and 1981, 1982 and 1983 stock prices. They were insignificant in the cross sectional analysis. The results of 1980 independent variable lags demonstrated the importance of leadership on the group and individual level in both the short and long term (see Table 20).

The study of the 1982 independent variable effects was limited to t+3 at most, since data was not collected past 1985. The environmental and company effects of 1982 were not as significant as the 1976, 1977 and 1980 lags, with levels of explained variance similar to those of the same years within the yearly breakdowns. Most of the contribution to R^2 was attributable to leader variables. The importance of both measures of stability was maintained with positive significant betas similar to those in the cross sectional analysis for most years studied (see Table 21). Of the individual level leader variables, the CEO bridge in 1982 was a significant and positive predictor of 1983 stock price. However, the beta weight was only significant for that year and it was not as relevant a predictor of stock price as were the 1982 lagged stability effects.

Stock Price - Summary of Lagged Independent Variable Effects

Organizational variables were not as consistent in their lagged effects on subsequent years as were the leader variables. Firm age was positive and significant in both the short and long term. Size, in number of employees, for 1977 had a positive, significant effect on 1978 stock price; its 1977 lag had a significant beta weight for 1978, 1979, 1981 and 1982. The impact of outside ownership was negligible. Inside ownership for 1976 and 1977 had a detrimental effect on 1980 stock price. This, as mentioned, may be due to the number of smaller, owner controlled and managed firms in the sample that could not withstand changes in the market conditions.

Stability, measured by average group tenure had a consistently positive and significant impact on stock price, with beta weights

predominantly greater than those of the cross sectional results. Its complements, dispersion of group entry dates and the standard deviation of group tenure, were negative and significant in a majority of the long and short term effects. These negative relationships support the chain of command hypothesis; i.e., that changes in the executive position below President provide new information to the market which is viewed pessimistically.

While it was expected that leadership would have a short term effect on stock prices, this was also true in the long run of up to five years. The signs for this variable support the appreciation by the stock market of the leadership group as firm specific human capital in the short and long term.

Although the lagged effects support the relevance of leadership to stock price performance, the highest R^2 of .43 (predicting 1978 from 1977 regressors) did not exceptionally improve upon the yearly analyses (in Table 17). The same procedure that resulted in the Y_{t-1} lagged endogenous model for profitability was applied to the stock price dependent variable.

Alternative Model Exploration - Stock Price Lagged Dependent Variables

The search for an improved set of predictors of stock price followed the same procedures as described in the profitability section. For each year investigated, the original predictors and all previous values i.e., all t-n dependent variables were included as regressors.

For profitability, only the Y_{t-1} lag was a significant predictor of Y. The stock price dependent variable did not demonstrate as clear a pattern. For example, 1978 stock price was predicted by Y_{t-1} and Y_{t-2}

in addition to the sixteen regressors in the original model; 1979 was predicted by Y_{t-1} and Y_{t-3}; 1985 stock price was predicted by Y_{t-1}, Y_{t-5} and Y_{t-9}. The scattered effects of the Y lags were evident for 1981 and 1982, which may have been influenced by the autocorrelation present in the error terms for those years (see Table 22).

However, in no instance was the Y lag beyond one period significant at a higher alpha level or with a greater Beta coefficient. This, and the absence of any deterministic pattern lead to the assumption that the t-1 lagged endogenous model was the most appropriate for the data.

The lagged endogenous model results were equivocal. For the most part, there was an enormous increase in the amount of explained variance over the cross sectional analysis. This ranged from an additional 74% explained variance for 1981 to an additional 2% for 1984 in the yearly analysis. However, the R^2 for 1983 was diminished to .03, down from .44 in the yearly analysis (see Tables 17 and 22). Most, if not all, of the improvement in explained variance was due to the addition of the Y lag, which severely diminished the influence of the other predictors.

Examination of the showed the same organizational variables significant as in the cross sectional and lagged independent variables model (see Tables 17-22). However, the significance of the betas of organizational variables in the lagged endogenous model were of lesser magnitude and accordingly, were significant less often and at lower alpha levels than they were in the other two models. Although the lagged endogenous model offered the highest R^2, the results for all three models were also considered in evaluating the hypotheses.

Stock Price - Results of All Models

Group Level Leader Variables as Regressors

Inequality

Inequality, or the degree of dispersion among the entry dates of group members was hypothesized as having a negative impact on organizational performance. The results support the hypothesis. Any significant beta coefficients across the three models was negative. In the yearly analyses, there was a consistent significant negative Beta weight for all years studied except for 1981, 1984 and 1985. The signs for this variable were typically negative in the independent variable lags.

The lagged effects of 1976 inequality were negative and significant at higher alpha levels in the short run than the long run (Table 18). A similar pattern was displayed for 1977 lagged effects for which inequality betas were significant and negative for all subsequent years (see Table 19). Overall, the lagged results for the economically favorable years 1976 and 1977 indicate executive group date of entry dispersion, a sign of turnover, was adversely perceived by the stock market. It appeared that executive personnel changes during economic growth periods were considered an internal system adjustment difficulty.

The lagged effects of recessionary 1980 inequality were also negative. Each standard unit change in inequality was associated with a greater unit change in Y in the short term than the long term (see Table 20). This suggested that leadership changes at the beginning of a recessionary period were either too disruptive or did not allow for sufficient time for decision outcomes to be effective during the ensuing

economic downturn. However, the preponderance of evidence sustained the detrimental effects of group dispersion on stock price.

The inequality beta weight signs were negative and significant for 1977 and 1981 (see Table 22). To risk aversive purchasers, heterogeneity of corporate tenure in favorable 1977 may have signalled an inadequate assemblage of personnel to properly guide the company, which necessitated personnel changes. The alteration of the executive social system and its perceived inability to function effectively during trying economic periods is evidenced by the significant negative beta weight for recessionary 1981.

The partial correlations for inequality was highest in 1981 at Pr=.06 ($p<.05$). This contribution to R^2 was minimal in comparison with the partial regression correlation Pr=.89 ($p<.0001$) for the Y lag (i.e., 1980 stock price) as a predictor for 1981 stock price.

The results across all three models favor equality or less dispersion among top management group members. In general, companies benefit from the homogeneity of personnel entry date and the ensuing cohort formation. This supposition is corroborated by the positive significant coefficients for stability measured by average group tenure and insularity, as well as the negative betas for the standard deviation of group tenure. These findings are discussed below.

Insularity

The hypothesis for insularity was that it was negatively related to stock price i.e., that a large ratio of noncareer to total managers would provide the necessary heterogeneity of experience and information processing necessary to fit the company to the environment. This

hypothesis was, for the most part, refuted. Results indicate that a higher ratio of career managers to total managers was positively associated with stock price. Significant results were recorded for four of the ten years in the yearly breakdowns, 1977-1979 and 1981.

Results were significant in the short term for 1977 predictors only (see Table 19). In the lagged endogenous model, the influence of insularity was upheld as positive and significant for 1977, 1978 and 1985 (see Table 22). However, when the regression partial correlation coefficients were examined they were significant at Pr=.06 in 1978 at best, which was negligible in comparison with the Pr=.89 for Y_{t-1} (see Table 23).

The insularity results are congruous with the inequality finding. Despite the unpredictability of stock prices, these findings also support the tenure principle espoused in bureaucratic theory, as well a human resource policy of growing talent and promotion from within. Not only do investors seem wary of executive distance, they prefer the experience of a cohort of career managers. The sensitivity of stock traders to executive changes upholds the advantages of a homogeneous group. Investors prefer executives well trained in corporate history, polices and procedures. According to group research, they should make higher quality, more timely decisions. This fosters an appearance of capability, strength and certainty when issuing new stock shares and drives up the trading price of existing shares. The results support a relationship in the opposite direction of the one hypothesized.

Stability

It was hypothesized that the average tenure of the executive leader group was negatively associated with performance. This hypothesis was not supported by the findings of any of the models investigated. Rather, a positive, significant relationship between stability and stock price was found. In every year studied cross sectionally (see Table 17) and for all the independent variable lags (Tables 18-21), stability measured by average group tenure was positive and significant, often at high alpha levels. It endured as a consistent predictor of stock price in all models examined.

If an established company was successful based on its previous stock price and dividend record, it probably sustained its price during an economic cycles of decline. Such companies are more likely to benefit from the advantages of a stable decision making group, especially during crises. This was maintained by the size of the stability coefficients in the cross sectional and lagged independent variable models of 1980 and 1982 (see Tables 17, 20, 21).

This pattern was supported to a lesser extent in the lagged endogenous model in which it was positive and significant for five of the nine years investigated, 1977-1978 and 1982-1984 (see Table 22). It too was overshadowed by the introduction of the Y lag. The partial correlations (Table 23) also indicated the contribution of stability to explained variance was not as great as the Y lags.

After the economic decline of 1980-1982, investors, seeking stability during economic uncertainty, examined the leadership of a firm rather than any organizational characteristics as demonstrated by the significant beta weights for these years in Table 22. Furthermore, the

beta coefficients for Y_{t-1} were n.s. for 1983 and 1984, but were the highest of all the stability coefficients. This implies that investors, unable to compose a history of stock price change during the recession, eschewed environmental and organizational factors in favor of leadership as a source of information upon which to base their stock purchases or sales.

In any event, the findings support the bureaucratic notion of stability in most firms and through most types of business conditions. The lagged endogenous model indicates this is especially true during periods of economic uncertainty.

The results for standard deviation of tenure were not significant as often as the average tenure variable. This, and the correlation coefficient of r=.04 versus r=.43 (see Table 4) for average tenure support average tenure as the appropriate measure of stability. It was concluded that group tenure indicative of stability had a positive impact on stock price, not negative as hypothesized.

Comments on the Group Level Leader Variable Results

The effects of group level leader variables on stock price varied with each year studied. The most consistent finding regarding the three group level leader variables was for the significance of stability, measured by average tenure of the group (see Table 24). In the lagged endogenous model, the influence of stability was lower in comparison with the organizational size variable, measured by number of employees, during the 1977-1980 time period (see Table 22).

However, once stock prices fell in 1981, leader group stability became a more salient predictor of stock price through 1984, although

the market regained its momentum in 1983. Apparently, the personification of the corporation into the leadership roleholders is more likely to occur during difficult economic periods. It offers a convenient, visible means upon which stock traders can make attributions for corporate performance.

The results for all variables demonstrated that stock price benefitted from long tenured management groups, primarily composed of career managers with little dispersion in their starting dates with the company. The advantages of decision outcomes emanating from a cohesive, socialized group familiar with company history, policies and procedures, efficient consensus building and decision revisions were reflected in stock price. This defended the tenet of personnel stability in bureaucratic theory as well as the advantages of homogeneous groups. The results reinforce the use of average tenure over any of the dispersion measures, standard deviation of tenure or average distance, in evaluating the effect of the leader group on organizational outcomes.

Stock Price - Results for Individual Level Leader Hypotheses

Prominent Star

This variable, designed to measure the degree of positive visibility accorded the highest ranking roleholders through business press citations, was as problematic in predicting stock price as it was for profitability. The correlation coefficient (Table 4) between positive citations and stock price was $r=.11$ ($p<.001$), low but positive and significant.

This association supports a transaction costs hypothesis in which falling stock prices reflect market reactions to any negative press

descriptions, although other positive information is available. In the present data, information with a detrimental impact on stock prices most likely concerned the company either losing money from, for example, a failed or defective product or costs of a legal settlement. These would have had more of a bottom line and perceptual impact than a positive citation about an innovative CEO decision regarding, for example, the acquisition of another firm or an unproven new product or advertising campaign.

There were no significant findings for the leader as a star in the cross sectional or any of the lagged exogenous models (see Tables 17-21). The lagged endogenous model (Table 22) showed a positive beta weight significant for 1981 only. Such discordant findings were also the case for the other dependent variable i.e., profitability, where it was surmised that positive citations might be confounded with the size variable. The correlation of citations with assets size (r=-.10) and number of employees (r=.09) (see Table 3) were nowhere close to the .80 criterion although they all loaded on the same factor (see Table 5). However, the star citation pattern of results did not correspond with either size measures which showed insignificant beta weights in the model for the same year.

If the lagged endogenous model is accepted as the most appropriate for the data, the positive significant findings for this variable during the deteriorating stock price conditions of 1981 offers the only definitive support for this hypothesis (see Table 22). Its appearance as the only significant finding at the start of the recession supported the personification hypothesis described earlier. The firm with a CEO star

may have offered greater promise of maintaining their stock price during the uncertainty of the times. The Pr=.08 for the CEO star in 1981 was higher than the partial correlations of the environmental, organizational and leader variables, with the exception of the Y_{t-1} lag (see Table 23). The fact that this relationship was not upheld during the ensuring economic decline implied that the reputation of the CEO was eclipsed by the negative macro level conditions prevailing at that time. One significant beta weight in one model for one year does not constitute a definitive conclusion of the effect of a CEO star. There was a general pattern of nonsupport for the hypothesis throughout most of the years in the lagged endogenous model, as well as in the cross sectional and lagged exogenous models.

Gatekeeper

A gatekeeper, or CEO/President with extraorganizational contacts was hypothesized to have a positive effect on stock prices. This relationship was partially supported in the cross sectional and lagged independent variable models but not in the lagged endogenous model.

In the cross sectional analysis, there were significant Beta weights in 1976, 1977 and in 1980 (see Table 17). There was a significant beta weight for the 1977 gatekeeper effect on stock price in 1979 (see Table 19), but the lagged effects of the gatekeeper role were most substantial for 1980 contacts. They showed significant beta weights for 1981, 1982 and 1983, the recessionary years with declining stock prices (see Table 20).

Apparently, in the present sample, the yearly short term and lagged effects of gatekeeper contacts did serve to reduce uncertainty (as

proposed by Pfeffer & Leblebici, 1973) created by the drop in the stock price composite index during the first two quarters of 1980 which recovered for the remainder of the year. The gatekeeper function at this point in time, and its implication for the reputation of the CEO, was probably insufficient to overcome the persistent downward trend of stock price from the last quarter 1981 to the end of 1982.

The results of the lagged endogenous models revealed the relationship between the gatekeeper role and stock price to be significant for 1981 only (see Table 22). It was posited that personal contact gained from extraorganizational associations would strengthen the perception of the individual as a leader. His presence on other boards would demonstrate his capabilities. This would be more likely to occur with stock price which is more perceptually influenced, rather than profitability. However, the findings of significance in the lagged endogenous model were lower than they were for profitability.

The explanation of these nonfindings in the profitability section is also applicable to stock price. The effects of multicollineary due to the presence of both individual and group level measures of leadership were already ruled out. Thus, it was concluded that CEO involvement in extraorganizational governance has little to do with organizational performance in terms of stock price.

Central Bridge

It was hypothesized that a CEO/President that acts as a bridge should have a positive effect on stock price. This implies that the greater the CEO's distance from other group members, the increased salience of the bridge function to mediate among the cohort groups.

This was also supported in the cross sectional and lagged exogenous models but not in the lagged endogenous model.

The bridge effect was positive and significant for 1976-1979 and 1981-1982, covering periods of rising and declining stock prices (see Table 17). These findings were maintained in the independent variable lags. The CEO as a bridge in 1976 was significantly related to the stock price values of 1977, 1978 and 1982. The lagged effects of 1977 predictors was significant on all subsequent years (see Table 19). Similarly, the 1980 lagged CEO distance was positive and significant for all years except 1985 (see Table 20). The 1982 CEO distance was positive in the short term (i.e., for 1983) only (see Table 21).

The lagged endogenous model did not uphold these findings. The addition of the Y lags reduced the explanatory power of the CEO Bridge variable to basically nothing. Although the overall positive direction of the bridge effects was sustained, none of the beta weights was significant (see Table 22). The minimal effects of the CEO bridge can be assessed by examining the partial correlation coefficients (see Table 23). The bridge role effects varied with the year investigated. Its association was, at best, Pr=.03 for 1977 and 1984. Based on the lagged endogenous model, the individual-group bridge linkage was a less useful predictor of stock price than the other individual and group level leader variables see Table 24).

In order to explore the lack of correspondence between the lagged endogenous model and the cross sectional and independent variable lagged effects, as well as maintain consistency of analytical procedures, another regression was run omitting the group level variables and

substituting CEO tenure for the average CEO distance. The effects of CEO tenure did not demonstrate the significance of this variable and no table was reported.

The lack of findings in the lagged endogenous model allude to a possible explanation. If performance is satisfactory, more than likely, previous strategies have been effective and there is a greater group consensus. In such instances, there is no need for a bridge. The positive findings in the other two models imply that the leader exists as a mentor or "elder statesman" admired by other group members. Of course, this is inferential at this point and is a possibility that can be investigated in future research.

It can be concluded that the CEO's distance from the group has some influence on stock price. The results support the figurehead or "elder statesman" role of the CEO President in the cross sectional and long and short term, although the relationship is diminished, or perhaps unnecessary, when prior performance is acceptable.

Comments on Individual Level Leader Variables and Stock Price

Although there was some support for CEO contacts and minimal support of the bridge function, the individual leader variables were not as predictive of stock price as were the group level leader variables, especially in the lagged endogenous models. Despite the impression provided by the business press, it is the average tenure of the leader group and not the individual CEO's tenure that had a positive, significant effect on stock price.

The most meaningful individual level leader variable in the cross sectional and lagged independent variable model was the bridge role.

The tenured CEO would be better able to reconcile the various viewpoints of different cohort groups, resulting in heterogenous viewpoints and high quality decisions. It would also signal that necessary adaptation is occurring under the tutelage of a stable, experienced leader. However, the importance of the bridge role as a predictor was not maintained in the lagged endogenous model.

The CEO as a gatekeeper was also predictive of stock price in the cross sectional and lagged independent variable models, but only for one year in the lagged endogenous model. The CEO as a star was least predictive of stock price of all the individual level leader variables. Overall, stock price was improved when the CEO held a bridge role in terms of date of entry distance and to a lesser extent, when he was affiliated with various extraorganizational governance positions.

Stock Price - Environmental and Organizational Variables

The environmental and organizational variables were no more consistent in their effect on stock price than were the leadership variables. Firm age tended to be positive and significant in the cross sectional (Table 17) and lagged 1976 independent variable analysis (Table 18), but was significant only once in the lagged endogenous model (Table 22). Industry GNP had a sporadic, negative relationship to stock price in the cross sectional analysis and lagged predictor models, and was not significant in the lagged endogenous model. Industry concentration was usually positive and was significant only once in the cross sectional and in the 1980 independent variable lag.

Both size measures were negative when they were significant. The size of the firm measured by number of employees was the most

significant predictor of stock price of all the environmental and organizational variables except the Y_{t-1} lag. Both types of technology did not have a significant effect on stock price. Outside ownership was significant only once in the lagged endogenous model. Inside ownership generally exhibited a negative association with stock price, and was more often significant than was outside ownership.

The most predictive was the midrange stock price of the immediately antecedent year, or the Y_{t-1} value. It was significant for seven of the nine years with greater beta weights than any other predictors (see Tables 22 & 23).

Conclusions - Stock Price Results

The yearly analyses and lagged independent variable results demonstrated the utility of including leadership variables when examining stock price. Of the organizational variables, firm age and size in terms of number of employees, indicated that older firms of smaller size have a positive impact on stock price. Older firms that rely on machinery may achieve economies of scale in productions and increased efficiency. Also, if such firms have downsized and attained a reputation as "lean and mean" the firm will appear more competitive, profitable and attractive to investors.

Inside ownership was also significant but negative. This is explainable by the fact that the smaller companies which often suffered stock price drops had owner managers with large amounts of voting stock; 31.4% of the companies sampled had assets less than $50,000,000 and 43.3% employed fewer than 1,000 persons. It appears that a closely held firm was less able to weather economic downturns, and represented too

much risk. The leaders of these smaller firms were less likely to be well known and were considered less predictable. Also, as significant owner/controllers, they would be less likely to trade their stock, especially when the market was down.

None of the organizational variables showed as consistent an effect on stock price as the leader variables. In the yearly analysis, both the group and individual level variables had a continuous impact from 1976 to 1980 (Table 17) with the individual level variables less salient during the 1981-1985 period. The lagged effects of the independent variables were significant more frequently for the group level variables, especially stability (average tenure) for all four years lagged (see Tables 18-21). The individual level variables of CEO bridge and gatekeeper were more predictive of stock price in the cross sectional and lagged independent variable models (see Tables 17-21).

What can be interpreted from these outcomes is that in general, a long tenured group with low deviation in dates of entry i.e., a cohort, preferably composed of career managers had a positive impact on stock price performance. A CEO bridge with some distance from the group seems to enhance this overall favorable effect, with his outside governance contacts and press citations to a lesser degree. All this should be considered in the context of the stock price history of the firm, since the previous year's stock price had the most sizable impact on stock price.

The present results support several research findings concerning the effect of leadership on stock price. The regression partial correlation coefficients in the present study (Table 23) did not

approximate the 47% of the variance in stock price attributable to leader effects reported by Weiner & Mahoney (1981). Nor, in the present study, did lagging leader predictors necessarily lead to an increase in the explained variance of stock price as reported by the same researchers.

The other studies of the leadership-stock price linkage utilized a succession approach. Reinganum (1985) reported that outsider succession was associated with stock price increases only in larger firms, when the predecessor left the organization. The present study supported a negative size effect as well as a leader effect on stock price. However, Reinganum (1985) measured sized by stock market capitalization (price per share times number of shares outstanding). He found the price rise maintained at t+1 to t+5 days after the leader change. His findings regarding the sustained influence of leadership on stock price over time was supported in the present study despite the temporal differences and dissimilar size measures. This comparison raises more questions, specifically, under what circumstances does leader change and leader tenure enhance stock price, especially in firms of varying size, however measured.

The present findings support the longevity of the leader group and indirectly, the CEO. This upholds Beatty & Zajac's (1987) conclusion that CEO changes were associated with falling stock prices on the day of and days following the announcement of a leader change, regardless of his source. The opposite i.e., an increase in stock price was found on the day of and three days after the announcement of internal succession following the death of a CEO (Worrell & Davidson, 1987). These

researchers noted the connotation of stability and continuity with the insider CEO replacement. The present results also support the market's preference for stability evidenced by a positive association between group tenure and stock price.

As alluded to in the previous discussion of group and individual level leader effects, stock price fluctuations reflect the perceptions of stock traders, as proposed by Beatty & Zajac (1987). The present results support this belief. The leader variables were more significant predictors of stock price than profitability, and as mentioned, represent corporate personification through the leadership group. The use of an event time methodology by Beatty & Zajac (1987) and Worrell & Davidson (1987) underscore the sensitivity of the stock market to anticipated, actual and lagged leader related events. This was sustained in the present results by the significance of leadership predictors in all three models.

The present findings and prior research point to the need for further exploration. None of the studies reviewed considered the effects of organizational momentum or the effect of stock history beyond several days, in addition to the leader effects - how would this change their results? Under what circumstances do traders emphasize leader characteristics over the firm's previous stock price? Are the findings typical of larger companies? If so, why was the relationship between size, measured two ways, and stock price negative in the present study? Are larger firms perceived as inefficient or unexciting to speculators? Their very size attracts enough attention for the market to interpret their behavior before the company provides a rationale. Does this

widespread access to company information lead to conservatism and price drops? If so, why and under what conditions?

It can also be concluded that the leader group attributes studied, along with the firm's stock history create a perception of continuity and expertise, further enabling the company to gain access to capital markets and benefit from the perceived value of their stock. What should be investigated in future research is how these corporate leaders create stock price growth through the decisions originating from their group processes. Contrarily, established companies may maintain their stock price performance precisely because they have withstood the test of time and because their stocks have a reliable history. Although not supported by the succession studies cited above, this might be the case regardless of who is in the leader group as the succession effects dissipate over time.

These findings have some implication for the study of leadership as a whole, and succession in particular. First, leadership does have some influence on stock performance, but the nuance of this process requires further research attention. What criteria do industry experts, investors and banks use to evaluate a company's leadership? How relevant are they?

The succession literature might attain more cohesion if some study is made of the departing CEO's tenure; his replacement's tenure; the effect on total group tenure; and, circumstances surrounding incumbent retention. It would be useful to understand the dynamics of how group composition changes in response to a leader change, as well as how they vary with insider versus outsider succession. Additional succession

questions include whether career or noncareer CEOs are more likely to be replaced? What was the previous versus the new CEO's distance from the remainder of the group? What personnel changes resulted? How do the new personnel differ from the old?

The literature revealed leadership effects on stock price in the days immediately preceding and following succession. The present research disclosed long term effects over several years. Additional temporal frameworks in terms of days, months and years, in which the leader effect is operative should be investigated.

Furthermore, the present investigation of the effects of all possible previous stock price lags did not encompass instances of succession. It is possible that the high or low stock price for the year may have been a reaction of succession during that time.

The results of the present examination of stock price revealed none of the environmental, organizational and leader variables to be as significantly related as reported by Lieberson & O'Connor (1972) and Weiner & Mahoney (1981). However, of the variables investigated, environmental and organizational effects were less predictive of stock price than was the leader group's stability of tenure. This effect was more pronounced for stock price than profitability. Thus, the present findings suggest that leadership may be considered a perceptual phenomena constructed by stock market investors attempting to impose some sense around events related to organizational behavior.

Although there was a high percentage of explained variance in the lagged exogenous model, what can be concluded is that stock traders prefer continuity, and that the characteristics of the leader group and

not the individual were more predictive of stock price, a condition not considered in prior research.

CHAPTER 5

CONCLUSIONS

Comparison of Results for both Dependent Variables

The appropriate procedure after identification of the model which offered the greatest amount of explained variance i.e., the lagged endogenous model was to reduce the model. This was done for both dependent variables utilizing a backward elimination procedure, starting with all the predictors and removing them if the F test was not significant at the $p<.10$ criterion. The results of this procedure produced the same significant predictors as the regression procedure as reported in Tables 11 and 22. However, several problems occurred.

First, the results of the backward elimination procedure did not produce a model with a number of variables that approached Mallows Cp criterion, for each dependent variable for each year. In other words, (as could be predicted from the three existing models), there was no one model that would adequately summarize the data either by year or by dependent variable.

An alternative approach would be to explain the changes in explained variance or R^2 when each predictor is deleted from the equation. These are influenced by the order of removal from a regression equation. The proportional reduction in variance if a predictor is removed from the model (or the increase in the error term) can be calculated by the partial correlation coefficient:

$$Pr = \frac{R^2 - R^2_{(i)}}{1 - R^2_{(i)}}$$

(Norusis, 1985, p 39-40). (As such, the results in Tables 14, 23 and 25 do not total to the adjusted R^2.) These partial correlations appear in Table 14 for profitability and Table 23 for stock price. Table 25 compares the partial correlations of both dependent variables by year. Analysis of the summary Tables 13, 24 and 25 lead to the following conclusions:

The amount of variance explained by the model was different for each dependent variable. It was more useful in predicting stock price than profitability. The most likely reason is the greater susceptibility of stock price to nonfinancial, nonmeasurable factors. Stock prices are prone to the influence of rumors and perceptually related events, whereas profitability is measured less frequently and more objectively. This may be the reason why succession researchers choose stock price as a dependent variable. Daily prices records before and after the succession event are more sensitive indicators of reaction to leader change than quarterly or annually reported figures. Which predictors are most functional for a particular dependent variable should receive more further attention in future research.

Both dependent variables were subjected to the effects of time. Inspection of all the models for each dependent variable revealed the direction and significance of the effect of each independent variable, especially the environmental and organizational, varied with the year in question.

The effects of the independent variables within each year deviated with each dependent variable. Industry GNP which was positive and significant for 1982 profitability, showed a negative sign for stock

price. Such isolated findings and directional changes may be due to the relationship of the predictors to the dependent variables. They may also be a function of the structure of the data, as well as the probability of a Type II error given the number of analyses performed. The changes across years may also result from environmental conditions that were not included in the analysis. They become encompassed in the error term, which influences the stability of the beta coefficients. As was indicated in the profitability section, further attention must be given to the selection and measurement of global and specific factors that influence all types of business in our economy.

Although the correlation coefficients in Tables 3 and 4 did not indicate substantial multicollinearity, it is a recurrent problem when utilizing financial data. It is possible some of the sign changes and random significance may have been caused by undetected multicollineary.

Despite some increase for stock price, the explained variance for each dependent variable did not increase exceptionally when the independent variables were lagged. This, taken the with positive group tenure effect suggests that organizational characteristics including executive personnel, do not change dramatically over time. If this is so, then sign changes for some of the predictors in relation to the dependent variables may reflect the impact of economic conditions not included in the model, or may be random.

Conclusions Across Both Dependent Variables

Group stability of tenure as well as the previous year's Y value of the dependent variable offered the greatest proportion change in explained variance for both models (see Table 25). The partial

correlation coefficients as well as the beta weights were always highest for the Y lag and then tenure stability. Significant beta weights for both predictors were found for stock price and profitability during the recessionary years of 1981 and 1982, indicating the importance of both leadership and organizational factors during critical economic conditions.

The individual level leader variables were not as important as the group level leader variables for both stock price and profitability. It appears that an individual level unit of analysis i.e., the CEO/President, may be insufficient in predicting organizational level outcomes, however convenient a target. Their greater salience in the stock price results points to investor perceptions of the organization as "human" rather than an incomprehensible monolith. Further analysis of the leader effect should be studied from the perspective of how the combined influence of group composition and change regulates organizational outcomes.

Pfeffer (1983) theoretically sketched, and the succession literature demonstrated, the power of a cohort group. When a leader changes, the new leader brings in loyal supporters into his new constellation. If the new leader was an outsider, more outsiders eventually joined the group. Such a cohort has short average company tenure. The present findings revealed the sample companies benefitted from the increased experience and social processes of longer tenured cohort groups. This suggests either no succession or insider succession is preferable.

The slight yearly changes in organizational characteristics also denotes an evolution towards organizational adaptation, almost imperceptible at times. Leaders as systems monitors should continually canvass the organizational environment. They can then make any corresponding changes necessary to keep the organization aligned with environmental demands. Such an approach corrects problems before they become crises, suggests opportunities for new business undertakings, aborts projects that inconsistent with the environment, and sets in motion appropriate information gathering and decision making.

Based on the preceding, the findings for both variables support the organizational benefits of tenure as well as the management and development of cohorts to foster growth into leadership positions. However, the effects of insularity varied. The stock price results suggested that stockholders and other important constituency groups preferred the stability of career personnel. This belief was not supported in the profitability performance measure, which revealed the companies in the present sample gained from the diversity of experiences brought into the group by noncareer managers. The present results upheld the influence of a cohort group of tenured leaders as well as organizational momentum on organizational performance.

The Leadership Role in the Organizational Life Cycle

Owner-managers were prevalent among smaller companies in the sample. Some contend that this ownership power diminishes as the size and age of the company grows, until there is a separation of ownership and control (see Burch, 1973; Larner, 1975; Mizruchi, 1983 for a fuller treatment of this phenomena). A competent leader with vision and

charisma would be essential to the creation and early growth of the company. As it reached a size large enough to gain access to capital markets, others gained control through their place on the corporation's board of directors and/or control over voting shares. Once the organization achieves a "critical mass" of performance outcomes, these outside owners, rather than serve as constraints on management, become benign. As long as the company demonstrates satisfactory performance, i.e., posts an acceptable level of profitability, maintains its stock price and pays dividends, it is more favorably viewed by potential owners and lenders. Thus, it can more readily gain capital to finance continued growth and expansion when deemed necessary.

At this point, the organization has attained its own momentum, in which leaders become system maintainers rather than system creators. Insofar as there are incremental performance gains or recoveries with decline, there is little need to change leaders.

As long as the executive team monitors the system and makes changes when appropriate, the organization should anticipate and prevent any potential life threatening crises. Succession may take place if the present management team cannot or will not switch their decision making mode from systems maintainers to systems controllers, or if this transition is made after too much deliberation, putting the company at greater risk.

The bold innovative risk takers that created the company may again be necessary when the system has strayed too far off course or organizational survival is threatened. Once it is righted, systems maintenance may be all that is required.

The use of this description as a guide to the study of organizations might lead to the description of these patterns and the prediction of such macro and micro outcomes as organizational growth, demise, downsizing, executive level succession, and human resource decisions.

Limitations of the Present Study

In view of the above discussion, the following limitations are noted.

One problem with time series data is serial correlation. Attempts to control the bias inherent in this situation through the use of yearly partitions increases the likelihood of a Type II error, which occurs when multiple analyses are used. This would explain the isolated significant betas as well as some of the sign changes.

The results are of limited generalizability due to attrition of firms significantly different from the companies retained for study. Not all sample companies were studied for the entire ten year time period due to corporate changes and data unavailability.

It is essential that time factors such as business cycles be recognized. If less than one business cycle is studied, the results accruing from some environment conditions may be overlooked, or their effects attributed to other factors. How some of the sample companies would fare under these circumstances would not be known if data did not exist beyond a certain date. Such findings are not generalizable but would be particular to the companies and years surveyed.

The use of secondary data does not allow for the study of moderating variables such as the effects of group dynamics. It was

impossible to measure the intervening variables such as group processes and the attitudes of group members. This is a continual problem, since many corporate executives limit their accessibility to researchers. Furthermore, network analysis is compromised when all network members are not included in the data analysis. If primary data collection was attempted and if some corporate leaders chose not to answer questionnaires, the study of their network properties would be compromised.

Some of the variables as defined do not easily lend themselves to secondary analysis. The prominent star variable is one example. Different effects for this concept might emerge if corporate and industry leaders as well as business students were asked to nominate corporate executives they would consider stars, based upon some acknowledged criteria.

A major limitation of the present study is that it has done little to elucidate the circularity of the performance - tenure relationship. Have the "leaders" in the present study merely been administrators of an already effectively running system? If so, their tenure reflects nothing of their leadership capabilities. Such ability might be best studied during crisis periods (Schein, 1985). Dramatic fluctuations in the performance variables and corresponding executive behavior in the present sample were not examined.

This comment points to a serious question. What phenomenon has the present study examined? Has it really addressed leadership? For that matter, have any of the studies reviewed actually explored "leadership" or routine administration?

The disparate results for the two dependent variables uphold Beatty & Zajac's (1987) distinction between leader and managerial effects. Profitability is a more objective assessment of executive competence. However, some managerial decisions regarding purchasing other unprofitable companies to turn around, for tax purposes and decisions regarding retained earning and distribution of profits to stockholders are less objectively assessed. They all influence the bottom line. These types of concerns are part of administrative management and do not necessarily reflect "leadership" in an motivational sense.

Due to the better fit of the endogenous model for stock price, it appears that leadership in the sample firms was determined by the attributions of those outside the company. As Yukl (1989) observed, however, the attribution of leadership by others in our society (e.g., the acclaim given sports figures, rock stars and the like) does not necessarily mean the individual in question is truly a leader in the transactional sense of the word.

What have we studied? Leadership and management denote conceptual differences. Yet, the literature uses them interchangeably. Perhaps this is due to the admittedly vexing question of how to conceptualize and measure leadership. The present study, as well as almost all those involving corporate samples, examine companies large enough to meet the various stock exchange requirements. The organization has already passed survival hurdles. The new or existing executives need merely to discharge their duties by setting and following policies, procedures and rules with little discretion.

Any performance changes which might be likened to a statistical regression towards the mean will be attributed to the highest ranked executive. If performance is average or above, he remains in his position. If it falls below, he is ousted, barring any ownership constraints. He becomes a scapegoat.

Current thoughts about leadership focus on transformational processes. A transformational leader utilizes his social influence to elevate himself and his followers to a greater level, orients them to a vision and superordinate goals, and generates a shared ideology (Bass, 1985; Burns, 1978; in Yukl, 1989). Often, political leaders are used as examples of transformational leadership, but anecdotes exist in the business press. Unfortunately, they have not been systematically studied.

A recent case analysis of eight CEO and executive vice presidents of Fortune 500 companies offers an illustration of transactional leadership in organizations. Several examples were offered of how these corporate executives implement their leadership through the empowering process. This involved increased power sharing and enhancing feelings of power among group members (Conger, 1989). It is reasonable, then, to assume transactional leaders empower others.

It was demonstrated that empowering strategies involve provision of a positive social atmosphere, reward of group members, expression of confidence in members abilities and the encouragement of initiative and responsibility. The empowering leader instituted change by building on small successes (Conger, 1989).

It is possible to infer, based on the above description, that the social structure of the leader groups in the sample firms fostered the empowering process. First of all, the individual leader characteristics, including his tenure, were never as important as group tenure. Thus, the individual leader attained effectiveness through his group Group tenure would not be as long and show a positive impact on performance if the group members had not received social support and emotional satisfaction from their membership. Similarly, if group members did not share a vision, or if the group conflict became too divisive, turnover would result and group tenure would be lower. The positive effect of group tenure on performance would not have emerged.

If organizational executives did not create the cultures and structures that consider human resource needs and group relations, employees would not be interested in spending a career lifetime with the firm. High ranking leaders set the stage for organizational processes that might encourage or inhibit the empowering process and transactional leadership, which can exist at any level of the organization. It is unlikely a tenured executive would assume a vice presidential or presidential role and suddenly become interested in empowering his group members, if such an orientation had not been developed in his prior organizational experiences.

Furthermore, the incremental effects of prior performance for both dependent variable allude to the smaller successes that establish change as described by Conger (1989). The prior performance result therefore, is not only attributable to organizational self "momentum." It is also plausible that it reflects a deliberate construction of smaller changes

only evident in the short run but contributing to the overall survival and well-being of the organization. Perhaps this is best done through smaller, less obvious decisions and behavior. As human beings, we are more intrigued by organizational change in a sensational fashion. True leadership as described above, may actually be more self-effacing and shared, at least on the organizational level.

Attention to group relations and shared influence is evident in the negative relationship for inequality. The present results imply that the empowering process is more likely to occur in a cohort and that overall, the impact is favorable to the individual group members as well as the organization.

There is, of course, a limitation to which individual level inferences can be drawn from secondary analysis of social structure. Leadership can exist at any organizational level. Further attention to individual satisfaction with group membership and group interaction through primary data analysis should be coupled with analysis of the social structure of the group. If this is accomplished for samples at varying organizational levels, inferences can be made to top management which are generally less accessible to researchers.

Concluding Comments

At this point, based on the above discussion, evidence does exist for the "leader effect" in the present data.

The overall impression of this researcher is that those who study organizations from a behavioral perspective have unnecessarily limited their study of leader effects to financial performance. This began with earlier studies, whose authors may have legitimatized their interest in

business organizations by restricting their dependent variables to financial performance outcomes.

Since the present study has demonstrated differential effects of independent variables on financial performance, perhaps it is time for reassessment of the dependent variables investigated. It might be helpful to investigate which independent variables are greater predictors of other nonfinancial performance measures. Some outcomes of leader and organizational factors would be the ability to attract human resources, customer satisfaction and social responsibility.

Some other areas that might be studied would be the effect of leader change or retention in upper levels on turnover, job satisfaction, commitment, morale and productivity, on various levels throughout the organization. This approach, coupled with measurement of financial performance outcomes might help us establish the linkage between the people in the organization and organizational performance. This has been touted in the popular press - Peters & Waterman (1982) "productivity through people" is most obvious - but as of yet, more needs to be done to assess this relationship.

We should move beyond an "either or" approach in determining the causes of organizational outcomes. From a systems perspective, the prior performance of a firm provides leaders with the necessary feedback they need to attain or maintain equilibrium. Attempts to segment various environmental effects, company characteristics or company momentum without acknowledging the interrelationship of all system components unnecessarily constrains our understanding of the richness of organizational phenomena.

Therefore, researchers interested in leadership may find qualitative research to be a more fruitful inquiry than quantitative analysis. Due to the sample size requirements, it is difficult to isolate industry-specific characteristics. Yet, studying one industry leads to a sampling problem. If there are enough companies in one industry to warrant our usual statistical analysis (i.e., N>30), chances are many of the companies are not public, inhibiting data availability. Corporate identities change through merger, acquisition or bankruptcy. This volatility limits the availability of companies for the requisite number of years necessary to comprise a reasonable time series. Qualitative research of a few companies in the same industry is a viable alternative from which we may be better able to document the leader effect.

Hopefully, a discussion of the limitations of the present study will encourage researchers to integrate the opposing camps of organizational momentum versus leadership influence both conceptually and empirically, as well as to employ various methodologies to disclose the conditions under which leadership and/or the past history of the organization is most salient.

TABLE 1
Distribution of Sample Firms Based on Size

Dollar Value of Assets	Percent of Sample
250,000 - 499,999	0.2
500,000 - 999,999	0.6
1,000,000 - 4,999.999	6.9
5,000,000 - 9,999,999	5.0
10,000,000 - 24,999,999	8.2
25,000,000 - 49,999,999	10.5
50,000,000 - 99,999,999	12.3
100,000,000 - 240,999,999	18.1
Over 250,000,000	38.3

Number of Employees	Percent of Sample
0 - 20	2.4
21 - 99	7.7
100 - 499	17.7
500 - 999	15.5
1000 - 10,000	38.7
10,001 - 100,000	15.2
100,001 - 500,000	1.7
over 500,000	1.1

TABLE 2

Descriptive Statistics By Variable

Independent Variable Name	N	Mean	S.D.
Firm Age	899	44.59	29.02
Industry GNP	946	83.08	86.04
Industry Concentration	941	.38	.24
Number of Employees	946	18,694.00	85,844.00
$ Assets	946	2.8204 E+09	1.2467 E+10
Capital Technology	946	4.0342 E+05	1.4983 E+06
Administrative Technology	946	1.7855 E+04	1.9352 E+04
Outside Ownership	917	8.72	13.67
Inside Ownership	922	22.41	20.44
Stability-Average Group Tenure	946	13.48	7.59
Standard Deviation Group Tenure	946	7.87	5.07
Inequality	946	32.36	31.86
Insularity	946	.09	.17
CEO Bridge	946	9.58	7.57
Gatekeeper	924	1.39	2.17
Star-Positive Citations	944	1.37	5.50
Dependent Variable Name			
Mid Range Stock Price	941	19.42	23.17
Profitability	946	.04	.12

TABLE 3
INTERCORRELATION MATRIX OF INDEPENDENT VARIABLES

	NATL GNP	NY SE	FIRM AGE	IND GNP	IND CON	$ ASSETS	# EMP	CAPT TECH	ADM TECH
NATLGNP									
NYSE	.93***								
FIRM AGE	.04	.04							
INDGNP	.06	.05	.48***						
INDCON	-.00	-.00	.05	-.12***					
ASSETS	.06	.06	.02	-.08**	.02				
#EMPLOY	.00	.00	.08*	-.06	.22***	.41***			
CAPT TECH	.06	.04	.06	.19***	-.18***	.11	-.04		
ADM TECH	.29***	.27***	-.02	.10*	-.07*	.01	-.11**	.29***	
OUTOWN	.07*	.07*	-.03	.03	.04	-.11***	-.11***	.12***	-.06*
INOWN	.04	.03	.00	.15***	-.02	-.22***	-.20***	-.12***	-.01
STABILITY (avTEN)	.00	-.00	.13***	-.12	.08	.31***	.37***	-.09**	-.12**
STABILITY (sdTEN)	.09**	.09**	.13***	.02	-.00	.07*	-.00	-.11***	-.03
INSULAR	-.07*	-.07*	.06	-.02	.11***	.20***	.35***	-.06*	-.10**
INEQUALIT	.07*	.08*	.16***	-.15***	.11***	.06	.08**	-.08**	.02
BRIDGE	.10**	.09**	.06	.01	.07*	-.04	-.09**	-.07*	.03
GATE KEEPER	.09**	.07*	.08**	.08*	.07*	-.11	-.03	.27***	.34***
+STAR	.21***	.20***	.07*	.21***	.06	-.10**	.09*	.22***	.22***

*** = p<.001
** = p<.01
* = p<.05

TABLE 3 (Continued)

	OUT OWN	IN OWN	STABIL (avIEN)	STABIL (sdIEN)	INSUL	INEQUAL	BRIDGE	GATE
NATLGNP								
NYSE								
FIRM AGE								
INDGNP								
INDCON								
ASSETS								
#EMPLOYEES								
CAPT.TECH.								
ADM.TECH.								
OUTOWN								
INOWN	-.06							
STABILITY (avIEN)	-.04	-.13***						
STABILITY (sdIEN)	.00	.06	.51***					
INSULARITY	.00	-.02	.65***	.37***				
INEQUALITY	-.11***	-.18***	.34***	.45***	.17***			
BRIDGE	.05	.03	.16***	.58***	.12***	.47***		
GATEKEEPER	-.07*	-.16***	.17***	.04	.13***	.22***	.00	
+STAR	-.17***	-.20***	.14***	.05	.05	.23***	-.00	.27***

*** = p<.001
** = p<.01
* = p<.05

TABLE 4

Pearson Correlations of Independent Variables with Dependent Variables (N=946)

Independent Variable	Dependent Variable	
	Stock Price	Profitability
National GNP	.05	-.16***
N.Y.S.E.	.04	-.15***
Firm Age	.08*	-.05
Ind. GNP	-.17***	-.03
Ind. Con.	.11	.02
$Assets	.13***	-.03
# Employees	.26***	.04
Capt. Tech.	.01	-.02
Adm. Tech.	-.10	-.08**
Outown	.08**	.04
Inown	-.24***	.06
Stability (Avgrp Tenure)	.43***	.14***
Stability (Sdgrp Tenure)	.04	.04
Insularity	.33***	.10**
Inequality	.14***	.03
CEO Bridge	.03	.00
Gatekeeper	.20***	-.04
CEO + Star	.11***	-.00

*** = p<.001 ** = p<.01 * = p<.05

TABLE 5
Principal Components Analysis of
Independent Variables
(N=946)

	COMPONENT 1	COMPONENT 2	COMPONENT 3	COMPONENT 4	COMPONENT 5
% Variance Explained	20.55	12.49	11.87	7.93	6.61
Total = 59.45% Eigenvalue	3.70	2.25	2.14	1.43	1.19
Component Loadings					
Firm Age	.65346*	.00230	-.07297	-.08807	-.28114
N.Y.S.E.	.18045	.85975*	.19147	-.24921	.20984
National GNP	.18028	.86793*	.19355	-.23979	.20796
Ind. GNP	-.19126	.28404	-.17494	.52881*	.27946
Ind. Con.	.17122	-.20067	.09021	-.42369*	.32446
#Employees	.45063*	-.26633	.56050*	.04669	.29231
$Assets	.37554	-.08702	.56597*	.21993	.07548
Capt. Tech.	-.17496	.24593	.21225	.71035*	-.09666
Adm. Tech.	-.08132	.52294*	.13633	.25014	-.17807
Outown	-.07830	.11832	-.18515	.21114	.27549
Inown	-.19449	.09670	-.38892	-.21624	.42535*
Avgrp Tenure	.79625*	-.17846	-.00914	.16238	.22445
Sdgrp Tenure	.72479*	.14391	-.52677*	.13251	-.00607
Avgrp Dist Entry Date	.75385*	.07995	-.22869	-.03613	-.34127
Career Mgrs	.61181*	-.25499	-.02364	.23350	.45648*
CEO Dist Entry Date	.61252*	.20334	-.56121*	.06058	-.10893
Contacts	.35795	-.02607	.52118*	.03316	-.08919
Cites	.33368	.18044	.46579*	-.16495	-.23552

* = factor loading > .40

TABLE 6
Profitability Results
Pooled Sample and Yearly Breakdowns

	Total Sample	1976	1977	1978	1979	1980
	N=857	n=81	n=83	n=85	n=88	n=92
Adj R^2	.06****	-.14	.07	-.04	-.02	-.08
Variable	Standardized Parameter Estimate					
Firm Age	-.0511[1]					
Ind. GNP						
Ind. Con.						
#Employees						
$Assets						
Capt.Tech						
Adm.Tech.						
Outown	.0643[1]					
Inown	.0966**		.5049***			
Stability (AvTenure)	.2557****			.5852**	.5016*	.4343*
Stability (SDTenure)			-.4766*			
Inequality						
Insularity						
CEO Bridge						
Gatekeeper	-.0625[1]					
+Star						
Autocorr.	.41	-.00	.04	.11	.05	.07

[a]Sign of standardized Beta coefficient. Actual Beta weight values stated only for those significant at p<.10 or better.

1 = p<.10 *** = p<.001 ** = p<.01

TABLE 6 (Continued)
Profitability Results - No Lags
Total Sample and Yearly Breakdowns

	1981	1982	1983	1984	1985
Adj R^2	-.09	.16*	.03	.02	-.04
Variable		Standardized Parameter Estimates			
Firm Age		-.2698[1]			
Ind. GNP		.2344*			
Ind. Con.					
#Employees					
$Assets					
Capt.Tech.					
Adm.Tech.					
Outown		.2095[1]			
Inown			.2009[1]		
Stability (Avten)	.3961*	.5939***	.4644**		
Stability (SDten)					
Inequality					
Insularity			-.2705[1]		-.2657[1]
CEO Bridge					
Gatekeeper					
+Star				.2382[1]	
Autocorr.	.03	.01	-.05	.08	-.08

1 = p<.10 * = p<.05 ** = p<.01 *** = p<.001 **** = p<.0001

TABLE 7
Profitability - Lagged Effect of 1976
on 1977 1978 1980 1981 1982

	1977 (t+1) n=81	1978 (t+2) n=80	1980 (t+4) n=81	1981 (t+5) n=80	1982 (t+6) n=76
Adj R^2	-.03	-.05	-.12	-.05	-.06
Variable	Standardized Parameter Estimates				
Firm Age					
Ind. GNP				-.2277[1]	.2802*
Ind. Con.					
#Employees					
$Assets					
Capt.Tech.					
Adm.Tech.					
Outown					-.3045*
Inown	.3259*				
Stability (AvTenure)		.4685[1]		.4412[1]	.6214**
Stability (SDTenure)					-.5806*
Inequality				-.4337*	
Insularity					
CEO Bridge					
Gatekeeper					
+Star					

1 = p<.10 *** = p<.001
* = p<.05 **** = p<.0001
** = p<.01

TABLE 8
Profitability Lagged Effect of 1977
on 1978 1979 1980 1981 1982

	1978 (t+1) n=82	1979 (t+2) n=82	1980 (t+3) n=83	1981 (t+4) n=82	1982 (t+5) n=78
Adj R^2	-.12	-.10	-.15	-.04	-.03
Variable	Standardized Parameter Estimates				
Firm Age					
Ind. GNP				-.3072*	.2354[1]
Ind. Con.					
#Employees					
$Assets					
Capt.Tech.					
Adm.Tech.					
Outown		-.2153[1]			
Inown					
Stability (AvTenure)	.4131[1]				.6126**
Stability (SDTenure)					-.7892**
Inequality			-.3860*		
Insularity					
CEO Bridge					
Gatekeeper					
+Star					

1 = p<.10 *** = p<.001
* = p<.05 **** = p<.0001
** = p<.01

TABLE 9
Profitability Lagged Effects of 1980
for 1981 1982 1983 1985

	1981 (t+1) n=91	1982 (t+2) n=86	1983 (t+3) n=85	1985 (t+5) n=77
Adj R^2	.01	.08	.03	-.02
Variable Name	Parameter Estimates			
Firm Age		-.2492[1]	-.3119[1]	
Ind. GNP	-.0003[1]	.0002[1]		
Ind. Con.				
#Employees				
$Assets				
Capt.Tech.				
Adm.Tech.				
Outown		.2670*	.2237[1]	
Inown				
Stability AvgrpTenure	.5477**	.6789***	.6314**	.4873*
Stability SDgrpTenure				
Inequality				
Insularity			.3709*	-.5060**
CEO Bridge				
Gatekeeper				
Star				

1 = p<.10 *** = p<.001
* = p<.05 **** = p<.0001
** = p<.01

TABLE 10

Profitability Lagged Effects of 1982
on 1983 1984 1985

	1983 (t+1) n=85	1984 (t+2) n=83	1985 (t+3) n=78
Adj R^2	-.02	-.05	-.14
Variable			
Firm Age	-.2887[1]		
Ind. GNP		.2309[1]	
Ind. Con.		.2164[1]	
#Employees			
$Assets			
Capt.Tech.			
Adm.Tech.			
Outown			
Inown			
Stability (AvTenure)	.5383**	.3895[1]	
Stability (SDTenure)			
Inequality			
Insularity	-.2739[1]		
CEO Bridge			
Gatekeeper			
+Star			

1 = p<.10 *** = p<.001
* = p<.05 **** = p<.0001
** = p<.01

TABLE 11
Profitability Results - Lagged Endogenous Model by Year

	1977 n=81	1978 n=82	1979 n=88	1980 n=90	1981 n=91
Adj R^2	.31***	.11[1]	.05	.41****	.33****
Variable Name	**Standardized Parameter Estimate**				
Firm Age					
Ind. GNP					.2565**
Ind. Con.					
#Employees					
$Assets					
Capt.Tech					
Adm.Tech.					
Outown					
Inown	.4627****				
Stability (AvTenure)		.4939*	.4241*		.3035*
Stability (SDTenure)	-.4224[1]				
Inequality					
Insularity					
CEO Bridge					
Gatekeeper					
+Star					
T-1	.4873****	.4305***	.2876**	.7094****	.6150****
Durbin -Watson	1.96	1.78	1.96	2.12	2.03
Durbin's h/ T	1.15	1.27	t=.202n.s.	-.70	.56
Auto r	.01	.11	.01	-.07	-.04

TABLE 11 continued

	1982 n=88	1983 n=84	1984 n=82	1985 n=79
Adj. R^2	.38***	.44****	.18*	.30***
Variable Name	**Standardized Parameter Estimates**			
Firm Age	-.2068[1]			
Ind. GNP	.3167***			
Ind. Con.				
#Employees				
$Assets				
Capt. Tech.				
Adm. Tech.				
Outown				
Inown		.1860*		
Stability (AvTenure)	.3798**			
Stability (SDTenure)		.3312[1]		
Inequality				
Insularity		-.2003[1]	.3102*	
CEO Bridge	-.2866[1]			
Gatekeeper			-.2074[1]	
+Star			.2388[1]	
T-1	.5254****	.6715****	.4297***	.5771****
Durbin-Watson	2.09	2.21	1.97	2.01
Durbin h/ T	.90	1.32	.29	t=.012 n.s
Auto r	-.05	-.14	.01	-.00

1 = p < .10 * = p < .05 ** = p < .01 *** = p < .001 **** = p < .0001

TABLE 12
Profitability Regression Results - Lagged Endogenous Model
Omission of Average Group Tenure
and Standard Deviation of Group Tenure

	1977	1978	1979	1980	1981	1982	1983	1984	1985
N=	81	82	88	90	91	88	84	82	79
Adj R^2	.28***	.09[1]	.02	.41****	.32***	.29****	.43****	.19*	.30***
Variable	Standardized Parameter Estimates								
Firm Age									
Ind. GNP					-.1047**	.2924**			
Ind. Con.									
#Employees									
$Assets									
Capt.Tech.									
Adm.Tech.									
Outown									
Inown	.3856***						.1827*		
Inequality									
Entry Date									
Gatekeeper									
+Star								.[2]1691	
T-1	.5041 ****	.4258 ***	.3351 **	.7082 ****	.3881 ****	.5481 ****	.4811 ****	.3952 ***	.5910 ****

1 = p<.10 *** = p<.001
* = p<.05 **** = p<.0001
** = p<.01

TABLE 13

Profitability - Summary of Significant Results in All Models

Variable	Cross Sectional	Lagged Exogenous	Lagged Endogenous
Group Level			
Inequality	n.s	1976--1981 1977--1981	n.s.
Insularity	supported 1983 1985	1980--83,85 1982--83	supported 1983 opposite 1984
Stability	opposite 1979-1983	1976--78,81,82 1977--78,82 1980--81 to 85 1982--83, 84 opposite	supported 78-79 supported 81-82 opposite
Individual Level			
Prominent Star	n.s.	n.s.	1984
Gatekeeper	n.s.	n.s.	1984
Individual-Group Level			
Bridge	n.s.	n.s. 1980--81-83 1982--83	1982 supported opposite 1985

TABLE 14
Profitability Results - Partial Correlation Coefficients
Lagged Endogenous Model

	1977 n=81	1978 n=82	1979 n=88	1980 n=90	1981 n=91
Adj R^2	.31***	.11[1]	.05	.41****	.33****
Variable Name	Partial Correlation - Type II SS				
Firm Age	.00	.00	.00	-.00	-.00
Ind. GNP.	-.01	-.01	-.00	-.00	-.08**
Ind. Con.	.00	-.01	.02	-.01	.00
#Employees	-.00	.00	-.00	-.01	.00
$Assets	.00	-.03	-.01	-.00	-.00
Capt.Tech	.00	.00	.02	-.00	.00
Adm.Tech.	+.00	-.01	-.00	.00	.03
Outown	-.00	.00	-.01	-.01	.01
Inown	.21**	.01	.02	.01	.01
Stability (AvTenure)	.00	.07*	.06*	.00	.05*
Stability (SDTenure)	-.05[1]	-.02	-.00	-.03	-.00
Inequality Entry Date	.01	-.02	-.01	.00	-.02
Insularity	.01	-.01	-.01	.01	-.03
CEO Bridge	.02	.02	.01	.00	.00
Gatekeeper	.00	.00	-.00	.00	.00
+Star	.00	.01	-.01	-.02	.00
T-1	.28****	.19***	.09**	.46****	.39****

[1] Beta significant at p<.10
* Beta significant at p<.05
** Beta significant at p<.01
*** Beta significant at p<.001
****Beta significant at p<.0001

TABLE 14 continued
Profitability Results - Partial Correlation Coefficients
Lagged Endogenous Model

	1982	1983	1984	1985
Adj R^2	.38***	.44****	.18*	.30***
Variable Name	**Partial Correlation - Type II SS**			
Firm Age	-.04[1]	.01	-.00	.00
Ind. GNP.	.14***	-.01	.01	-.00
Ind. Con.	-.00	-.00	.01	-.00
#Employees	.00	.02	-.00	.00
$Assets	-.01	-.00	.00	.00
Capt.Tech	-.00	.00	.00	.00
Adm.Tech.	-.01	-.00	.01	-.03
Outown	.03	-.00	.01	.00
Inown	-.00	.06*	.00	-.00
Stability (AvTenure)	.09**	.00	-.00	-.01
Stability (SDTenure)	.03	.05[1]	-.01	.01
Inequality Entry Date	.03	-.00	.00	-.00
Insularity	-.02	-.04[1]	.06*	-.00
CEO Bridge	-.04[1]	-.01	.00	.00
Gatekeeper	-.00	-.00	-.05[1]	-.01
+Star	-.01	.01	.06*	.01
T-1	.31****	.43****	.19***	.33****

[1] Beta significant at p<.10
* Beta significant at p<.05
** Beta significant at p<.01
*** Beta significant at p<.001

TABLE 15
Profitability Results - One Year Lags
Average CEO Distance from Group Members
Omission of Leader Group Variables

	1977	1978	1979	1980	1981	1982	1983	1984	1985
N=	81	82	88	90	91	88	84	82	79
Adj R^2	.29***	.09[1]	.04	.42****	.33****	.27***	.44****	.16*	.32***
Variable	Standardized Parameter Estimates								
Firm Age									
Ind. GNP					-.2899**	.2862*			
Ind. Con.									
#Employees									
$Assets									
Capt.Tech.									
Adm.Tech.									
Outown									
Inown	.3775***						.1756*		
CEO Bridge									
Gatekeeper									
+Star								.2338*	
T-1	.5040 ****	.4289 ***	.3267 **	.7145 ****	.6175 ****	.5564 ****	.6915 ****	.4115 ***	.5902 ****
Durbin Watson	1.87	1.96	1.90	2.11	2.02	2.17	2.10	2.15	2.00
Auto r	.07	.01	.05	-.05	-.02	-.09	-.08	-.07	.01

1 = p<.10 *** = p<.001
* = p<.05 **** = p<.0001
** = p<.01

TABLE 17
Stock Price Results
Total Sample and Yearly Breakdowns

	Total Sample N=852	1976 n=81	1977 n=83	1978 n=84	1979 n=87	1980 n=91
Adj R^2	.35****	.41****	.47****	.42****	.43****	.31****
Variable	Standardized Parameter Estimates					
Firm Age	.1633****	.2425*	.2337[1]	.2032[1]	.2492*	
Ind. GNP	-.0982****					
Ind. Con.	.0595[1]					.8587[1]
#Employees			-.3002	-.2909*	-.2846*	
$Assets	.0805**			-.2751*	-.2016*	
Capt.Tech	.0805**					
Adm.Tech.	-.0790*					
Outown	.0484*					
Inown	-.1382****					-.2161*
Stability (AvTenure)	.4977****	.7418***	.7295****	.7032****	.6637****	.4179***
Stability (SDTenure)	-.5001****	-.6633***	-.7644****	-.7960****	-.6383***	-.3728*
Tenure						
Inequality Entry Date	-.1247**	-.3379*	-.3482*	-.3071*	-.2547*	-.2455[1]
Insularity	.1652***		.2265[1]	.3302*	.2987*	
CEO Bridge	.2613****	.4500*	.4645*	.4439*	.2944*	
Gatekeeper	.0836**	.2352[1]	.2107[1]			.2563*
+Star						
Autocorr	.72	-.19	-.09	-.11	.01	.17

1 = p<.10 **** = p<.0001
* = p<.05 *** = p<.001
** = p<.01

TABLE 17 (Continued)
Stock Price Results
Total Sample and Yearly Breakdowns

	1981 n=91	1982 n=87	1983 n=85	1984 n=84	1985 n=79
Adj R^2	.27***	.32****	.16*	.23**	.21**
Variable	**Standardized Parameter Estimates**				
Firm Age	.2008[1]				
Ind. GNP	-.1775[1]		-.1927[1]		
Ind. Con.					
#Employees				.2594[1]	
$Assets					
Capt.Tech.					
Adm.Tech.				-.2017[1]	
Outown					
Inown	-.1710[1]	-.1898[1]			
Stability (AvTenure)	.3500*	.4835***	.4242**	.5233**	.5126**
Stability (SDTenure)	-.5637**	-.4715*		-.4848*	-.3932[1]
Inequality					
Insularity	.2877*				
CEO Bridge	.2822[1]	.3035[1]			
Gatekeeper					
Star					
Autocorr.	.04	.09	.17	.26	.18

1 = p<.10 **** = p<.0001
* = p<.05 *** = p<.001
** = p<.01

TABLE 18
Stock Price - Lagged Effect of 1976 Predictors
on 1977 1978 1980 1981 1982 Stock Price

	1977 (t+1) n=81	1978 (t+2) n=79	1980 (t+4) n=80	1981 (t+5) n=79	1982 (t+6) n=76
Adj R^2	.40****	.35****	.18*	.23**	.31***
Variable	Standardized Parameter Estimate				
Firm Age	.2670*	.2272*		.2970*	
Ind. GNP					
Ind. Con.					
#Employees	-.2641[1]	-.3655*			
$Assets					
Capt.Tech.					
Adm.Tech.					
Outown					
Inown			-.2286[1]		
Stability (AvTenure)	.8384****	.8863****	.5071[1]	.6838**	.8411***
Stability (SDTenure)	-.7495***	-.7488**	-.4449[1]	-.5679*	-.7384**
Inequality	-.4100**	-.4519**		-.3487*	-.3129[1]
Insularity					
CEO Bridge	.4754*	.4418*			.4252[1]
Gatekeeper					
+Star					

1 = p<.10 *** = p<.001
* = p<.05 **** = p<.0001
** = p<.01

TABLE 19
Stock Price Lagged Effect of 1977 Independent Variables
on 1978 1979 1980 1981 1982 Stock Price

	1978 (t+1) n=82	1979 (t+2) n=82	1980 (t+3) n=83	1981 (t+4) n=82	1982 (t+5) n=78
Adj R^2	.43****	.42****	.25**	.30***	.35****
Variable	Standardized Parameter Estimate				
Firm Age				.2727*	
Ind. GNP					-.1836[1]
Ind. Con.					
#Employees	-.4155**	-.4631*		-.2761[1]	-.3183[1]
$Assets					
Capt.Tech.					
Adm.Tech.					
Outown					
Inown			-.2075[1]		
Stability (AvTenure)	.7467****	.7387****	.4917*	.6203**	.7753***
Stability (SDTenure)	-.7885***	-.8027***	-.5566*	-.6544**	-.7121**
Inequality Entry Date	-.3839**	-.3847*	-.3347*	-.3899*	-.3531
Insularity	.3038*	.3375*			
CEO Bridge	.4621*	.4495*	.3939[1]	.3782[1]	.4242*
Gatekeeper		.2207[1]			
+Star					

1 = p<.10 *** = p<.001
* = p<.05 **** = p<.0001
** = p<.01

TABLE 20
Stock Price Lagged Effects of 1980 Independent Variables
on 1981 1982 1983 1985 Dependent Variables

	1981 (t+1) n=90	1982 (t+2) n=85	1983 (t+3) n=35	1985 (t+5) n=77
Adj R^2	.33****	.38****	.36****	.26**
Variable	Standardized Parameter Estimate			
Firm Age	.2140*			
Ind. GNP				
Ind. Con.	.1800[1]			
#Employees				
$Assets		-.1916[1]	-.2365*	
Capt.Tech.				
Adm.Tech.				
Outown				
Inown				
Stability (AvTenure)	.5115***	.6371****	.7005****	.6842***
Stability (SDTenure)	-.4764**	-.4376*	-.3980*	-.3414[1]
Inequality	-.2891*	-.2529[1]	-.2682[1]	
Insularity				
CEO Bridge	.2606[1]	.2575[1]	.2608[1]	
Gatekeeper	.2629*	.2962*	.2614*	
+Star				

1 = p<.10 *** = p<.001
* = p<.05 **** = p<.0001
** = p<.01

TABLE 21
Stock Price Lagged Effects of 1982 Independent Variables
on 1983 1984 1985 Dependent Variable

	1983 (t+1) n=85	1984 (t+2) n=83	1985 (t+3) n=78
Adj R^2	.32***	.33***	.25**
Variable	Standardized Parameter Estimate		
Firm Age			
Ind. GNP			
Ind. Con.			
#Employees			
$Assets			
Capt.Tech.			
Adm.Tech.			
Outown		.1697[1]	
Inown			
Stability (AvTenure)	.4852***	.5200**	.4651*
Stability (SDTenure)	-.4397*	-.4716*	
Inequality			
Insularity			
CEO Bridge	.3724[1]		
Gatekeeper			
+Star			

1 = p<.10
* = p<.05
** = p<.01
*** = p<.001
**** = p<.0001

TABLE 22
Stock Price Results - Lagged Endogenous Model Y_{t-1}

	1977	1978	1979	1980	1981	1982	1983	1984	1985
N=	81	81	86	88	89	86	84	82	79
Adj R^2	.93****	.95****	.98****	.64****	.92****	.87****	.03	.25**	.95****
Variable Name	Parameter Estimates								
Firm Age				.0624[1]					
Ind. GNP									
Ind. Con.									
#Employ	-.1535**	-.1180**	-.0509*						
$Assets				-.1150*					
Capt.Tech.									.0579[1]
Adm.Tech.								-.18691	
Outown									
Inown							.2204[1]		
Stability (AvTenure)	.1331*	.0587[1]				.1858**	.4290*	.4818**	
Stability (SDTenure)	-.1745*							-.4737*	
Inequality	-.0928[1]			-.1011*					
Insularity	.0763[1]	.0918*							.0628[1]
CEO Bridge									
Gatekeeper					.1015*				
+Star				.0939**					
T-1	.9478****	.9646****	.9982****	.7921****	.9870****	.8617****	+	+	.9320****
D/Watson	1.54	1.94	2.02	1.70	1.77	2.10	2.06	1.53	2.02
Durbin h	2.38*	.30	.08	1.53	1.26	- .51	.35	n.a.	.01
T								-2.51*	
Auto r	.20	.09	.02	.16	.14	-.05	-.05	.26	-.05

1 = p<.10 **=p<.01 *** = p<.001

TABLE 23
Stockprice Results - Partial Correlation Coefficients
Lagged Endogenous Model

	1977 n=81	1978 n=82	1979 n=88	1980 n=90	1981 n=91
Adj R^2	.93****	.95****	.98****	.64****	.92****
Variable Name	Partial Correlation - Type II SS				
Firm Age	.01	-.01	-.00	.00	.04[1]
Ind. GNP.	.00	.00	-.00	-.01	.01
Ind. Con.	.01	.00	.02	.01	-.03
#Employees	-.13**	-.12*	-.08*	.04	-.00
$Assets	.00	-.01	.00	.00	-.05*
Capt.Tech	.00	-.01	-.01	.00	-.01
Adm.Tech.	-.01	-.02	.06	.00	.02
Outown	-.04	.00	-.00	-.00	.01
Inown	.01	.01	.00	-.03	.02
Stability (AvTenure)	.06*	.02[1]	-.00	-.00	.04
Stability (SDTenure)	-.08*	-.04[1]	-.00	.00	-.02
Inequality Entry Date	-.05[1]	-.02	.00	-.01	-.06*
Insularity	.04[1]	.06*	.02	-.01	.02
Bridge	.03	.01	-.01	.01	.01
Gatekeeper	-.00	-.01	-.01	.02	-.01
+Star	-.01	-.01	-.01	-.00	.08**
T-1	.88****	.91***	.97**	.51****	.89****

[1] Beta significant at p<.10
* Beta significant at p<.05
** Beta significant at p<.01
*** Beta significant at p<.001
****Beta significant at p<.0001

TABLE 23 continued
Stockprice Results - Partial Correlation Coefficients
Lagged Endogenous Model

	1982	1983	1984	1985
Adj R^2	.87***	.03	.25**	.95***
Variable Name	Partial Correlation - Type II SS			
Firm Age	-.00	-.03	-.00	.00
Ind. GNP.	-.00	-.00	-.01	-.03
Ind. Con.	-.00	-.00	.00	.02
#Employees	-.00	.01	.04[1]	-.01
$Assets	-.01	-.01	-.01	-.00
Capt.Tech	.00	.00	.02	.04[1]
Adm.Tech.	.00	-.00	-.05[1]	.01
Outown	-.01	.01	.00	-.00
Inown	-.02	.05[1]	-.01	.02
Stability (AvTenure)	.11**	.08*	.12**	-.01
Stability (SDgrpTenure)	-.00	.03	-.07*	-.00
Inequality Entry Date	-.04[1]	.00	.02	.00
Insularity	.00	-.03	-.00	.05[1]
Bridge	.00	-.01	.03	.00
Gatekeeper	.07*	-.00	-.00	-.02
+Citations	-.01	.00	-.00	-.00
T-1	.81****	.01	.03	.93****

[1] Beta significant at p<.10
* Beta significant at p<.05
** Beta significant at p<.01
*** Beta significant at p<.001
****Beta significant at p<.0001

TABLE 24

Stock Price - Summary of Significant Results in All Models

Variable	Cross Sectional	Lagged Exogenous	Lagged Endogenous
Group Level			
Inequality	supported 76-80	1976--77,78,81,82 1977--all years 1980--81,83	1977, 1981
Insularity	opposite direction 77-79, 81	1977--78 79	opposite direction 77, 78, 85
Stability	opposite direction all years	opposite direction all years	opposite direction 77-78, 82-84
Individual Level			
Prominent Star	n.s.	n.s.	1982
Gatekeeper	n.s.	n.s.	1983
Individual-Group Level			
Bridge	76-79; 81-82	1976--77,78,82 1977--78-82 1980--81-83 1982--83	1977 1978 1985

TABLE 25
Comparison of Partial Correlation Coefficients
for both Dependent Variables by Year
Lagged Endogenous Model

	1977		1978		1979		1980		1981	
	P	S	P	S	P	S	P	S	P	S
ADJ R^2	.33	.93	.11[1]	.95	.05	.98	.41	.64	.33	.92
	***	****		****		****	****	****	****	****
Firmage										.04[1]
Industry GNP									-.08**	
Industry Concentration										
#Employees		-.13**		-.12*		-.08*				
$ Assets										-.05*
Capital Technology										
Administ. Technology										
Outown										
Inown	.21**									
Stability (Avten)		.06*	.07*	.02[1]	.06*				.05*	
Stability (SDten)	-.05[1]	-.08*		-.04[1]						
Inequality		-.05[1]								.06*
Insularity		.04[1]		.06*						
Bridge										
Gatekeeper										
Star										.08
										**
Y_{t-1}	.28	.88	.19	.91	.09	.97	.46	.51	.39	.89
	****	****	***	****	**	****	****	****	****	****

TABLE 25 (continued)
Comparison of Partial Correlation Coefficients
for both Dependent Variables by Year
Lagged Endogenous Model

	1982		1983		1984		1985	
	P	S	P	S	P	S	P	S
ADJ R^2	.38 ***	.87 ****	.44 ****	.03	.18 *	.25 **	.30 ***	.95 ****
Firmage	-.04[1]							
Industry GNP	.14***							
Industry Concentration								
#Employees						.04[1]		
$ Assets								
Capital Technology								.04[1]
Administ. Technology						.05[1]		
Outown								
Inown			.06*	.05[1]				
Stability (Avten)	.09**	.11**		.08*		.12**		
Stability (SDten)			.05[1]			-.07*		
Inequality		.04[1]						
Insularity			.04[1]		.06*			.05[1]
Bridge	-.04[1]							
Gatekeeper		.07*			-.05[1]			
Star					.06*			
Y_{t-1}	.31 ****	.81 ****	.43 ****	n.s.	.19 ***	n.s.	.33 ****	.93 ****

APPENDIX A
Companies in Sample

Company Name	Years Included
Alaska Interstate Company/Enstar	76-83
Akzona Inc.	76-81
American Greetings Corporation	76-85
American Quasar Petroleum Company	76-85
(The) Amalgamated Sugar Company	77-82
Anderson, Greenwood & Company	76-85
Applied Devices Corporation	76-84
Arkansas Louisiana Gas Company/Arkla	76-85
Ati, Inc.	76-85
A-T Industries, Inc.	76-85
Austin Bancshares Corp.	76-81
Bankamerica Corporation	76-85
Bankers Trust New York Corporation	76-85
Butler National Corporation	76-81 83-85
Charvoz Carsen Corporation	76-85
Chemical Financial Corporation	76-85
Chris-Craft Industries, Inc.	76-85
Citizens Utilities Company	76-85
CMEI Inc./Pier 1 Imports	76-85
Colonial Life & Accident Insurance Company	76-85
Comarco, Inc.	76-85
Comp-U-Check Inc.	76-85
Continental Airlines Inc./Texas Air Corp.	76-81
Cooper Resources & Energy Inc./Fluidic Industries	78-83
CPC International Inc.	76-85
CTS Corporation	76-85
Damson Oil Corporation	76-85
Data General Corporation	76-85
Depositors Corporation	76-83
DMI Furniture Inc.	78-85
Dunes Hotels & Casinos Inc. /Continental Connector Corp.	76-85
Dyco Petroleum Corporation	76-84
(The) E.F. Hutton Group Inc.	76-85
Everest & Jennings International	76-85
First Jersey National Corporation	76-85
First National State Bancorporation	76-85
Fred F. French Investing Co., Inc.	76-80

APPENDIX A (continued)

General Electric Company	76-85
General Motors Corporation	76-85
George Banta Company, Inc.	76-85
Goldblatt Bros. Inc.	76-84
Greenwood Resources Ltd.	78-85
Gulf & Western Industries, Inc.	76-85
(The) Harper Group	77-85
H.H. Robertson Co.	76-85
Hillenbrand Industries Inc.	76-85
Hubbard Real Estate Investments	76-85
INA Corp.	76-81
Johns-Manville Corporation/Manville Corporation	76-85
Johnson Products Co., Inc.	76-85
Justin Industries Inc.	76-85
Ketchum Industries Inc.	76-85
Lancer Pacific Inc.	76-85
(The) L.E. Myers Company	76-85
Luby's Cafeterias, Inc.	76-79 81-85
Marshall Industries	76-85
May Petroleum Inc.	76-85
MCI Communications Corporation	76-85
Mercantile Bankshares Corporation	76-85
Minnetonka Laboratories Inc.	76-85
Mitchell Energy & Development Corporation	76-85
National Computer Analysts Inc.	76-83
National Medical Enterprises, Inc.	76-85
Norris Oil Company	76-84
Nuveen/St. Paul Companies, Inc.	76-85
NVF Co./Alaska Gold	76-85
Pan American World Airways, Inc.	76-85
Patrick Petroleum Company	76-85
Piedmont Management Company Inc.	76-85
Poe & Associates Inc.	76-85
Programs Unlimited/Cutco.	76-77 80-85
Puritan Bennett Corporation	76-85
Ranco Inc.	76-85
Regency Electronics Inc.	76-85
Research, Inc.	76-85
Rix Corporation	76-85
Royal Palm Beach Colony, Inc.	76-83 85

APPENDIX A (continued)

Saga Corporation	76-85
Scientific, Inc.	76-85
SGL Industries Inc.	76-85
Sherwood Diversified Services, Inc.	80-85
Stanadyne Inc.	76-85
Sunshine Mining Company	77-85
T-Bar Incorporated	76-85
Tecumseh Products Company	76-85
Tele-communications Inc.	76-85
Texas International Company	76-85
Thor Energy Resources Inc.	76-82 84
Transport Life Insurance/American Can Company	76-84
Town & Country Mobile Homes, Inc./ Brigadier Industries/U.S. Home Corporation	76-85
United Bank Corporation of New York	76-85
Union Camp Corporation	76-85
United States Sugar Corporation	76-85
Vacco Industries	76-83
Van Dusen Air Inc.	76-85
Wachovia Corporation	76-84
Wehr Corporation	76-81
Westmoreland Coal Company	76-85
Western Pacific Industries Inc.	76-85
Woodward Governor Company	76-85
(The) Ziegler Company, Inc.	76-85

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