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**THE INFORMATION CONTENT OF STANDARD & POOR'S
COMMON STOCK RANKING CHANGES**

THE INFORMATION CONTENT OF STANDARD & POOR'S
COMMON STOCK RANKING CHANGES

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy

By

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CHAPTER ONE

INTRODUCTION

1.1 Introduction and Statement of Purpose

The Standard & Poor's Corporation is one of the largest investment advisory services in the United States. Standard & Poor's provides extensive financial information on common stocks, including common stock rankings.[1] These rankings are derived from a system that begins with a computer-generated score for per-share growth, stability, and cyclicality of earnings and dividends for the most recent ten years of available data. Standard & Poor's then makes adjustments to the computer-generated scores based on corporate size and sales volume. Finally, the scores are reviewed and modified by Standard & Poor's for relative current standing and special considerations (such as natural disasters, strikes, and non-recurring accounting adjust-ments). Many companies' stocks are not ranked due to insufficient data. Also, Standard & Poor's does not rank the stocks of foreign companies, investment companies, and

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[1] Common stock rankings are also published in the Moody's Handbook of Common Stocks, the Value Line Investment Survey, and the Financial World. See Appendix A for a more detailed description of the Standard & Poor's common stock rankings, and see Appendix B for descriptions of the Moody's, Value Line, and Financial World common stock rankings.

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certain finance-oriented companies. Unranked stocks are denoted NR (no ranking). The rankings are published monthly in the Stock Guide, quarterly in the three editions (New York Stock Exchange, American Stock Exchange, and Over-the-Counter) of the Standard & Poor's Stock Reports, and annually in the Standard & Poor's Stock Market Encyclopedia. Table 1.1 lists the eight rankings used by Standard & Poor's.

There is some discrepancy by Standard & Poor's concerning the purpose of the common stock rankings. On one hand, Standard & Poor's offers the following disclaimer [Stock Guide, p. 7]:

> A ranking is not a forecast of future market performance, but is basically an appraisal of past performance of earnings and dividends, and relative current standing. These rankings must not be used as market recommendations; a high-score stock may at times be so overpriced as to justify its sale, while a low-score stock may be attractively priced for purchase.

Conversely, Standard & Poor's implies a relation between common stock prices and common stock rankings in the following statements [Standard & Poor's Stock Reports, pp. ix-x; Stock Guide, p. 7]:

> We believe that the two most important factors in determining the price of a stock are earnings and dividend growth. It is this growth that will most likely cause stock prices to rise over time. Earnings growth is important because

> it allows a company to pay higher dividends and
> these increasing dividends help offset the effects
> of inflation....
> Growth and stability of earnings and dividends
> are deemed key elements in establishing Standard &
> Poor's earnings and dividend rankings for common
> stocks, which are designed to capsulize the nature
> of this record in a single symbol.

Additionally, Carl Ratner, the publisher of the Stock Guide

and a Vice-President of Standard & Poor's, suggests that

"common stocks ranked A- may be the most interesting

securities to hold for price appreciation."[2]

Although Standard & Poor's common stock rankings are

not purported to be specific buy or sell recommendations

with predictions of share price movement (as with the Value

Line Investment Survey and numerous investment news

letters), the rankings do incorporate information provided

by Standard & Poor's on which investors may base investment

decisions. While early studies by Stevenson [1966] and

Soldofsky [1968] question the usefulness of Standard &

Poor's common stock rankings, more recent studies find that

the rankings provide investors with information. Haugen

[1979], Muller, Fielitz, and Greene [1983, 1984], and Muller

and Fielitz [1987] conclude that the rankings are closely

related to risk as measured by beta and the variability of

returns and earnings. Haugen [1979] finds that risk rises

for each ranking from A+ to C, while Muller, Fielitz, and

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[2] Telephone interview, September 26, 1988.

Greene [1983, 1984] and Muller and Fielitz [1987] find that
risk rises for each ranking from A+ to B.[3] While the
rankings are found to be a good measure of risk, they are
not found to be a reliable measure of return. Muller and
Fielitz [1987] suggest that a buy and hold strategy of
stocks ranked A is the best method for receiving high risk-
adjusted portfolio returns.

Standard & Poor's makes common stock ranking changes
daily. A ranking change can be either an upgrade, a down-
grade, the initiation of a ranking (from NR to a ranking),
or the withdrawal of a ranking (from a ranking to NR).[4]

The ranking changes are initially revealed by Standard
& Poor's via internal memoranda. The memoranda are
generated in the following manner: Information is processed
daily by Standard & Poor's, and the new data is entered into
the scoring system described previously for common stock
rankings. The new information usually causes a few
companies' stocks to have proposed ranking changes. Each
company with a proposed ranking change is listed on the
memorandum. Next, Standard & Poor's reviews the list of
companies and decides which companies will retain their

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[3] Due to insufficient data, Haugen [1979] excludes
stocks ranked D from his study, and Muller, Fielitz, and
Greene [1983, 1984] and Muller and Fielitz [1987] exclude
stocks ranked lower than B.

[4] An additional category involves liquidated companies
(from a ranking to Liq). This type of change will not be
considered in this paper since such changes occur approxi-
mately only twice per year.

current rankings, and which companies will change to the
proposed rankings. Approximately forty percent of the
companies listed on the memoranda have a ranking change,
while the remainder of the companies retain their current
rankings.[5]

The memoranda are released daily (mailed as hard-copy)
to the Interactive Data Corporation, a time-share service in
Boston, which then provides the information to its
customers.[6] The ranking changes are subsequently published
at the end of the month in the Stock Guide.[7]

The circulation of the Stock Guide is approximately
400,000 per month. In addition to subscribers, the Stock
Guide is also available to most investors who employ a full-
service broker. Common stock rankings are published in the
Stock Guide among other financial data (such as ratio
analysis, shares of institutional holdings, monthly volume
of trades, dividend yield, and share price history) for more
than 5,300 common and preferred stocks.

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[5] Standard & Poor's proposed 4,452 ranking changes
during the period from June 1985 to May 1987. Of these
proposed changes, 2,573 (58%) retained their current
rankings, while 1,879 (42%) received the proposed ranking
change.

[6] The Interactive Data Corporation will not release any
information regarding how quickly the information is made
available to their customers.

[7] The ranking changes are listed in two places in the
Stock Guide each month. A special section on page four
contains all changes for that month, and each change is also
printed with its corresponding company.

The purpose of this study is to determine the extent to which common stock ranking changes made by Standard & Poor's affect common stock prices. That is, this study is an empirical test of the information content of common stock ranking changes made by Standard & Poor's.

1.2 Basis and Significance of the Problem

This study attempts to answer several questions regarding Standard & Poor's common stock ranking changes. The central question is whether or not the ranking changes contain information which is not already incorporated in security prices. Since previous studies find information content in Standard & Poor's common stock rankings, the a priori expectation is that the ranking changes contain information, although, following Stickel [1986], an argument can be presented for both sides of the issue.

On one hand, there is good reason to expect a security price response to common stock ranking changes. Standard & Poor's lengthy history of publication coupled with their large current readership suggest that market participants consider them to be important producers of information. The ranking changes assimilate publicly available information, and they may also encompass non-publicly available infor- mation to which Standard & Poor's has access. If the

ranking changes are based in part on valuable, non-publicly available information, then a security price response would be expected upon their release. Also, the ranking changes may affect security prices even if they are based only on publicly available information.

Millon and Thakor [1985] provide theoretical justification for the existence of information gathering agencies such as Standard & Poor's and Value Line. They argue that it is more economical for information gathering agencies to share information with individuals than to have individuals process their own information. Stickel [1986, p. 199] concurs with Millon and Thakor [1985], and he makes the following argument in the case of preferred stock rating changes:

> Even if the rating changes are entirely based on publicly available information they may affect prices if investors believe their individual marginal costs of gathering and processing information are greater than their individual expected marginal benefits. The agencies may be efficient processors of costly, publicly available information, who periodically rate the financial strength of companies for their subscribers. The disclosure of this processed information would be 'new' information to the marketplace, affecting security prices.

On the other hand, there is reason to expect that the ranking changes have no information content. The ranking changes may be made subsequent to the release of publicly available information, and they may be mere summary

statistics which provide financial markets with no additional information.

While the information content of common stock ranking changes made by Standard & Poor's has not been previously tested, a closely related area, the information content of Value Line recommendations, has been examined extensively. Performance evaluation studies by Black [1971], Holloway [1981], and Copeland and Mayers [1982] find that stocks ranked high in the Value Line Investment Survey outperform stocks ranked low, even after making an adjustment for market risk. Since Value Line's rankings are based almost entirely on publicly available information, the rankings' ability to predict abnormal stock market performance is considered anomalous to capital market efficiency. Stickel [1985] tests for information content in Value Line ranking changes. He examines 1,427 weekly Value Line (timeliness) ranking changes during the 191 week period from July 16, 1976 to March 7, 1980. Information content is found for Value Line ranking changes, and the portfolio price adjustment is for approximately three days subsequent to the public release of the ranking changes. Stickel [1985] finds that stocks reclassified from rank 2 to rank 1 have the most pronounced effect on common stock prices.

If Standard & Poor's ranking changes have information content, then they should affect security prices upon their announcement. On the memorandum dates, the ranking changes

contain "privileged" information that has not yet been released to the public. The first release to the public is through the Interactive Data Corporation. If the ranking changes do contain new information, and the customers of the Interactive Data Corporation trade based on the ranking changes, then a security price response would be expected two to three days after the memorandum dates.

The second public release of the ranking changes occurs when the Stock Guide is published. If the information is already fully "impounded" in stock prices due to the previous release, then no market reaction would be expected from the publication of the Stock Guide. However, if the ranking changes contain information which is not fully incorporated from the first release, and subscribers of the Stock Guide buy and sell common stocks based on the ranking changes, then a market response would be expected when the Stock Guide is published.

Conversely, if the ranking changes contain no new information, then there would be no market response due to their release, but there may be a change in stock prices prior to the memorandum dates. A movement of stock prices prior to the memorandum dates would indicate that the ranking changes are only summary statistics with no information content per se.

Empirical results reported in Chapter IV indicate that common stock returns change significantly prior to memoranda

dates, for both upgrades and downgrades. However, the adjustment process differs by type of ranking change, and a statistically significant rise in stock prices occurs six days after the memorandum date for upgrades. Based on the results of a <u>Wall Street Journal Index</u> search, Standard & Poor's makes ranking changes subsequent to earnings announcements. While no relation is found between rankings and return, a close relation is found between rankings and risk, both before and after ranking changes. Also, a statistically significant fall in the mean beta for upgrades is found following the memorandum date. Firms upgraded by Standard & Poor's are found to have a reduction in risk subsequent to a ranking change. Thus, while a Standard & Poor's anomaly does not exist, Standard & Poor's common stock rankings provide investors with a reliable measure of risk, and ranking changes indicate a change in risk.

1.3 Limitations of the Study

This study is limited in part by the unwillingness of the Interactive Data Corporation to describe the process by which it releases Standard & Poor's common stock ranking changes to its customers. Because of this lack of information, the exact date on which the data become available to the public is unknown. In order to account for

this limitation, this study examines stock price behavior
for a sufficient length of time subsequent to the memorandum
dates to allow for the dissemination of the information.

1.4 Remainder of the Study

Chapter II provides a review of the literature related
to common stock ranking changes. These topics include the
information content of Standard & Poor's and Value Line
common stock rankings, and the information content of Value
Line ranking changes. Chapter III examines the event study
methodology used in this paper, the period of study, and the
sample and sample selection procedure. Chapter IV provides
empirical results and an interpretation of the results, and
Chapter V is a summary of the study and conclusions.

Table 1.1

Standard & Poor's rankings for common stocks. They
are based on the growth, stability, and cyclicality
of earnings and dividends. Adjustments are made for
 corporate size, sales volume, special considerations,
and relative current standing.

A+	Highest
A	High
A-	Above Average
B+	Average
B	Below Average
B-	Lower
C	Lowest
D	In Reorganization

CHAPTER TWO

REVIEW OF THE LITERATURE

2.1 Introduction

The purpose of this paper is to examine the information content of common stock ranking changes made by the Standard & Poor's Corporation. This chapter provides a review of related literature. There are previous studies in two related areas which provide the foundation for this paper. The first area involves the information content of Standard & Poor's common stock rankings, and the second area entails the Value Line Investment Survey anomaly.

2.2 Standard & Poor's Common Stock Rankings

An early study by Stevenson [1966] questions the usefulness of common stock rankings. He suggests that common stock quality rankings should classify firms into risk classes. Rather than directly testing for common stock rankings' ability to measure risk, Stevenson measures the variability of Standard & Poor's, Value Line, and Financial

World rankings.[8] He argues that rankings should be
consistent if they are a good measure of risk. That is, a
company with a high ranking (indicating low risk) by one
investment advisory service should also be ranked high by
the other two services.

In Stevenson's random sample of 110 stocks ranked by
the three services during 1965, none of the stocks receive
identical rankings from the three investment services, and
four stocks have rankings that vary by more than one grade.
Furthermore, Standard & Poor's is found to give higher
rankings to stocks than the other two services.[9] Stevenson
attributes these differences in rankings to the services'
different ranking criteria. While the descriptions given by
Value Line, Standard & Poor's, and Financial World are
fairly general, Standard & Poor's seems to place relative
emphasis on the growth of earnings and dividends. Thus,
Stevenson justifies the higher Standard & Poor's rankings in
1965 with the economic growth of the early 1960s. In a
sample of 78 electric utility companies, only two stocks
have identical rankings for the three services, with Value
Line rankings higher than those of Standard & Poor's and

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[8] Stevenson [1966] studies Value Line's rankings prior
to April 1965, when Value Line began their current
timeliness rankings.

[9] Based on a scoring system where A+=1, A=2, ..., C=8,
the mean (standard deviation) scores are 3.709 (1.632) for
Standard & Poor's, 4.936 (1.767) for Financial World, and
5.082 (1.876) for Value Line.

Financial World.[10] Value Line's higher rankings for

utilities are attributed to its emphasis on past market

price stability.

Stevenson also attempts to find factors (such as the

price-earnings ratio, dividend yield, and change in

earnings) which are correlated with rankings that can be

used to classify stocks by risk. However, none of the

correlations are large enough to suggest their influence on

the ranking systems, and Stevenson [1966, pp. 100-101]

reaches the following conclusion:

This investigation has not produced strong
support for the use of common stock quality ratings
as guides to the risk associated with any particu-
lar stock. The wide variations among the ratings
given the stocks sampled suggests either security
analysts have considerable difficulty classifying
the risk inherent in a stock or, that they even
disagree on appropriate risk criteria.... Investors
should be aware of the different common stock qual-
ity ratings that may be given the same stock by
different advisory services.

Soldofsky [1968] ignores Stevenson's warning and

measures the performance of common stocks whose Standard &

Poor's, Value Line, and Moody's rankings were identical or

nearly identical during the entire period from 1951-1966.

He finds 75 industrial stocks that meet the criteria of his

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[10] Using the same scoring system, the mean (standard
deviation) scores are 2.206 (0.624) for Value Line, 2.244
(0.759) for Standard & Poor's, and 3.936 (1.188) for
Financial World.

screening process, and he divides the 75 stocks into five groups of fifteen each based on their rankings. He examines the correspondence which his quality groups have with both risk (as measured by the standard deviation of annual returns) and return (as measured by the mean of annual yields) during the fifteen-year period. Soldofsky reaches the conclusion that the rankings provided by investment advisory services do not provide investors with good measures of risk and return of common stocks.

Haugen [1979] finds information content in common stock rankings when he examines their ability to predict subsequent returns and risk of common stocks. He escapes Soldofsky's design problem by examining only Standard & Poor's rankings. His motivation for research stems from work by Cragg and Malkiel [1968], which finds evidence of investment advisors' inability to accurately forecast the relative short-term profitability of firms.

Haugen constructs seven (equally weighted) portfolios from the 806 New York Stock Exchange common stocks that were ranked either A+, A, A-, B+, B, B-, or C by Standard & Poor's in 1956. He then examines their relative performance during the period from 1956-1971 without making any adjustments for subsequent ranking changes. That is, each stock remains in its initial portfolio regardless of its ranking after 1956. Delisted stocks are dropped from their portfolio the month of their delisting.

Table 2.1 presents Haugen's findings of a perfect correspondence between Standard & Poor's rankings and portfolio risk as measured by beta. However, only a weak, positive relation between rankings and actual portfolio rates of return is found. Haugen suggests that these results are dependent upon the nature of general market performance during the period of study.

In a related study, Muller, Fielitz, and Greene [1983] also find information content in Standard & Poor's common stock rankings. They examine the consistency of the risk and return of (equally weighted) portfolios of common stocks ranked by Standard & Poor's during the 1970s. Their sample contains 20 stocks ranked A+, 28 ranked A, 24 ranked A-, 103 ranked B+, and 57 ranked B by Standard & Poor's during the entire period from 1970 through 1979.[11] Stocks ranked B-, C, and D are excluded from the study since few stocks had a constant low ranking during the full ten-year period.

The findings of Muller, Fielitz, and Greene [1983] are presented in tables 2.2 and 2.3. They find that Standard & Poor's rankings are a good proxy for risk as measured by both beta and portfolio standard deviation, while the relation between portfolio risk and return is not constant over time. Stocks ranked A are found to have the highest

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[11] Standard & Poor's ranked approximately 4,400 stocks from 1970 to 1979. Only 325 stocks received a constant ranking during the ten-year period, and Muller, Fielitz, and Greene [1983] found complete price, dividend, and earnings data for 232 stocks.

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portfolio reward-to-variability ratio (mean/standard
deviation of total returns) for the entire period, but not
for the three subperiods tested. High-quality (A+) stocks
performed the best in the first subperiod (12/70 to 6/73),
medium-quality (B+) stocks performed the best in the second
subperiod (9/73 to 6/76), and lower-quality (B) stocks
performed the best in the third subperiod (9/76 to 6/79).
Also, earnings stability is found to be weighted more than
dividend stability in the determination of the rankings.
Finally, Muller, Fielitz, and Greene [1983, p. 42] imply in
the following statement that ranking changes by Standard &
Poor's may affect stock prices:

> Clearly, if portfolio managers can determine
> which stocks are currently in vogue, short-run per-
> formance results can be considerably enhanced by
> favoring the "correct" type of stock. At the same
> time, changes in security quality rankings would
> have implications for portfolio buy and sell deci-
> sions. Specifically, if a manager believes that
> holding high quality securities is "correct,"
> stocks that drop in ranking from A+ to A or A-
> should be sold, and stocks improving in quality
> from A to A+ should be purchased.

In a subsequent study, Muller, Fielitz, and Greene
[1984] examine the impact of sales, net worth, leverage, and
return on equity on Standard & Poor's common stock rankings.
Their sample contains 19 stocks ranked A+, 24 stocks ranked
A, 20 stocks ranked A-, 25 stocks ranked B+, and 18 stocks
ranked B in the years 1972, 1975, and 1978. They find that

Standard & Poor's rankings are closely related to firm size

(net worth and sales) and return on equity, but are not

related to leverage. Table 2.4 contains their results.

Muller and Fielitz [1987] reconstruct the previous

studies of Muller, Fielitz, and Greene [1983,1984] with data

from September 1970 through December 1984. Muller and

Fielitz [1987, pp. 66,67] both confirm and supplement

previous findings of information content in Standard &

Poor's common stock rankings:

> On average, the higher the growth, return on
> equity, earnings reinvestment, and size of a com-
> pany, the higher the quality rank. Also, the A+
> companies are less financially leveraged than the
> other companies....
> [S]uperior risk-adjusted returns are available
> to those investors who hold portfolios of A, A-, B+
> stocks, and, in particular, A stocks. There are
> short periods in down markets when A+ stocks do
> better than the other groups.... The most surpris-
> ing feature of our results is that the superior
> performance of high-quality stocks, and A stocks in
> particular, persists over the entire fifteen-year
> period.

2.3 Value Line Investment Survey Common Stock Rankings

This section surveys the literature involving the

unresolved debate of whether or not investors can earn

abnormal returns by making use of Value Line's common stock

rankings. The debate is referred to as the "Value Line

Anomaly" since several studies find information content in

Value Line's rankings, which is a violation of the semi-strong form of the efficient markets hypothesis.

Value Line's rankings are similar to Standard & Poor's rankings since both ranking systems are based almost entirely on publicly available information with historical earnings and dividend yields playing key roles. Also, both publications are widely circulated to investors who may trade stocks based on the information. However, the ranking systems differ significantly in their stated purpose. While Standard & Poor's rankings are advertised as summary statistics to be used by investors as only a part of a complete investment analysis, Value Line's rankings purport to provide investors with an investment strategy _per se_.

This study is motivated in part by the Value Line anomaly. While Value Line's ranking system may allow investors to outperform the market, this study will contribute to previous studies by testing whether or not ranking changes made by Standard & Poor's convey information to the market. Since Value Line's ranking system offers specific recommendations to investors, while Standard & Poor's ranking system offers relatively passive advice, an _a priori_ expectation of this study is that Value Line's rankings have a greater impact on common stock prices than Standard & Poor's rankings.

In April 1965, the _Value Line Investment Survey_ began publishing timeliness rankings for common stocks that are

specific buy-or-sell recommendations. Approximately 1700
securities are ranked from 1 to 5. The lower the numerical
rank, the greater the expected relative return for the
security for the next twelve months. Each week 100 stocks
are ranked 1 (highest), 300 stocks are ranked 2 (above
average), about 900 stocks are ranked 3 (average), 300
stocks are ranked 4 (below average), and 100 stocks are
ranked 5 (lowest). These common stock rankings are the
result of a filter rule which considers the relative
earnings and price rank of each security, "price momentum,"
quarterly earnings momentum, and unexpected quarterly
earnings. These rankings are based almost entirely on
publicly available information, as explained by Black [1973,
p. 10]:

> The rankings are based almost completely on
> ten years of published information on the earnings
> and common stock prices of the companies followed.
> In order to have earnings figures covering the same
> period of time available for all companies simulta-
> neously, the Value Line analysts estimate earnings
> for a particular quarter from the time the quarter
> ends until the quarterly earnings are officially
> reported. Once the rankings are produced by a com-
> puter, they are edited, and may be changed, to re-
> duce the magnitude and frequency of changes in rank.
> These are the only ways in which subjective judge-
> ment enters into the calculation of the ranks on a
> continuing basis. The design of the ranking system
> involved some judgemental factors, but as noted, the
> inputs to the system consist almost entirely of pub-
> lished information.

The debate regarding the information content of Value Line's timeliness rankings began shortly after the rankings' inception. In an effort to promote the Value Line Investment Survey, Value Line announced its first Contest in Stock Market Judgement in September 1965. Contestants were allowed to select 25 stocks from Value Line's timeliness categories 4 (below average) and 5 (lowest).[12] The performance of the contestants' portfolios over a six-month period (December 3, 1965 to June 3, 1966) were to be compared with the performance of a portfolio formed by the Value Line management. Value Line selected 25 stocks from timeliness category 1 for their portfolio, and a list of their 25 stocks was made public before the beginning of the contest. The contest attracted 18,565 official entrants, and Value Line offered cash prizes for the highest-performing 104 portfolios that outperformed Value Line's portfolio.[13]

Shelton [1967] provides the first analysis of Value Line's 1965-1966 contest. His interest in the contest stems

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[12] The contestants had 350 stocks to choose from based on their Oct. 26, 1965 rankings. Value Line ranked 100 stocks in Class 1 (highest), 259 in Class 2 (above average), 363 in Class 3 (average), 250 in Class 4 (below average), and 100 in Class 5 (lowest) on that day.

[13] The prizes offered were $5,000 for first place, $2,500 for second place, $1,000 for third place, $500 for fourth place, and $100 each to the next 100 portfolios that outperformed Value Line's portfolio. The performance of each contestant was calculated based on equally-weighted portfolio returns with adjustments for stock splits, stock dividends, and other capital changes.

from debate concerning the random walk hypothesis and the
performance of mutual funds. His main concern is whether or
not the contest participants are able to select portfolios
which outperform the market. During the six-month period,
the 350 stocks in categories 4 and 5 lost an average of
5.96% in value, and the 18,565 contestants lost an average
of 4.77% in the value of their portfolios.[14] Thus, Shelton
concludes that stock prices during the contest were somewhat
predictable, rather than random, since the contestants were
successful in their stock selection. Only twenty portfolios
from the 18,565 entrants had higher returns than the Value
Line portfolio for the six-month period of the contest,
marking the beginning of the Value Line anomaly. During the
six-month period, Value Line's portfolio of 25 stocks gained
in value by 10.98%.[15] Shelton concludes that Value Line's
success in stock selection is further evidence that stock
price behavior is predictable.

Hausman [1969] criticizes Shelton's study, and suggests
that the results of Value Line's 1965-1966 contest are not
inconsistent with the random walk hypothesis. He argues
that the entrants, as a group, did not randomly select
stocks since the frequency of stocks selected for portfolios

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[14] The 250 stocks in category 4 lost 5.23% in value,
while the 100 stocks in category 5 lost 7.78%.

[15] The 100 stocks in category 1 gained in value by
5.11% during the six-month period.

ranged from 7,413 to 83.[16] Hausman [1969, p. 320] reaches

the following conclusion:

> The fact that investors (or contest entrants)
> tend to agree with each other need not mean that
> they know anything of value. Neither does the fact
> that, on a single occasion, they outperformed a
> random selection of stocks, especially if their
> degree of superiority was quite small when evaluat-
> ing by means of the relevant measures of chance.

Murphy [1970] studies Value Line's 1968-1969 contest,

and he concurs with Shelton's conclusion that stock prices

do not behave in an entirely random manner. However, the

studies by Shelton and Murphy are not directly comparable

since Value Line changed its contest rules before its 1968-

1969 contest. For the 1968-1969 contest, 69,000 entrants

selected a portfolio of 25 stocks from the entire list of

1,258 stocks ranked by Value Line, but Value Line did not

select a portfolio of stocks for the contestants to compete

with. Instead, Value Line relied on a correlation between

Value Line rankings and winning portfolios to prove the

value of their rankings. Unfortunately, due to the

popularity of the contest, Value Line did not calculate the

mean portfolio returns as before for all 69,000 contestants.

Instead, Value Line published the returns of the 1,258

stocks used in the contest, each contestant calculated his

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[16] Since there were 18,565 entrants forming portfolios
of 25 stocks each from a group of 350 stocks, the expected
frequency of selection was 1,326 times per stock.

or her own portfolio return, and potential prize winners with portfolio returns above +4% submitted claims to Value Line. Nevertheless, Murphy finds evidence of nonrandomness in stock market returns since the contestants once again outperformed the market, but he does not examine the correlation between rankings and portfolio performance.

Kaplan and Weil [1973a, pp. 57-58] sharply criticize Shelton and Murphy's studies as follows:

> [N]either study controlled for the riskiness of the portfolios selected by contestants, hence both confounded portfolio performance with over- all market movements. The failure of those arti- cles to control for market effects casts consid- erable doubt on the validity of their conclusions.
> As believers of the efficient-market theory, we do not think we can pick a portfolio of 25 stocks that will significantly and consistently outperform other portfolios of equal risk. Nor, we suppose, can anyone else. But Value Line does not control for the riskiness of contestants' portfolios in evaluating their performance.

In an effort to prove their point, they entered the 1972-1973 Value Line contest with two portfolios. They selected a high-risk portfolio consisting of 25 stocks with the highest Value Line beta coefficients and a low-risk portfolio of 25 stocks with the lowest Value Line beta coefficients.[17] Kaplan and Weil predicted the portfolios would perform as expected with modern portfolio theory,

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[17] The high-risk portfolio beta was 2.13, and the low-risk portfolio beta was 0.21.

where high-risk (low-risk) portfolios perform the best during rising (falling) markets. However, Value Line would have predicted the two portfolios to perform about the same during the contest since the two portfolios had approximately the same rankings.[18] During the six months of the contest, the 1,411 stocks listed by Value Line fell by an average of 6.65%. Kaplan and Weil's low-risk portfolio rose in value by 3.8%, while their high-risk portfolio fell in value by 22.9%. Only 2,043 of the 89,744 contestants' portfolios performed better than Kaplan and Weil's low-risk portfolio, and only 519 out of the 89,744 portfolios entered performed worse than Kaplan and Weil's high-risk portfolio. The contestants did not fare very well in their selections since 60% of the contestants chose portfolios with lower rates of return than the average for all stocks.[19] Also, Value Line's rankings did not predict stock returns very well. The mean returns (betas) for rankings 1 through 5 were as follows: -7.18% (1.09), -4.70% (1.01), -6.42% (1.11), -7.68% (0.96), and -10.27% (1.15). Kaplan and Weil conclude that investors should not follow Value Line's rankings since they are flawed. Instead, investors should

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[18] The mean of the high-beta portfolio's Value Line rankings was 3.04, while the mean of the low-beta portfolio's rankings was 2.88.

[19] Kaplan and Weil suggest that the contestants' poor performance is the result of their choosing a disproportionately large number of high-beta stocks for their portfolios. The 25 most frequently selected stocks had a beta of 1.17 and an average decline in value of 8.13%.

maintain their portfolios at their desired level of risk.

Eisenstadt [1973], a Vice President and Director for
Value Line, and Black [1973], employed by Value Line at that
time, quickly criticize Kaplan and Weil for placing too much
weight on six months of Value Line's eight year history.[20]
Black performs a direct test of Value Line performance for
the five-year period beginning in April 1965. The rankings
are found to accurately predict stock returns after
controlling for both risk (with the capital asset pricing
model) and transaction costs. He evaluates equally-weighted
portfolios that were adjusted monthly for ranking changes.
The portfolio of stocks ranked 1 had a risk-adjusted rate of
return of +10% before transaction costs, while stocks ranked
5 had a risk-adjusted rate of return of -10%. The mean
betas for stocks in rankings 1 through 5 were 1.11, 1.03,
0.98, 0.96, and 1.03. Thus, Black concludes that Value
Line's rankings' anomalous performance is consistent over
time, even though the average risk within the rankings is
about the same.

Kaplan and Weil [1973b, pp. 14, 92] respond to Eisen-
stadt and Black as follows:

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[20] Fischer Black became involved with Value Line in
1970 after he defended modern portfolio theory in a debate
with Arnold Bernhard, the founder of Arnold Bernhard &
Company, which publishes the Value Line Investment Survey.

> Both responses are more plugs for Value Line
> than criticisms of our points.... If Value Line does
> not believe that performance over this six-month
> period is representative of the long run, then why
> did Value Line emphasize...the pay-off to using the
> rankings in selecting stocks for the contest?
> If Value Line stages another contest using the
> same rules as last year and if they invite us to
> enter the contest, then we will again enter two
> portfolios, one high-risk and one low-risk, and we
> predict that one of them will outperform Value
> Line's Group 1 stocks and the other will do worse
> than their Group 5 stocks.

After an eight-year stay, the debate is rejuvenated by

Holloway [1981]. He simulates two investment strategies

based on Value Line rankings from 1974 to 1977. The first

strategy involves purchasing all 100 stocks ranked 1 by

Value Line at the beginning of the year, holding the stocks

for one year, and then adjusting the portfolio to include

the 100 stocks ranked 1 by Value Line at the beginning of

the next year. Using this strategy, Holloway finds that

investors can receive abnormal returns even when transaction

costs are included. In his second investment strategy,

abnormal returns are calculated for a weekly-adjusted

portfolio of stocks ranked 1. That is, with each new weekly

issue of the Value Line Investment Survey, each stock down-

graded from category 1 is sold and its replacement is

purchased.[21] Holloway finds abnormal stock returns before

transaction costs, but the abnormal returns are not large

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[21] There are always 100 stocks in Value Line's category
1. Therefore, there are always replacements for stocks
downgraded by Value Line.

enough to counter the large transaction costs associated with such an active investment policy. Also, Holloway finds no relation between stocks' Value Line rankings and betas.

Hanna [1983] and Gregory [1983] attack Holloway's paper. Hanna argues that Holloway has overstated the abnormal returns from the buy-and-hold simulation, and Gregory makes the following comment regarding Holloway's paper:

> That Value Line has put together a string of market successes from 1965 to 1978 is no more sig-nificant than the fact that there are always a few gamblers ahead of the house in Las Vegas....
> This is not evidence of a capability system-atically to beat the market.... But if Value Line performs equally well in the future, I promise to discard my faith in efficient markets.

Holloway [1983] responds to the Hanna and Gregory critiques by updating his previous study to include data through 1981 and reaching the same conclusions as before.

Copeland and Mayers [1982] find significant abnormal performance with Value Line recommendations from 1965 to 1978, although the abnormal performance is less than that reported by Black. They report that the abnormal performance does not indicate a large market inefficiency after including transaction costs. Copeland and Mayers provide a methodological improvement over previous performance evaluations of Value Line recommendations. They escape the potential problems associated with the

misspecification of the capital asset pricing model by employing the market model to estimate the benchmark expected return. Also, they find abnormal returns in the first test of Value Line ranking changes. For a strategy of buying upgraded stocks and selling short downgraded stocks, abnormal returns are found for the first and second weeks following ranking changes.

Stickel [1985] expands Copeland and Mayers test for the effect of Value Line ranking changes and finds that ranking changes affect common stock prices, but the impact varies by the type of ranking change and by event day. In a study of 1,427 ranking changes during the 191 weeks from July 16, 1976 to March 7, 1980, Stickel finds that the largest impact on stock prices occurs when firms are changed from ranking 2 to ranking 1. The average abnormal returns (Z-statistics) for event days 0, +1, and +2 are 0.86% (10.91), 0.86% (11.27), and 0.72% (9.93), which are significant at the 0.01 level. Ranking changes from 1 to 2, 3 to 2, and 2 to 3 have lower average abnormal returns, and they are statistically significant a combined 7 out of 9 times on event days 0, +1, and +2. Ranking changes from 4 to 3, 3 to 4, 5 to 4, and 4 to 5 have even lower average abnormal returns, and they are statistically significant a combined 3 out of 12 times on event days 0, +1, and +2.

Stickel also considers cross-sectional differences in the information content of Value Line ranking changes, and

he finds that firm size (market value of common stock plus
book value of liabilities) is the best variable which
explains the extent of standardized abnormal returns. He
tests the hypothesis that smaller (larger) firms have larger
positive (negative) standardized abnormal returns with
Spearman rank correlations for all ranking change groups,
and he finds a significant relation between the variables.

Huberman and Kandel [1987, p. 578] also suggest that
there is a relation between firm size and Value Line
rankings in the following statement:

> The Value Line anomaly is similar to the small
> firm anomaly. The smaller a firm, the higher its
> mean return. The higher the rank given to a firm
> by Value Line, the higher its mean return. Both
> statements remain valid even after the usual market
> risk adjustment, and these high excess returns are
> of the same order of magnitude.... Value Line's
> record could be interpreted as a manifestation of
> the familiar size effect.

However, in a study of 1,633 firms ranked by Value Line
from 1976 to 1985, Huberman and Kandel sort companies by
ranking and firm size, and they find no evidence that the
Value Line anomaly is a function of firm size.

Finally, Peterson [1987] studies the daily stock price
impact of initial reviews by Value Line from 1969 to 1982.
He finds that initial reviews convey information to the
market since statistically significant abnormal returns are
found for three days surrounding the publication date.

2.4 Summary of Related Literature

Previous research involving the information content of common stock rankings provide an interesting framework for this study. Standard & Poor's common stock rankings are found by Haugen [1979], Muller, Fielitz, and Greene [1983, 1984], and Muller and Fielitz [1987] to furnish investors with a good measure of risk. However, Standard & Poor's rankings are not found to be a reliable measure of return. Value Line's common stock rankings are found by Black [1973], Holloway [1981], and Copeland and Mayers [1982] to provide investors with a sound investment strategy in which abnormal returns are found for the period from 1965 to 1981. However, Value Line's rankings are not found to be closely related to risk. Also, Stickel [1985] finds information content in Value Line ranking changes, and the portfolio price adjustment takes approximately three days subsequent to the public release of the ranking changes. This study contributes to this previous research by examining the information content of Standard & Poor's common stock ranking changes.

Table 2.1

Standard & Poor's common stock rankings are found to be
good predictors of risk by Haugen [1979]. The original
rankings of 806 stocks in 1956 are compared with their
subsequent risk and return during the 1956-1971 period.

1956 Ranking	Beta	Standard Deviation	No. of Stocks Begin.	End	Survival Rate	Monthly Return
A+	0.769	0.00140	102	81	0.79	0.0078
A	0.779	0.00139	149	111	0.74	0.0089
A-	0.803	0.00143	130	92	0.71	0.0100
B+	0.938	0.00191	198	106	0.54	0.0099
B	1.127	0.00283	93	51	0.55	0.0124
B-	1.208	0.00331	74	31	0.42	0.0114
C	1.378	0.00457	60	22	0.37	0.0115

Source: R. Haugen, "Do Common Stock Quality Ratings Predict
Risk?" Financial Analysts Journal, March-April 1979, p. 69.

Table 2.2

Standard & Poor's common stock rankings are found to be a
good proxy for risk by Muller, Fielitz, and Greene [1983].
However, the relation between return and risk is not con-
stant over time. Also, risk is related to the variability
in earnings changes. Figures are in percent.

Port-folio	σ of Total Returns	Mean of Total Returns	σ of Earnings Changes	Mean of Earnings Changes
Total Time Period (12/70 to 6/79):				
A+	9.5	1.9	9.4	2.9
A	10.0	3.0	17.5	4.7
A-	12.4	3.1	23.7	5.8
B+	12.6	3.3	25.4	6.3
B	16.7	3.8	70.6	15.9
S&P 400	12.3	2.2	16.3	4.7
First Time Period (12/70 to 6/73):				
A+	5.0	4.4	9.5	2.5
A	6.6	3.0	15.3	5.9
A-	9.9	2.9	18.5	6.1
B+	10.2	0.9	23.7	7.5
B	15.2	0.6	34.4	12.8
S&P 400	5.4	3.0	10.5	5.6
Second Time Period (9/73 to 6/76):				
A+	14.8	1.2	12.3	3.4
A	15.0	4.2	14.6	3.6
A-	18.4	4.4	33.0	6.1
B+	18.0	5.3	28.7	5.8
B	23.4	4.5	110.5	26.7
S&P 400	19.8	1.8	20.4	6.1
Third Time Period (9/76 to 6/79):				
A+	5.4	0.3	6.4	2.8
A	6.4	1.9	14.9	4.6
A-	6.7	2.0	18.4	5.1
B+	7.6	3.4	25.7	5.7
B	9.3	6.0	43.4	7.8
S&P 400	6.9	2.0	17.2	2.3

Source: F. Muller, B. Fielitz, and M. Greene, "S&P Quality
Rankings: Risk and Return," Journal of Portfolio Management,
Summer 1983, p. 40.

Table 2.3

Muller, Fielitz, and Greene [1983] find that Standard &
Poor's rankings are a good measure of risk as measured by
beta. Also, portfolio A has the highest reward-to-varia-
bility ratio for the entire ten-year period, but portfolios
A+,B+, and B outperform portfolio A in the first, second,
and third subperiods, respectively.

Port-folio	Beta	Total Period	Portfolio Reward-To-Variability Ratios (Mean/Standard Deviation of Total Returns)		
			First Period (12/70-6/73)	Second Period (9/73-6/76)	Third Period (9/76-6/79)
A+	0.88	0.20	0.89	0.08	0.05
A	1.06	0.30	0.46	0.28	0.30
A-	1.12	0.25	0.29	0.24	0.29
B+	1.17	0.26	0.09	0.30	0.45
B	1.33	0.23	0.04	0.19	0.65
S&P 400		0.18	0.55	0.09	0.29

Source: F. Muller, B. Fielitz, and M. Greene, "S&P Quality
Group Rankings: Risk and Return," Journal of Portfolio
Management, Summer 1983, pp. 40-41.

Table 2.4

Standard & Poor's common stock rankings are found to a good
measure of firm size and return on equity by Muller and
Fielitz [1984]. They find that the higher the ranking,
the higher the mean sales, net worth, and return on equity
for a sample of 19 A+, 24 A, 20 A-, 25 B+, and 18 B stocks.

S&P Rank	Sales ($ Billions)			Net Worth ($ Billions)			Return on Equity (Percent)		
	1972	1975	1978	1972	1975	1978	1972	1975	1978
A+	3.28	5.27	7.37	1.86	2.52	3.04	17.4	17.2	18.5
(σ)	(3.4)	(5.4)	(7.5)	(2.0)	(2.8)	(3.5)	(4.4)	(4.8)	(4.4)
A	2.12	3.34	5.10	1.02	1.35	1.93	13.3	15.2	15.8
(σ)	(4.1)	(6.1)	(9.5)	(1.9)	(2.4)	(3.3)	(4.6)	(3.7)	(4.0)
A-	0.91	1.39	1.95	0.54	0.65	0.81	12.5	12.2	14.5
(σ)	(1.1)	(1.8)	(2.5)	(0.8)	(0.9)	(1.1)	(4.2)	(4.8)	(3.9)
B+	0.41	0.54	0.78	0.18	0.23	0.25	10.9	10.9	13.5
(σ)	(0.5)	(0.6)	(0.8)	(0.2)	(0.2)	(0.3)	(3.7)	(5.3)	(5.3)
B	0.23	0.31	0.51	0.10	0.12	0.16	7.4	4.9	12.4
(σ)	(0.4)	(0.5)	(0.9)	(0.2)	(0.2)	(0.3)	(6.0)	(7.9)	(7.9)

Source: F. Muller, B. Fielitz, and M. Greene, "Portfolio
Performance in Relation to Quality, Earnings, Dividends,
Firm Size, Leverage, and Return on Equity," Journal of
Financial Research, Spring 1984, p. 24.

CHAPTER THREE

THE METHODOLOGY

3.1 Introduction

The purpose of this paper is to examine the information content of common stock ranking changes made by Standard & Poor's. The behavior of common stock prices surrounding the memorandum dates is examined. This chapter discusses the methodology utilized in testing for such an effect, the period of study, and the sample and data collection procedures.

3.2 The Event Study Methodology

3.2.1 Measurement of Abnormal Returns

Event study methodology models expected security returns, then computes the deviation of actual returns from expected returns and the statistical significance of the deviation. This study utilizes the market model to estimate the benchmark expected return.[22] The market model can be

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[22] See Fama [1976], Brown and Warner [1980, 1985], or Appendix C for further discussion of the market model. The benchmark returns are also estimated using the market adjusted returns model. Appendix D contains a definition of the model and empirical results.

stated as:

$$R_{it} = \alpha_i + \beta_i R_{mt} + e_{it} \qquad \cdot \cdot \cdot \ (3.1)$$

where

R_{it} = rate of return on common stock of firm i on day t,

R_{mt} = rate of return on an equally weighted New York- and America Stock Exchange index.

α_i, β_i = ordinary least squares regression parameters,

e_{it} = error term for common stock of firm i on day t.

If the joint hypotheses of capital market efficiency and market model validity hold true, then any statistically significant deviations of e_{it} from zero will indicate that firm-specific information is present. Therefore, if the release by Standard & Poor's of common stock ranking changes provides information to the market, then the presence of this information will be evident from the statistically significant departure of the error terms from zero.

The estimation period covers the period from t = +61 to t = +210 (where t = 0 is the memorandum announcement date). The period following the event dates is used as an estimation period following studies by Stickel [1986] and Holthausen and Leftwich [1986]. Stickel [1986, p. 203], arguing in the case of bond rating changes, states that:

> [R]ating agencies, responding to the changing
> financial conditions of the companies they follow,
> tend to increase the rating of companies recently
> experiencing positive abnormal returns and decrease
> the rating of companies recently experiencing nega-
> tive abnormal returns. Using the period prior to a
> rating change as the benchmark period would imply
> this 'unusual' performance is expected to continue
> in the event period.

The market portfolio returns and the stock returns are
provided by the University of Chicago Center for Research in
Security Prices (CRSP).

The deviation of actual return from expected return
(abnormal return) is defined for security i in period t as

$$AR_{it} = R_{it} - (\hat{\alpha}_i + \hat{\beta}_i R_{mt}) \qquad . . . (3.2)$$

where $\hat{\alpha}_i$ and $\hat{\beta}_i$ are the parameters estimated from equation
(3.1).

Average abnormal return (AAR) for portfolio j in period
t is computed as

$$AAR_{jt} = \sum_{i=1}^{n} AR_{it} / n, \qquad . . . (3.3)$$

where n is the number of securities in portfolio j with a
computed abnormal return in period t.

The cumulative average abnormal return (CAAR) over
various holding periods of k days from days t to t+k is

calculated as:

$$CAAR_{t,t+k} = \sum_{\tau=t}^{t+k} AAR_{\tau} \qquad \text{. . . (3.4)}$$

3.2.2 The Test Statistic

The statistical significance of the abnormal returns from zero is tested by t-statistics, a parametric test which standardizes portfolio average abnormal returns. The test statistics are assumed to be distributed approximately unit normal in the absence of an event.

In order to calculate the t-statistics, abnormal returns are first standardized for each stock i by their estimated standard deviation over event days +61 to +160. For all definitions of abnormal performance, the formula is

$$SAR_{it} = AR_{it} / \left[\sum_{t=+61}^{+160} (AR_{it} - \overline{AR_i})^2 / 99 \right]^{1/2} \qquad \text{. . . (3.5)}$$

where $\overline{AR_i}$ is the average daily abnormal return on security i over event days +61 to +160. The SAR_{it} are distributed approximately Student-t with 99 degrees of freedom (assuming that the AR_{it} are normally distributed with mean zero and constant variance). Standardized abnormal returns are used

to calculate t-statistics by the formula

$$t_{j\tau} = \sum_{i=1}^{n} \left(\sum_{t=1}^{k} SAR_{it} / k^{1/2} \right) / n^{1/2} \qquad \ldots \ (3.6)$$

with n-1 degrees of freedom, where n is the number of securities in portfolio j and k is the number of days over which SAR_{it} are cumulated.

3.3 Sample Size and Sampling Procedures

3.3.1 Period of Study

This paper examines common stock ranking changes made by Standard & Poor's during the twenty-four month period from June 1, 1985 to May 30, 1987 (and published in the Stock Guide from July 1985 to June 1987). During this period there were 1,879 common stock ranking changes published in the Stock Guide.[23] Table 3.1 lists the population of ranking changes by the seven major categories tested. These categories are Within-Class Upgrades, Within-Class Downgrades, Across-Class Upgrades, Across-Class Downgrades, Ranking to NR, NR to a High Ranking, and NR to a Low Ranking. In addition to these seven categories, the

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[23] Standard & Poor's made ranking changes on 482 of the 496 business days during the two-year period for a mean of 3.79 ranking changes made per day.

following ranking changes are also tested: A to A+, A- to A,
B to B+, B- to B, A+ to A, A to A-, B+ to B, B to B-, B+ to
A-, C to B-, A- to B+, and B- to C. Table 3.2 lists the
population of ranking changes during the two-year period of
study.

During the period from May 1, 1985 to June 30, 1987,
the stock market rose sharply in value. The Dow Jones
Industrial Average rose in value by 97% (1242.05 on May 1,
1985 to 2446.91 on June 30, 1987), and the Standard & Poor's
500 stock index rose in value during the same period by 73%
(178.37 to 307.90). However, during this two-year "bull"
market (prior to the October 1987 stock market crash),
Standard & Poor's downgraded 1,172 common stocks while they
upgraded only 408 common stocks.

3.3.2 Sample Selection Procedure

Memoranda containing daily ranking changes from June 1,
1985 to May 30, 1987 were obtained by request from Standard
& Poor's.[24] For inclusion in the sample, a firm must be
included in the University of Chicago Center for Research in

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[24] In a letter (dated September 27, 1988) which accom-
panied the memoranda, Standard & Poor's request that the
documents be kept confidential. Therefore, individual
company names, dates, and stock rankings are not published
in this paper. However, since the ranking changes are
published monthly in the Stock Guide, the specific dates of
the ranking changes are the only unpublished information.

Security Prices (CRSP) Daily Stock Files during the period
of study. Of the 1,879 ranking changes made by Standard &
Poor's during the two-year sample period, 1,025 ranking
changes were made for companies which have insufficient data
in the CRSP files, leaving 834 ranking changes in the
sample. Of the remaining 834 ranking changes, 10 ranking
changes were deleted since they changed by more than one
ranking, leaving a sample of 824 ranking changes.[25] Table
3.3 lists the 824 sample ranking changes by category.

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[25] Changes by more than one ranking are deleted since
they would bias results in favor of finding significant
abnormal returns.

Table 3.1

**Population by category. Common stock ranking
changes published in the Standard & Poor's
<u>Stock Guide</u>. July 1985 – June 1987.**

	Prior	New	Pop.
Within-Class Upgrades	A	A+	35
	A-	A	61
	B	B+	71
	B-	B	80
			247
Within-Class Downgrades	A+	A	50
	A	A-	109
	B+	B	275
	B	B-	298
			732
Across-Class Upgrades	B+	A-	60
	C	B-	97
	D	C	2
			159
Across-Class Downgrades	A-	B+	185
	B-	C	226
	C	D	15
			426
Ranking to NR	A	NR	3
	A-	NR	6
	B+	NR	3
	B	NR	3
	B-	NR	2
	C	NR	3
	D	NR	5
			25
NR to High Ranking	NR	A+	3
	NR	A	4
	NR	A-	3
	NR	B+	44
			54
NR to Low Ranking	NR	B	61
	NR	B-	47
	NR	C	83
	NR	D	25
			216

Table 3.2

Transition matrix of common stock ranking changes. Population of 1879 changes published in S & P <u>Stock Guide</u>. July 1985 - June 1987.

	New Ranking										
Prior Ranking	A+	A	A-	B+	B	B-	C	D	NR	Liq	T.
A+	–	50	0	0	0	0	0	0	0	0	50
A	35	–	109	0	0	0	0	0	3	0	147
A-	0	61	–	185	0	1	0	0	6	0	253
B+	0	1	60	–	275	0	1	1	3	1	342
B	0	0	0	71	–	298	7	3	3	0	382
B-	0	0	0	0	80	–	226	1	2	1	310
C	0	0	0	1	0	97	–	15	3	0	116
D	0	0	0	0	0	0	2	–	5	0	7
NR	3	4	3	44	61	47	83	25	–	2	272
Liq	0	0	0	0	0	0	0	0	0	–	0
Total	38	116	172	301	416	443	319	45	25	4	1879

Table 3.3

Sample of common stock ranking changes by category.
Memorandum dates from June 1985 to May 1987.

	Prior	New	Sample	Total
Within-Class Upgrades	A	A+	20	
	A-	A	31	
	B	B+	26	
	B-	B	40	117
Across-Class Upgrades	B+	A-	27	
	C	B-	46	
	D	C	1	74
All Upgrades				191
Within-Class Downgrades	A+	A	33	
	A	A-	70	
	B+	B	138	
	B	B-	140	381
Across-Class Downgrades	A-	B+	102	
	B-	C	95	
	C	D	4	201
All Downgrades				582
Ranking to NR	A-	NR	5	
	B+	NR	1	
	B	NR	2	
	D	NR	1	9
NR to High Ranking	NR	A	1	
	NR	B+	8	9
NR to Low Ranking	NR	B	14	
	NR	B-	3	
	NR	C	14	
	NR	D	2	33
NR to Ranking				42
All Ranking Changes				824

CHAPTER FOUR

EMPIRICAL RESULTS

4.1 Introduction

The empirical results from investigating the information content of Standard & Poor's common stock ranking changes are reported in this chapter. Section 4.2 contains a description of the common stock price response at the memorandum dates to upgrades made by Standard & Poor's, and section 4.3 contains a description of the common stock price response at the memorandum dates to downgrades made by the Standard & Poor's corporation. Tests performed to determine whether the positive (negative) abnormal returns found before upgrades (downgrades) are a function of firm size are presented in section 4.4. The effect of the initiation or withdrawal of a Standard & Poor's ranking on stock prices is examined in section 4.5. Section 4.6 contains a description of the risk and return characteristics of portfolios of common stocks both before and after a ranking change. Finally, empirical results are summarized in section 4.7.

4.2 Information Content at the Memorandum Dates: Upgrades

The daily average abnormal returns (AAR), t-statistics, and cumulative average abnormal returns (CAAR) from day -50 through day +50, where day 0 is the Standard & Poor's memorandum date, are calculated for each portfolio. The portfolios of upgraded stocks, A to A+, A- to A, B to B+, B- to B, Within-Class Upgrades, B+ to A-, C to B-, Across-Class Upgrades, and All Upgrades, are contained in tables 4.1 through 4.9, respectively. A summary of confounding events for All Upgrades on days -5 through 5, where day 0 is the Standard & Poor's memorandum date, is presented in table 4.10.

When examined separately, the empirical results for portfolios of upgraded stocks (A to A+, A- to A, B to B+, B- to B, B+ to A-, and C to B-) offer evidence from which inferences are difficult to reach. However, when grouped into portfolios of Within-Class Upgrades, Across-Class Upgrades, and All Upgrades, the empirical results provide a more stable pattern from which inferences can be drawn.

Empirical results for common stocks upgraded from A to A+ by Standard & Poor's are summarized in table 4.1. For these 20 companies, there is little continuity in daily AARs. However, an upward movement in AARs begins on day -1 as CAARs rise by 1.13 percentage points during the four day period from day -1 to day 2. CAARs reach a peak of 1.24% on

day 2. Statistically significant positive AARs are found on day -7, with an AAR (t-statistic) of 0.73% (2.36), and day 6, with an AAR (t-statistic) of 0.57% (2.13). Statistically significant negative AARs are found on day 8, with an AAR (t-statistic) of -0.75% (-2.24), and day 10, with an AAR (t-statistic) of -1.05% (-3.09).

Empirical results for the portfolio of stocks upgraded from A- to A are reported in table 4.2. This portfolio of 31 stocks has a statistically significant negative AAR (t-statistic) on days -30 to -21 of -0.16% (-2.13), followed by statistically significant positive AARs on day -9, with an AAR (t-statistic) of 0.79% (2.69), and day -5, with an AAR (t-statistic) of 0.50% (2.08). The CAARs for this portfolio reach a peak of 2.13% on day 6.

Table 4.3 contains the results for the portfolio of 26 stocks upgraded from B to B+. This portfolio has a statistically significant positive AAR (t-statistic) on day -1 of 0.96% (2.12), and CAARs reach a maximum of 1.28% on day 0. Following day 0, CAARs fall on days 1 through 5 by 1.03 percentage points.

The results for the portfolio of 40 stocks upgraded from B- to B are reported in table 4.4. For this portfolio, CAARs rise prior to the memorandum date to 1.65% on day -1. However, a statistically significant drop in AARs occurs on day 0, with an AAR (t-statistic) of -0.86% (-2.21). Following another negative AAR on day 1, a statistically

significant positive AAR occurs on day 2, with an AAR (t-statistic) of 0.58% (2.15). CAARs finally reach a high of 2.28% on days 21 to 30.

Table 4.5 contains the empirical results for the Within-Class Upgrades portfolio, which consists of 117 stocks upgraded from A to A+, A- to A, B to B+, and B- to B. For this larger portfolio, one notable finding is the absence of statistically significant AARs prior to the memorandum date. The only statistically significant AAR is on day 6, with an AAR (t-statistic) of 0.34% (2.22). However, there is a discernable pattern in AARs prior to the memorandum date. CAARs rise by 1.47 percentage points from day -9 to day -1. For the fifty days subsequent to day 0 there is no continuity in AARs, while CAARs peak at 1.47% on day 9. Thus, these results provide weak evidence that information is incorporated in security prices prior to the memorandum date.

The results for 27 stocks upgraded by Standard & Poor's from B+ to A- are reported in table 4.6. Again, a notable rise in CAARs occurs prior to the memo-randum date. CAARs rise by 3.08 percentage points from day -8 to day -2, reaching a peak of 2.46% on day -2. A statis-tically significant negative AAR (t-statistic) of -0.59% (-2.60) occurs on day 4, and a statistically significant positive AAR (t-statistic) of 0.63% (2.12) occurs on day 8.

The empirical results for 46 stocks upgraded from C to

B- are contained in table 4.7. This portfolio exhibits the
most marked increase in CAARs prior to day 0. CAARs rise by
3.70 percentage points during the eight-day period from day
-9 to day -2, reaching a peak of 3.30% on day 2. During
this eight-day period, statistically significant positive
AARs occur on days -7, -3, and -2, with AARs (t-statistic)
of 0.78% (2.33), 0.89% (2.79), and 1.70% (3.67),
respectively. The eight-day rise in CAARs of 3.70
percentage points is followed by a seven-day reversal by
2.39 percentage points (days -1 to 5). Statistically
significant positive AARs also occur on days 6 and 10.

Table 4.8 reports the results for the Across-Class
Upgrades portfolio, which consists of 74 stocks upgraded
from B+ to A-, C to B-, and D to C. For this large
portfolio, CAARs rise by 3.58 percentage points from day -9
to day -2, peaking on day -2 at 3.11%. Statistically
significant positive AARs (t-statistic) of 0.75% (2.88),
0.76% (3.11), and 1.28% (3.91), occur on days -7, -3, and
-2, respectively. This portfolio provides stronger evidence
than the Within-Class Upgrades portfolio that information is
incorporated in security prices prior to the memorandum
date.

The empirical results for the All Upgrades portfolio
are contained in table 4.9. When Within-Class Upgrades and
Across-Class Upgrades are joined to form one large portfolio
of 191 stocks, a more discernible pattern in AARs develops.

AARs are positive for each of the nine days prior to the
memorandum date. During this nine-day period, CAARs rise by
2.09 percentage points, reaching a peak of 1.85% on day -1;
and statistically significant positive AARs occur on days
-9, -7, -3, and -2, with AARs (t-statistic) of 0.24% (2.22),
0.33% (2.35), 0.39% (2.87), and 0.49% (1.97), respectively.
This nine-day rise in CAARs is followed by a reversal of
0.87 percentage points on days 0, 1, 2, 3, and 4. Thus, for
stocks upgraded by Standard & Poor's, information is fully
incorporated in stock prices prior to the memorandum date,
which suggests that Standard & Poor's upgrades are made in
response to the public release of information. However,
the results on days -10 and 6 do not fit this pattern. The
AAR (t-statistic) on day -10 is -0.35% (-2.06), and the AAR
(t-statistic) on day 6 is 0.40% (2.61). The statistically
significant positive AAR on day 6 may be the result of
customers of the Interactive Data Corporation buying stocks
which were recently upgraded by Standard & Poor's.

In order to reach stronger inferences from these
results, a <u>Wall Street Journal Index</u> search for confounding
events is necessary. The frequency of confounding events
reported in the <u>Wall Street Journal</u> for All Upgrades, by
type of confounding event on days -5 through 5, are reported
in table 4.10. Since net incomes were announced on days -4
through 0 for 186 of the 191 companies upgraded by Standard
& Poor's, it is apparent that Standard & Poor's upgrades

stocks subsequent to the public release of information.
However, due to the absence of confounding events on days
-10 and 6, the statistically significant AARs on days -10
(negative) and 6 (positive) are puzzling, but both AARs may
be the result of a sample size which is small when compared
with the All Downgrades portfolio.

4.3 Information Content at the Memorandum Dates: Downgrades

The daily average abnormal returns (AAR), t-statistics,
and cumulative average abnormal returns (CAAR) from day -50
through day +50, where day 0 is the Standard & Poor's
memorandum date, are calculated for each portfolio. The
portfolios of downgraded stocks, A+ to A, A to A-, B+ to B,
B to B-, Within-Class Downgrades, A- to B+, B- to C, C to D,
Across-Class Downgrades, and All Downgrades, are reported in
tables 4.11 through 4.20, respectively. A summary of
confounding events for All Downgrades on days -5 through 5,
where day 0 is the Standard & Poor's memorandum date, is
presented in table 4.20.

The empirical results for the 33 stocks downgraded from
A+ to A are reported in table 4.11. These stocks' returns
exhibit a dramatic downturn prior to the memorandum date.
Statistically significant AARs (t-statistic) of -0.24%
(-2.26), -0.88% (-3.38), -0.68% (-2.26), 0.46% (2.08),

-0.80% (-2.28), -0.67% (-2.49), and -0.43% (-2.02) are found
on days -50 to -41, -6, -5, -4, -2, -1, and 0, respectively.
While CAARs reach -4.59% on day 0, they continue to fall for
the 50 days subsequent to day 0, reaching -6.83% on days 41
to 50. Thus, for these stocks downgraded from A+ to A,
stock prices show a steady marked decline for approximately
two months following the downgrading by Standard & Poor's.

The results for the 70 companies downgraded from A to
A- are reported in table 4.12. The only AAR for these
stocks which is statistically different from zero occurs on
day 6, with an AAR (t-statistic) of -0.35% (-2.00). Other
than day 0, there is little movement in the AARs, and the
CAAR on day 0 is positive 0.20%. Thus, there is a striking
contrast between the AARs for A+ to A downgrades and A to A-
downgrades.

Table 4.13 contains the results for companies down-
graded from B+ to B. For these 138 companies, there are
several significant reversals in AARs. The statistically
significant AARs (t-statistic) are as follows: -0.13%
(-1.97) on days -50 to -41, 0.26% (2.09) on day -10, -0.32%
(-2.07) on day -7, -0.59% (-3.79) on day -2, 0.33% (3.25) on
day 3, and -0.44% (-2.62) on day 8. These reversals in AARs
cause an interesting pattern in CAARs. CAARs fall by 0.91
percentage points from days -8 to -1, rise by 0.85 percen-
tage points from days 0 to 7, and fall by 0.89 percentage
points during the next four periods.

The results for the 140 firms downgraded from B to B-
are reported in table 4.14. CAARs reach a low of -1.56% on
day -1, following a statistically significant negative AAR
(t-statistic) of -0.84% (-3.91) on day -1. A statistically
significant positive AAR (t-statistic) of 0.75% occurs on
day 1.

Table 4.15 contains the results for the Within-Class
Downgrades portfolio, which includes stocks downgraded from
A+ to A, A to A-, B+ to B, and B to B- by Standard & Poor's.
For this large portfolio of 381 stocks, CAARs reach a low of
-1.20% on day -1, which is further support that information
is fully incorporated in security prices prior to the
memorandum date. Statistically significant negative AARs
(t-statistic) of -0.21% (-2.16), -0.48% (-3.52), -0.43%
(-3.13), and -0.31% (-2.94) occur on days -5, -2, -1, and 8.

The empirical results for the 102 downgrades from A- to
B+ are presented in table 4.16. The only statistically
significant AAR (t-statistic) for this portfolio, -0.16%
(-3.24%), occurs on days 21 to 30. While CAARs reach
-0.75% on day 0, CAARs continue to fall subsequent to the
memorandum date, reaching -1.21% on days 41 to 50.

The results for the 95 stocks downgraded from B- to C
are contained in table 4.17. A statistically significant
negative AAR (t-statistic) of -0.99% (-2.47) occurs on day
-1, and CAARs reach a low of -3.55% on day 1. A strong
reversal in CAARs occurs following day 0, with CAARs rising

to -0.70% on days 41 to 50.

Table 4.18 contains the results for the four stocks downgraded from C to D. The AAR (t-statistic) on day -1 is -29.55% (-10.62), and CAARs reach a low of -44.68% on day 10. Each of these four companies filed Chapter 11 bankruptcy on day -1.

The results for the portfolio of 201 Across-Class Downgrades, which includes downgrades from A- to B+, B- to C, and C to D, are reported in table 4.19. For this large portfolio, statistically significant negative AARs (t-statistic) of -0.15% (-2.08) and -1.01% (-2.82) occur on days -40 to -31 and day -1, respectively. CAARs reach a low of -2.77% on day 1.

Within-Class Downgrades and Across-Class Downgrades are combined to form the All Downgrades portfolio of 582 stocks, and empirical results for the All Downgrades portfolio are reported in table 4.20. Statistically significant negative AARs (t-statistic) of -0.23% (-2.49), -0.30% (-3.03), and -0.63% (-4.12) are found on days -5, -2, and -1, respectively. CAARs reach a low of -1.68% on day 0. These results provide further evidence that Standard & Poor's common stock ranking changes are made in response to publicly released information.

In order to reach stronger inferences from these results, a Wall Street Journal Index search for confounding events is necessary. The frequency of confounding events

reported in the Wall Street Journal for All Downgrades, by
type of confounding event on days -5 to 5, are reported in
table 4.21. Of the 582 stocks downgraded by Standard &
Poor's during the two-year period, 565 had a public release
of net income reported in the Wall Street Journal during the
five-day period from day -4 to day 0. Thus, Standard &
Poor's downgrades common stocks subsequent to the public
release of information.

4.4 Abnormal Returns and Firm Size

Regression tests are performed to determine whether the
positive (negative) abnormal returns found prior to the
memorandum dates of upgraded (downgraded) companies are a
function of firm size. The dependent variable is the
abnormal return for each company cumulated over event days
-3, -2, and -1. A regression test is performed for both
upgrades and downgrades for each of the three independent
variables: total assets, sales, and market value. Table
4.22 contains the results of the three regressions involving
upgraded companies, and table 4.23 contains the results of
the tests with downgraded companies.

The hypothesis that positive AARs found prior to
upgrades are inversely related to firm size is rejected
based on the results reported in table 4.22. Statistically

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insignificant t-statistics of -0.571, -1.399, and -0.962 are found for total assets, sales, and market value, respectively.

Table 4.23 reports the finding that negative AARs found prior to downgrades are not a function of firm size. Statistically insignificant t-statistics of -0.168, 0.079, and 1.407 are found for total assets, sales, and market value, respectively.

4.5 The Initiation and Withdrawal of a Ranking

The daily average abnormal returns (AAR), t-statistics, and cumulative average abnormal returns (CAAR) from day -50 through day +50, where day 0 is the Standard & Poor's memorandum date, are calculated for four portfolios of common stocks involving the initiation or withdrawal of a ranking.

Table 4.24 contains the results of companies changed from a ranking to NR. For these nine companies, statistically significant negative AARs (t-statistic) of -4.12% (-2.49), -5.90% (-5.55), -3.84% (-3.78), -2.31% (-3.51), and -3.54% (-4.83) occur on days -2, -1, 0, 6, and 8, respectively. CAARs reach a low of -23.63% on day 9.

Table 4.25 contains empirical results for the nine companies changed by Standard & Poor's from NR to a high

ranking (A+, A, A-, and B+). None of the AARs are statistically different from zero, yet CAARs fall to -4.83% on days 41 to 50.

Table 4.26 reports results for 33 companies changed by Standard & Poor's from NR to a low ranking (B, B-, C, and D). The only statistically significant AAR occurs on day -4, with an AAR (t-statistic) of 1.41% (2.43).

The results of all companies changed from NR to a ranking are presented in table 4.27. The only statistically significant AAR occurs on day -4, with an AAR of 1.13%, and a t-statistic of 2.26. Thus, CAARs fall to -17.82% on day 0 for the Ranking to NR portfolio reported in table 4.24, while the CAAR on day 0 for the NR to Ranking portfolio is -0.59%.

The return and standard deviation of return for both a pre-event period and a post-event period are calculated for the four portfolios involving the initiation or withdrawal of a ranking. The pre-event period is the 50 days prior to the memorandum date, and the post-event period is the 50 days subsequent to the memorandum date. The return and standard deviation of return for the four portfolios are presented in table 4.28. Based on these data, it appears that Standard & Poor's rankings are a better measure of risk than return, which is consistent with previous findings. Using the standard deviation of returns as a measure of risk, the No Ranking to High Ranking portfolio contains the

least amount of risk both before the ranking change (1.74%)
and after the ranking change (1.94%). However, the No
Ranking to Low Ranking portfolio has the highest return both
before (6.85%) and after (5.37%) the ranking change.

A paired t-test is performed to the four groups to
determine whether portfolio betas change subsequent to the
memorandum date. The pre-event period is from day -250 to
day -51, and the post-event period is from day 51 to day
250. The results of the (two-tailed) t-tests are contained
in table 4.29.

For the Ranking to NR portfolio, the mean beta rises
from 0.80 to 0.82, and the low values for both the pre-
event portfolio beta and the post-event portfolio beta are
surprising. However, as reported in table 4.30, four of the
nine companies in the portfolio are public utilities (Kansas
Gas & Electric, Middle South Utilities, Gulf States Utility,
and Duquesne Light), which usually have low betas.

For the No Ranking to High Ranking portfolio, the mean
beta falls by a statistically significant 0.27 points from
1.02 to 0.75. The No Ranking to Low Ranking portfolio mean
beta falls from 1.00 to 0.98. Finally, the No Ranking to
Ranking portfolio mean beta falls from 1.01 to 0.93.

4.6 Risk and Return Characteristics of Rankings

The return and standard deviation of return for both a pre-event period and a post-event period are calculated for the portfolios of upgraded and downgraded stocks. The upgraded portfolios include A to A+, A- to A, B+ to A-, B to B+, B- to B, C to B-, Within-Class Upgrades, Across-Class Upgrades, and All Upgrades; and the downgraded portfolios include A+ to A, A to A-, A- to B+, B+ to B, B to B-, B- to C, C to D, Within-Class Downgrades, Across-Class Downgrades, and All Downgrades. The pre-event period is the 50 days prior to the memorandum date, and the post-event period is the 50 days subsequent to the memorandum date. The return and standard deviation of return for these nineteen port-folios are presented in table 4.31.

The most striking result reported in table 4.31 is the correspondence between Standard & Poor's rankings and risk (measured by the standard deviation of returns), both before and after ranking changes. For portfolios before an upgrade, the following standard deviations (ranking) are found: 1.68% (A), 1.53% (A-), 2.03% (B+), 2.13% (B), 2.55% (B-), and 2.92% (C). For portfolios subsequent to an upgrading, the following standard deviations (ranking) are found: 1.79% (A+), 1.75% (A), 1.85% (A-), 2.17% (B+), 2.51% (B), and 3.29% (B-). Thus, except for the portfolio up-graded from A- to A, risk rises for each lower ranking, both

before and after ranking changes.

For portfolios prior to a downgrading, the following standard deviations (ranking) are found: 1.72% (A+), 1.76% (A), 1.80% (A-), 2.35% (B+), 3.20% (B), 4.09% (B-), and 7.71% (C). For portfolios subsequent to a downgrading, the following standard deviations (ranking) are found: 1.73% (A), 1.88% (A-), 1.94% (B+), 2.46% (B), 3.07% (B-), 3.94% (C), and 7.73% (D). Thus, for portfolios of downgrades, risk also rises for each lower ranking, both before and after ranking changes.

While Standard & Poor's rankings are found to be a reliable measure of risk, no relation is found between rankings and return, which is consistent with previous findings. This study expands previous research by examining risk and return both before and after a ranking change.

A paired t-test is performed to the nineteen groups to determine whether portfolio betas change subsequent to the memorandum date. The pre-event period is from day -250 to day -51, and the post-event period is from day 51 to day 250. The upgraded companies are tested for a fall in the mean portfolio beta, and the results of the (one-tailed) t-tests are contained in table 4.32. The downgraded companies are tested for a rise in the portfolio beta, and the results of the (one-tailed) t-tests are contained in table 4.33. Finally, the results from grouping the mean portfolio betas by ranking are presented in table 4.32.

As reported in table 4.32, eight of the nine portfolios
of upgrades experienced a decline in beta following ranking
changes, and four of the portfolios (B to B+, C to B-,
Across-Class Upgrades, and All Upgrades) had statistically
significant drops in beta following ranking changes. The
mean beta for the B to B+ portfolio fell from 1.42 to 1.20,
with a t-statistic of -1.95. The C to B- portfolio beta
fell from 1.32 to 1.12, with a t-statistic of -1.86. For
the Across-Class Upgrades portfolio, the mean beta fell from
1.25 to 1.10, with a t-statistic of -1.94. Finally, the
mean beta for the All Upgrades portfolio of 191 stocks fell
from 1.23 to 1.12, with a t-statistic of -2.51.

Table 4.33 contains the results of the paired t-test
for a rise in the mean portfolio beta following ranking
changes for downgrades. Seven of the ten portfolios of
downgrades had a rise in beta following ranking changes.
However, only the A- to B+ portfolio had a statistically
significant rise in beta. The A- to B+ beta rose from 1.02
to 1.09, with a t-statistic of 1.76. The All Downgrades
portfolio experienced only a slight, statistically
insignificant, rise in beta from 1.07 to 1.09 following the
memorandum date. However, the mean beta for the All
Downgrades portfolio is lower than the mean beta for the All
Upgrades portfolio, both before and after ranking changes.

The mean portfolio betas calculated for upgrades (table
4.32) and downgrades (table 4.33) are combined in table 4.34

to determine whether or not Standard & Poor's rankings are a
good measure of risk as measured by beta. The left four
columns of table 4.34 contain the data in tables 4.32 and
4.33. Each row contains all possible combinations for that
particular ranking. For example, consider the row for
stocks ranked A. The second column is for pre-event
upgrades, and the beta of 1.16 represents the portfolio of
20 companies soon to be upgraded from A to A+ (table 4.32).
The third column is for pre-event downgrades, and the beta
of 1.05 represents the portfolio of 70 stocks which were
subsequently downgraded from A to A- (table 4.33). The
fourth column is for post-event upgrades, and the mean beta
of 1.04 is for the 31 stocks following a ranking change from
A- to A. In column five, post-event downgrades, the
portfolio beta for stocks recently downgraded from A+ to A
is 1.04. Column six contains the weighted-average of
columns two and three, which is 1.07. Column seven contains
the weighted-average of columns four and five, which is
1.04. Column eight contains the weighted-average of columns
two and four, which is 1.09, and column nine contains the
weighted-average of columns three and five, which is 1.05.
Finally, column ten contains the weighted-average for
columns two, three, four, and five, which represents the
mean beta for all stocks ranked A.

As reported in column ten of table 4.34, there is a
close relation between Standard & Poor's common stock

rankings and beta. Except for stocks ranked A-, there is a
rise in beta for each lower ranking. The following betas
(ranking) are found: 1.04 (A+), 1.06 (A), 1.03 (A-), 1.09
(B+), 1.10 (B), 1.14 (B-), 1.21 (C), and 1.64 (D).

4.7 Summary of Empirical Results

A *Wall Street Journal Index* search indicates that
Standard & Poor's makes ranking changes subsequent to
publicly released earnings announcements. The adjustment of
stock returns differs by type of ranking change. Returns
adjust prior to the memorandum date for the All Upgrades
portfolio. However, a statistically significant positive
AAR occurs on day 6. Thus, that customers of the Inter-
active Data Corporation may trade based on upgrades by
Standard & Poor's cannot be ruled out, but the AAR on day 6
may be the result of a relatively small sample size for
upgrades. For the All Downgrades portfolio, stock returns
are fully adjusted to earnings announcements on day 0.
Therefore, a Standard & Poor's anomaly is not found.

Regression tests find that positive (negative) AARs
prior to upgrades (downgrades) are not a function of firm
size, which is consistent with findings of Huberman and
Kandel [1987] for Value Line rankings. The measures of firm
size used are total assets, sales, and market value.

Companies with the initiation (NR to Ranking) or with-
drawal of a ranking (Ranking to NR) are examined. The
Ranking to NR portfolio's CAARs fall to -23.65% on day 9,
while the NR to Ranking portfolio's CAARs are relatively
stable. Also, the NR to High Ranking portfolio's mean beta
falls from 1.02 to 0.75 following the memorandum date.

Rankings are found to be a good measure of risk as
measured by both beta and standard deviation of returns,
which is consistent with previous findings by Haugen [1979],
Muller, Fielitz, and Greene [1983], and Muller and Fielitz
[1987]. The close relation between rankings and risk is
found both before and after ranking changes. Also, the
rankings are not found to be a reliable measure of return,
which is consistent with previous studies.

The results of a paired t-test indicate that mean port-
folio betas change following memorandum dates. For the All
Upgrades portfolio, the mean beta fell from 1.23 to 1.12,
which is statistically significant at α=.01 (one-tailed).
For the All Downgrades portfolio, the mean beta rose from
1.07 to 1.09, which is statistically insignificant.

Table 4.1

Daily average abnormal returns (AAR) in percent and daily
cumulative average abnormal returns (CAAR) in percent for
companies with the following Standard & Poor's ranking
change between June 1, 1985 and May 30, 1987. Event day 0
is the Standard & Poor's memorandum date.

A to A+
n=20

Event Day(s)	AAR	t	CAAR
(-50, -41)	0.04	0.77	0.04
(-40, -31)	-0.08	-0.55	-0.04
(-30, -21)	0.05	0.65	0.01
(-20, -11)	0.05	0.35	0.06
-10	0.09	0.49	0.15
- 9	-0.05	-0.17	0.10
- 8	0.30	0.97	0.40
- 7	0.73	2.36*	1.13
- 6	-0.31	-0.83	0.82
- 5	0.03	0.37	0.85
- 4	-0.25	-0.46	0.60
- 3	-0.19	-0.54	0.41
- 2	-0.30	-0.80	0.11
- 1	0.27	0.89	0.38
0	0.29	0.86	0.67
1	0.48	2.05	1.15
2	0.09	0.12	1.24
3	-0.73	-1.90	0.51
4	-0.21	-0.45	0.30
5	0.11	0.31	0.41
6	0.57	2.13*	0.98
7	0.09	0.38	1.07
8	-0.75	-2.24*	0.32
9	0.52	1.20	0.84
10	-1.05	-3.09**	-0.21
(11, 20)	0.09	0.54	-0.12
(21, 30)	-0.14	-0.61	-0.26
(31, 40)	0.01	0.23	-0.25
(41, 50)	-0.02	-0.25	-0.27

*Significant at α=.05   **Significant at α=.01

Table 4.2

Daily average abnormal returns (AAR) in percent and daily
cumulative average abnormal returns (CAAR) in percent for
companies with the following Standard & Poor's ranking
change between June 1, 1985 and May 30, 1987. Event day 0
is the Standard & Poor's memorandum date.

| | A- to A | | |
| | n=31 | | |
Event Day(s)	AAR	t	CAAR
(-50, -41)	0.07	0.40	0.07
(-40, -31)	0.09	1.67	0.16
(-30, -21)	-0.16	-2.13*	0.00
(-20, -11)	-0.10	-0.93	-0.10
-10	-0.39	-1.46	-0.49
- 9	0.79	2.69*	0.30
- 8	0.27	0.79	0.57
- 7	-0.23	-0.79	0.34
- 6	0.26	0.65	0.60
- 5	0.50	2.08*	1.10
- 4	0.30	1.35	1.40
- 3	0.44	1.81	1.84
- 2	0.05	0.36	1.89
- 1	-0.19	-0.43	1.70
0	-0.09	-0.21	1.61
1	0.39	1.08	2.00
2	0.01	0.13	2.01
3	0.01	-0.26	2.02
4	0.08	0.01	2.10
5	-0.08	-0.45	2.02
6	0.11	0.31	2.13
7	-0.47	-1.64	1.66
8	-0.22	-1.07	1.44
9	-0.40	-1.03	1.04
10	0.44	1.56	1.48
(11, 20)	-0.10	-0.58	1.38
(21, 30)	-0.06	-0.51	1.32
(31, 40)	0.03	0.26	1.35
(41, 50)	-0.02	-0.36	1.33

*Significant at α=.05

Table 4.3

Daily average abnormal returns (AAR) in percent and daily
cumulative average abnormal returns (CAAR) in percent for
companies with the following Standard & Poor's ranking
change between June 1, 1985 and May 30, 1987. Event day 0
is the Standard & Poor's memorandum date.

	B to B+ n=26		
Event Day(s)	AAR	t	CAAR
(-50, -41)	0.20	1.38	0.20
(-40, -31)	-0.21	-1.17	-0.01
(-30, -21)	0.01	0.45	0.00
(-20, -11)	-0.03	-0.37	-0.03
-10	-0.32	-1.13	-0.35
- 9	0.54	1.29	0.19
- 8	0.19	0.81	0.38
- 7	-0.17	-0.63	0.21
- 6	0.37	0.89	0.58
- 5	0.21	0.48	0.79
- 4	-0.32	-0.46	0.47
- 3	-0.07	-0.40	0.40
- 2	-0.45	-1.46	-0.05
- 1	0.96	2.12*	0.91
0	0.37	0.83	1.28
1	-0.08	-0.29	1.20
2	-0.03	-0.09	1.17
3	-0.56	-1.43	0.61
4	-0.28	-0.62	0.33
5	-0.08	-0.51	0.25
6	0.32	0.95	0.57
7	0.09	0.23	0.66
8	0.24	0.42	0.90
9	0.46	1.05	1.36
10	-0.13	-0.50	1.23
(11, 20)	0.09	1.16	1.32
(21, 30)	0.02	0.01	1.34
(31, 40)	-0.36	-2.52*	0.98
(41, 50)	0.12	0.96	1.10

*Significant at α=.05

Table 4.4

Daily average abnormal returns (AAR) in percent and daily
cumulative average abnormal returns (CAAR) in percent for
companies with the following Standard & Poor's ranking
change between June 1, 1985 and May 30, 1987. Event day 0
is the Standard & Poor's memorandum date.

Event Day(s)	AAR	t	CAAR
B- to B n=40			
(−50, −41)	−0.13	−1.53	−0.13
(−40, −31)	0.05	1.71	−0.08
(−30, −21)	0.11	0.85	0.03
(−20, −11)	0.11	1.49	0.14
−10	−0.17	−0.97	−0.03
− 9	0.06	−0.04	0.03
− 8	−0.39	−0.92	−0.36
− 7	0.13	0.70	−0.23
− 6	0.47	1.35	0.24
− 5	−0.09	−0.45	0.15
− 4	0.33	1.25	0.48
− 3	0.27	1.18	0.75
− 2	0.37	0.49	1.12
− 1	0.53	1.13	1.65
0	−0.86	−2.21*	0.79
1	−0.37	−0.68	0.42
2	0.58	2.15*	1.00
3	−0.15	−0.17	0.85
4	−0.30	−0.86	0.55
5	0.33	0.87	0.88
6	0.42	1.28	1.30
7	0.26	0.67	1.56
8	0.23	1.26	1.79
9	0.39	0.84	2.18
10	0.00	0.16	2.18
(11, 20)	0.08	0.68	2.26
(21, 30)	0.02	0.38	2.28
(31, 40)	0.03	−0.18	2.31
(41, 50)	−0.08	0.20	2.23

*Significant at α=.05

Table 4.5

Daily average abnormal returns (AAR) in percent and daily
cumulative average abnormal returns (CAAR) in percent for
companies with the following Standard & Poor's ranking
change between June 1, 1985 and May 30, 1987. Event day 0
is the Standard & Poor's memorandum date.

	Within-Class Upgrades n=117		
Event Day(s)	AAR	t	CAAR
(−50, −41)	0.02	0.23	0.02
(−40, −31)	−0.02	1.10	0.00
(−30, −21)	0.01	−0.13	0.01
(−20, −11)	0.02	0.38	0.03
−10	−0.22	−1.65	−0.19
− 9	0.34	1.90	0.15
− 8	0.03	0.67	0.18
− 7	0.07	0.68	0.25
− 6	0.26	1.18	0.51
− 5	0.15	1.21	0.66
− 4	0.08	1.00	0.74
− 3	0.16	1.24	0.90
− 2	−0.01	−0.55	0.89
− 1	0.39	1.85	1.28
0	−0.19	−0.63	1.09
1	0.04	0.83	1.13
2	0.21	1.35	1.34
3	−0.30	−1.73	1.04
4	−0.18	−0.97	0.86
5	0.10	0.18	0.96
6	0.34	2.22*	1.30
7	0.00	−0.14	1.30
8	−0.05	−0.56	1.25
9	0.22	0.97	1.47
10	−0.09	−0.59	1.38
(11, 20)	0.04	0.88	1.42
(21, 30)	−0.03	−0.30	1.39
(31, 40)	−0.06	−1.06	1.33
(41, 50)	−0.01	0.28	1.32

*Significant at α=.05

Table 4.6

Daily average abnormal returns (AAR) in percent and daily
cumulative average abnormal returns (CAAR) in percent for
companies with the following Standard & Poor's ranking
change between June 1, 1985 and May 30, 1987. Event day 0
is the Standard & Poor's memorandum date.

	B+ to A- n=27		
Event Day(s)	AAR	t	CAAR
(-50, -41)	-0.01	-0.52	-0.01
(-40, -31)	0.07	1.25	0.06
(-30, -21)	-0.02	-0.10	0.04
(-20, -11)	0.19	1.69	0.23
-10	-0.77	-1.34	-0.54
- 9	-0.08	0.07	-0.62
- 8	0.60	1.40	-0.02
- 7	0.40	1.33	0.38
- 6	0.11	0.48	0.49
- 5	0.40	1.66	0.89
- 4	0.29	0.98	1.18
- 3	0.70	1.66	1.88
- 2	0.58	1.65	2.46
- 1	-0.59	-1.42	1.87
0	0.06	0.35	1.93
1	0.23	-0.34	2.16
2	0.05	0.07	2.21
3	-0.48	-1.24	1.73
4	-0.59	-2.60*	1.14
5	0.09	0.44	1.23
6	-0.40	-1.32	0.83
7	0.23	0.83	1.06
8	0.63	2.12*	1.69
9	0.19	0.83	1.88
10	-0.18	-0.90	1.70
(10, 19)	-0.04	-0.56	1.66
(20, 29)	-0.04	-0.32	1.62
(30, 39)	-0.08	-1.10	1.54
(40, 49)	0.04	0.24	1.58

*Significant at α=.05

Table 4.7

Daily average abnormal returns (AAR) in percent and daily
cumulative average abnormal returns (CAAR) in percent for
companies with the following Standard & Poor's ranking
change between June 1, 1985 and May 30, 1987.   Event day 0
is the Standard & Poor's memorandum date.

Event Day(s)	C to B– n=46		
	AAR	t	CAAR
(−50, −41)	0.05	0.51	0.05
(−40, −31)	−0.14	−0.73	−0.09
(−30, −21)	−0.12	−1.26	−0.21
(−20, −11)	0.00	0.48	−0.21
−10	−0.40	−0.41	−0.61
− 9	0.21	1.47	−0.40
− 8	0.74	1.30	0.34
− 7	0.78	2.33*	1.12
− 6	−0.01	0.02	1.11
− 5	−0.48	−0.72	0.63
− 4	0.08	0.13	0.71
− 3	0.89	2.79**	1.60
− 2	1.70	3.67**	3.30
− 1	−0.11	−0.63	3.19
0	−1.04	−2.63*	2.15
1	−0.28	−0.59	1.87
2	−0.57	−1.20	1.30
3	−0.01	0.76	1.29
4	−0.08	0.09	1.21
5	−0.30	−0.99	0.91
6	1.03	2.78**	1.94
7	−0.52	−0.88	1.42
8	0.15	−0.01	1.57
9	−0.52	−1.26	1.05
10	1.37	2.89**	2.42
(11, 20)	0.02	0.23	2.44
(21, 30)	0.05	1.44	2.49
(31, 40)	−0.12	−1.47	2.37
(41, 50)	−0.01	−0.17	2.36

*Significant at α=.05   **Significant at α=.01

Table 4.8

Daily average abnormal returns (AAR) in percent and daily
cumulative average abnormal returns (CAAR) in percent for
companies with the following Standard & Poor's ranking
change between June 1, 1985 and May 30, 1987. Event day 0
is the Standard & Poor's memorandum date.

Across-Class Upgrades
n=74

Event Day(s)	AAR	t	CAAR
(-50, -41)	0.01	-0.01	0.01
(-40, -31)	0.06	0.15	0.07
(-30, -21)	-0.06	-0.90	0.01
(-20, -11)	0.08	1.44	0.09
-10	-0.57	-1.22	-0.48
- 9	0.08	1.17	-0.40
- 8	0.73	1.98	0.33
- 7	0.75	2.88**	1.08
- 6	-0.05	0.13	1.03
- 5	-0.13	0.48	0.90
- 4	0.17	0.71	1.07
- 3	0.76	3.11**	1.83
- 2	1.28	3.91**	3.11
- 1	-0.25	-1.28	2.86
0	-0.58	-1.78	2.28
1	-0.15	-0.81	2.13
2	-0.41	-1.05	1.72
3	-0.17	-0.12	1.55
4	-0.27	-1.50	1.28
5	-0.14	-0.47	1.14
6	0.50	1.40	1.64
7	-0.29	-0.31	1.35
8	0.28	1.19	1.63
9	-0.21	-0.40	1.42
10	0.86	1.89	2.28
(11, 20)	-0.02	-0.25	2.26
(21, 30)	0.02	0.94	2.28
(31, 40)	-0.11	-1.86	2.17
(41, 50)	0.00	-0.02	2.17

**Significant at α=.01

Table 4.9

Daily average abnormal returns (AAR) in percent and daily
cumulative average abnormal returns (CAAR) in percent for
companies with the following Standard & Poor's ranking
change between June 1, 1985 and May 30, 1987. Event day 0
is the Standard & Poor's memorandum date.

Event Day(s)	All Upgrades n=191		
	AAR	t	CAAR
(−50, −41)	0.02	0.20	0.02
(−40, −31)	−0.03	0.95	−0.01
(−30, −21)	−0.02	−0.67	−0.03
(−20, −11)	0.04	1.16	0.01
−10	−0.35	−2.06*	−0.34
− 9	0.24	2.22*	−0.10
− 8	0.30	1.74	0.20
− 7	0.33	2.35*	0.53
− 6	0.14	0.99	0.67
− 5	0.04	1.24	0.71
− 4	0.11	1.23	0.82
− 3	0.39	2.87**	1.21
− 2	0.49	1.97*	1.70
− 1	0.15	0.65	1.85
0	−0.34	−1.57	1.51
1	−0.04	0.13	1.47
2	−0.03	0.43	1.44
3	−0.25	−1.42	1.19
4	−0.21	−1.69	0.98
5	0.01	−0.16	0.99
6	0.40	2.61**	1.39
7	−0.11	−0.37	1.28
8	0.08	0.32	1.36
9	0.05	0.50	1.41
10	0.28	0.68	1.69
(11, 20)	0.02	0.49	1.71
(21, 30)	−0.01	0.34	1.70
(31, 40)	−0.08	−1.98*	1.62
(41, 50)	0.00	0.17	1.62

*Significant at α=.05   **Significant at α=.01

Table 4.10

Frequency of confounding events reported in the <u>Wall Street Journal Index</u> from day -5 to day 5 for common stocks upgraded by Standard & Poor's between June 1, 1985 and May 30, 1987. Event day 0 is the Standard & Poor's memorandum date.

Confounding Event	Event Day											
	-5	-4	-3	-2	-1	0	1	2	3	4	5	T.
Net Income	0	5	10	20	82	69	0	0	0	0	0	186
Dividend	1	3	2	6	4	3	0	2	2	0	0	23
Stock Split	0	0	0	0	1	0	1	2	0	0	1	5
New Director	0	0	0	0	0	1	1	0	1	0	0	3
Takeover	1	0	0	0	0	0	0	0	1	0	0	2
Miscellaneous Positive News	0	3	1	2	4	2	0	1	2	2	1	18
Total	2	11	13	28	91	75	2	5	6	2	2	237

Table 4.11

Daily average abnormal returns (AAR) in percent and daily
cumulative average abnormal returns (CAAR) in percent for
companies with the following Standard & Poor's ranking
change between June 1, 1985 and May 30, 1987. Event day 0
is the Standard & Poor's memorandum date.

| | A+ to A | | |
| | n=33 | | |
Event Day(s)	AAR	t	CAAR
(-50, -41)	-0.24	-2.26*	-0.24
(-40, -31)	-0.13	-1.10	-0.37
(-30, -21)	-0.13	-1.81	-0.50
(-20, -11)	-0.07	-0.64	-0.57
-10	0.05	0.46	-0.52
- 9	-0.48	-1.24	-1.00
- 8	0.03	0.49	-0.97
- 7	-0.34	-1.28	-1.31
- 6	-0.88	-3.38**	-2.19
- 5	-0.68	-2.26*	-2.87
- 4	0.46	2.08*	-2.41
- 3	-0.28	-0.86	-2.69
- 2	-0.80	-2.28*	-3.49
- 1	-0.67	-2.49*	-4.16
0	-0.43	-2.02*	-4.59
1	-0.26	-0.33	-4.85
2	-0.43	-1.15	-5.28
3	-0.24	-0.38	-5.52
4	-0.10	-0.17	-5.62
5	-0.20	-0.57	-5.82
6	0.44	1.52	-5.38
7	-0.50	-1.53	-5.88
8	-0.36	-1.16	-6.24
9	-0.29	-0.63	-6.53
10	0.12	1.09	-6.41
(11, 20)	-0.21	-1.88	-6.62
(21, 30)	-0.05	-0.34	-6.67
(31, 40)	-0.04	-0.56	-6.71
(41, 50)	-0.12	-1.23	-6.83

*Significant at α=.05   **Significant at α=.01

Table 4.12

Daily average abnormal returns (AAR) in percent and daily
cumulative average abnormal returns (CAAR) in percent for
companies with the following Standard & Poor's ranking
change between June 1, 1985 and May 30, 1987. Event day 0
is the Standard & Poor's memorandum date.

	A to A- n=70		
Event Day(s)	AAR	t	CAAR
(-50, -41)	0.05	1.11	0.05
(-40, -31)	0.03	0.45	0.08
(-30, -21)	-0.08	-1.11	0.00
(-20, -11)	-0.11	-1.68	-0.11
-10	0.18	0.76	0.07
- 9	-0.07	-0.33	0.00
- 8	0.37	1.99	0.37
- 7	0.06	0.72	0.43
- 6	-0.33	-1.52	0.10
- 5	-0.23	-0.88	-0.13
- 4	0.08	1.09	-0.05
- 3	-0.04	-0.15	-0.09
- 2	0.13	0.39	0.04
- 1	0.06	0.86	0.10
0	0.10	0.80	0.20
1	0.05	0.19	0.25
2	0.31	1.56	0.56
3	-0.13	-0.78	0.43
4	-0.09	-0.27	0.34
5	0.28	1.72	0.62
6	-0.35	-2.00*	0.27
7	-0.11	-0.07	0.16
8	0.03	-0.39	0.19
9	0.00	-0.31	0.19
10	0.14	1.37	0.33
(11, 20)	-0.11	-1.45	0.22
(21, 30)	0.01	0.24	0.23
(31, 40)	0.04	0.00	0.27
(41, 50)	-0.11	-1.50	0.16

*Significant at α=.05

Table 4.13

Daily average abnormal returns (AAR) in percent and daily
cumulative average abnormal returns (CAAR) in percent for
companies with the following Standard & Poor's ranking
change between June 1, 1985 and May 30, 1987. Event day 0
is the Standard & Poor's memorandum date.

	B+ to B n=138		
Event Day(s)	AAR	t	CAAR
(-50, -41)	-0.13	-1.97*	-0.13
(-40, -31)	0.03	0.78	-0.10
(-30, -21)	-0.04	0.01	-0.14
(-20, -11)	-0.01	0.12	-0.15
-10	0.26	2.09*	0.11
- 9	0.06	1.64	0.17
- 8	-0.25	-0.93	-0.08
- 7	-0.32	-2.07*	-0.40
- 6	0.13	1.37	-0.27
- 5	-0.04	-0.30	-0.31
- 4	0.07	1.81	-0.24
- 3	0.29	1.71	0.05
- 2	-0.59	-3.79**	-0.54
- 1	-0.20	-0.42	-0.74
0	0.20	1.38	-0.54
1	-0.12	-1.39	-0.66
2	0.10	0.83	-0.56
3	0.33	3.25**	-0.23
4	0.15	1.45	-0.08
5	-0.08	-1.15	-0.16
6	0.18	0.95	0.02
7	0.09	0.58	0.11
8	-0.44	-2.62**	-0.33
9	-0.26	-1.65	-0.59
10	-0.12	-1.05	-0.71
(11, 20)	-0.07	-1.36	-0.78
(21, 30)	0.10	1.27	-0.68
(31, 40)	-0.01	0.14	-0.69
(41, 50)	0.05	1.13	-0.64

*Significant at α=.05   **Significant at α=.01

Table 4.14

Daily average abnormal returns (AAR) in percent and daily
cumulative average abnormal returns (CAAR) in percent for
companies with the following Standard & Poor's ranking
change between June 1, 1985 and May 30, 1987. Event day 0
is the Standard & Poor's memorandum date.

	B to B- n=140		
Event Day(s)	AAR	t	CAAR
(-50, -41)	-0.03	-0.14	-0.03
(-40, -31)	-0.02	-0.20	-0.05
(-30, -21)	0.08	1.18	0.03
(-20, -11)	0.01	0.24	0.04
-10	-0.26	-0.56	-0.22
- 9	0.53	1.84	0.31
- 8	0.36	1.76	0.67
- 7	-0.09	-0.22	0.58
- 6	0.07	1.30	0.65
- 5	-0.25	-1.14	0.40
- 4	-0.28	-1.38	0.12
- 3	-0.26	-1.05	-0.14
- 2	-0.58	-1.50	-0.72
- 1	-0.84	-3.91**	-1.56
0	0.05	-0.38	-1.51
1	0.75	3.33**	-0.76
2	0.11	0.77	-0.65
3	-0.07	-0.62	-0.72
4	-0.21	-0.16	-0.93
5	-0.05	-0.08	-0.98
6	0.23	1.62	-0.75
7	0.22	0.48	-0.53
8	-0.35	-1.38	-0.88
9	0.36	0.51	-0.52
10	-0.13	-0.37	-0.65
(11, 20)	0.09	1.39	-0.56
(21, 30)	0.01	0.01	-0.55
(31, 40)	-0.08	-0.90	-0.63
(41, 50)	-0.02	-0.61	-0.65

**Significant at α=.01

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Table 4.15

Daily average abnormal returns (AAR) in percent and daily
cumulative average abnormal returns (CAAR) in percent for
companies with the following Standard & Poor's ranking
change between June 1, 1985 and May 30, 1987.   Event day 0
is the Standard & Poor's memorandum date.

Within-Class Downgrades
n=381

Event Day(s)	AAR	t	CAAR
(-50, -41)	-0.07	-1.46	-0.07
(-40, -31)	0.00	-0.05	-0.07
(-30, -21)	-0.01	-0.35	-0.08
(-20, -11)	-0.03	-0.78	-0.11
-10	0.04	1.28	-0.07
- 9	0.16	1.33	0.09
- 8	0.11	1.32	0.20
- 7	-0.17	-1.49	0.03
- 6	-0.07	-0.18	-0.04
- 5	-0.21	-2.16*	-0.25
- 4	-0.02	1.26	-0.27
- 3	-0.02	0.08	-0.29
- 2	-0.48	-3.52**	-0.77
- 1	-0.43	-3.13**	-1.20
0	0.07	0.12	-1.13
1	0.22	1.10	-0.91
2	0.09	1.21	-0.82
3	0.05	1.11	-0.77
4	-0.05	0.54	-0.82
5	-0.01	-0.34	-0.83
6	0.12	1.16	-0.71
7	0.05	0.03	-0.66
8	-0.31	-2.94**	-0.97
9	0.01	-1.11	-0.96
10	-0.06	0.07	-1.02
(11, 20)	-0.03	-1.31	-1.05
(21, 30)	0.04	0.55	-1.01
(31, 40)	-0.03	-0.91	-1.04
(41, 50)	-0.02	-0.81	-1.06

*Significant at α=.05   **Significant at α=.01

Table 4.16

Daily average abnormal returns (AAR) in percent and daily cumulative average abnormal returns (CAAR) in percent for companies with the following Standard & Poor's ranking change between June 1, 1985 and May 30, 1987. Event day 0 is the Standard & Poor's memorandum date.

	A- to B+ n=102		
Event Day(s)	AAR	t	CAAR
(-50, -41)	0.04	0.81	0.04
(-40, -31)	-0.09	-1.76	-0.05
(-30, -21)	-0.08	-1.19	-0.13
(-20, -11)	-0.03	-0.88	-0.16
-10	0.12	0.51	-0.04
- 9	-0.05	-0.68	-0.09
- 8	-0.15	-0.81	-0.24
- 7	0.06	0.20	-0.18
- 6	-0.11	-1.08	-0.29
- 5	-0.24	-0.95	-0.53
- 4	0.10	0.75	-0.43
- 3	-0.17	-1.09	-0.60
- 2	0.03	0.52	-0.57
- 1	0.10	0.52	-0.47
0	-0.28	-1.16	-0.75
1	0.14	0.78	-0.61
2	0.18	1.41	-0.43
3	-0.15	-0.85	-0.58
4	-0.09	-0.58	-0.67
5	-0.01	-0.11	-0.68
6	0.28	1.47	-0.40
7	-0.10	-0.59	-0.50
8	-0.05	0.03	-0.55
9	-0.21	-1.46	-0.76
10	-0.12	-0.44	-0.88
(11, 20)	-0.05	-1.01	-0.93
(21, 30)	-0.16	-3.24**	-1.09
(31, 40)	-0.10	-1.68	-1.19
(41, 50)	-0.02	-1.03	-1.21

**Significant at $\alpha=.01$

Table 4.17

Daily average abnormal returns (AAR) in percent and daily
cumulative average abnormal returns (CAAR) in percent for
companies with the following Standard & Poor's ranking
change between June 1, 1985 and May 30, 1987. Event day 0
is the Standard & Poor's memorandum date.

| | B- to C | | |
| | n=95 | | |

Event Day(s)	AAR	t	CAAR
(-50, -41)	-0.16	-1.57	-0.16
(-40, -31)	-0.16	-0.89	-0.32
(-30, -21)	-0.16	-0.15	-0.48
(-20, -11)	-0.15	-0.95	-0.63
-10	0.04	0.75	-0.59
- 9	-0.80	-1.29	-1.39
- 8	-0.01	1.47	-1.40
- 7	0.20	0.35	-1.20
- 6	-0.03	-0.02	-1.23
- 5	-0.32	-0.89	-1.55
- 4	0.08	0.49	-1.47
- 3	-0.21	-0.60	-1.68
- 2	-0.12	-0.67	-1.80
- 1	-0.99	-2.47*	-2.79
0	-0.59	-1.23	-3.38
1	-0.17	-0.47	-3.55
2	0.05	-0.32	-3.50
3	0.48	1.35	-3.02
4	0.78	1.80	-2.24
5	-0.10	-0.38	-2.34
6	0.01	0.39	-2.33
7	-0.35	-0.21	-2.68
8	0.79	1.77	-1.89
9	0.55	1.52	-1.34
10	0.41	1.29	-0.93
(11, 20)	-0.03	-0.16	-0.96
(21, 30)	0.14	1.40	-0.82
(31, 40)	-0.03	0.53	-0.85
(41, 50)	0.15	2.01*	-0.70

*Significant at α=.05

Table 4.18

Daily average abnormal returns (AAR) in percent and daily
cumulative average abnormal returns (CAAR) in percent for
companies with the following Standard & Poor's ranking
change between June 1, 1985 and May 30, 1987.   Event day 0
is the Standard & Poor's memorandum date.

C to D
n=4

Event Day(s)	AAR	t	CAAR
(-50, -41)	- 0.32	- 0.40	- 0.32
(-40, -31)	- 1.53	- 1.52	- 1.85
(-30, -21)	- 0.40	- 0.46	- 2.25
(-20, -11)	- 0.68	- 0.78	- 2.93
-10	- 1.49	- 0.45	- 4.42
- 9	1.33	0.45	- 3.09
- 8	- 2.74	- 0.75	- 5.83
- 7	- 4.76	- 1.56	-10.59
- 6	0.69	- 0.22	- 9.90
- 5	0.66	0.42	- 9.24
- 4	- 3.15	- 0.78	-12.39
- 3	0.14	0.19	-12.25
- 2	4.47	1.47	- 7.78
- 1	-29.55	-10.62**	-37.33
0	- 0.19	1.27	-37.52
1	- 2.14	- 0.38	-39.66
2	3.78	1.38	-35.88
3	- 3.38	- 0.80	-39.26
4	- 2.43	- 0.37	-41.69
5	0.28	0.00	-41.41
6	1.72	0.15	-39.69
7	1.14	0.29	-38.55
8	- 0.51	- 0.23	-39.06
9	- 4.51	- 1.40	-43.57
10	- 1.11	- 0.35	-44.68
(11, 20)	0.41	0.15	-44.27
(21, 30)	- 0.17	- 0.28	-44.44
(31, 40)	- 0.05	- 0.14	-44.49
(41, 50)	0.75	0.66	-43.74

**Significant at α=.01

Table 4.19

Daily average abnormal returns (AAR) in percent and daily
cumulative average abnormal returns (CAAR) in percent for
companies with the following Standard & Poor's ranking
change between June 1, 1985 and May 30, 1987. Event day 0
is the Standard & Poor's memorandum date.

Across-Class Downgrades
n=201

Event Day(s)	AAR	t	CAAR
(-50, -41)	-0.06	-0.56	-0.06
(-40, -31)	-0.15	-2.08*	-0.21
(-30, -21)	-0.12	-1.70	-0.33
(-20, -11)	-0.10	-1.38	-0.43
-10	0.05	0.82	-0.38
- 9	-0.38	-1.31	-0.76
- 8	-0.13	0.32	-0.89
- 7	0.03	0.17	-0.86
- 6	-0.06	-0.81	-0.92
- 5	-0.26	-1.23	-1.18
- 4	0.03	0.76	-1.15
- 3	-0.18	-1.16	-1.33
- 2	0.04	0.11	-1.29
- 1	-1.01	-2.82**	-2.30
0	-0.42	-1.49	-2.72
1	-0.05	0.18	-2.77
2	0.19	0.98	-2.58
3	0.08	0.21	-2.50
4	0.28	0.77	-2.22
5	-0.05	-0.34	-2.27
6	0.18	1.33	-2.09
7	-0.20	-0.53	-2.29
8	0.34	1.20	-1.95
9	0.06	-0.19	-1.89
10	0.11	0.52	-1.78
(11, 20)	-0.03	-0.81	-1.81
(21, 30)	-0.02	-1.34	-1.83
(31, 40)	-0.06	-0.85	-1.89
(41, 50)	0.08	0.75	-1.81

*Significant at α=.05   **Significant at α=.01

Table 4.20

Daily average abnormal returns (AAR) in percent and daily
cumulative average abnormal returns (CAAR) in percent for
companies with the following Standard & Poor's ranking
change between June 1, 1985 and May 30, 1987. Event day 0
is the Standard & Poor's memorandum date.

	All Downgrades n=582		
Event Day(s)	AAR	t	CAAR
(-50, -41)	-0.07	-1.78	-0.07
(-40, -31)	-0.05	-1.12	-0.12
(-30, -21)	-0.05	-1.48	-0.17
(-20, -11)	-0.05	-1.48	-0.22
-10	0.04	1.69	-0.18
- 9	-0.02	0.39	-0.20
- 8	0.03	1.27	-0.17
- 7	-0.10	-1.08	-0.27
- 6	-0.06	-0.69	-0.33
- 5	-0.23	-2.49*	-0.56
- 4	-0.01	1.47	-0.57
- 3	-0.08	-0.67	-0.65
- 2	-0.30	-3.03**	-0.95
- 1	-0.63	-4.12**	-1.58
0	-0.10	-0.91	-1.68
1	0.13	1.01	-1.55
2	0.13	1.63	-1.42
3	0.06	0.91	-1.36
4	0.06	0.66	-1.30
5	-0.03	-0.32	-1.33
6	0.14	1.81	-1.19
7	-0.03	-0.30	-1.22
8	-0.09	-1.74	-1.31
9	0.03	-1.08	-1.28
10	0.00	0.33	-1.28
(11, 20)	-0.03	-1.48	-1.31
(21, 30)	0.02	-0.42	-1.29
(31, 40)	-0.04	-1.08	-1.33
(41, 50)	0.01	-0.22	-1.32

*Significant at α=.05   **Significant at α=.01

Table 4.21

Frequency of confounding events reported in the <u>Wall Street Journal Index</u> from day -5 to day 5 for common stocks down-graded by Standard & Poor's between June 1, 1985 and May 30, 1987. Event day 0 is the Standard & Poor's memorandum date.

Confounding Event	Event Day											
	-5	-4	-3	-2	-1	0	1	2	3	4	5	T.
Net Income	0	3	24	37	139	84	0	0	2	0	0	289
Net Loss	1	11	37	55	104	69	0	1	1	0	0	279
Dividend	2	6	7	8	7	18	4	9	2	1	5	69
Dividend Cut	2	2	8	5	7	6	4	6	4	1	3	48
New Director	0	0	0	4	10	2	9	4	3	1	0	33
Takeover	1	3	1	0	0	1	2	0	0	1	1	10
Miscellaneous Negative News	8	4	6	3	12	9	12	8	7	7	12	88
Total	14	29	83	112	279	189	31	28	19	11	21	816

Table 4.22

Regression tests for firm-size effect on abnormal returns.
Dependent variable is cumulative average abnormal return for
each company for days -3, -2, and -1. Sample of 168 up-
grades from June 1, 1985 to May 30, 1987.

Upgrades

	Intercept	Total Assets
Predicted Sign	(+)	(-)
Estimated Coefficient	0.00341592	-0.00000009
Std. Error of Variable	0.00136382	0.00000015
t-statistic	2.505	-0.571
Prob. > |t|	0.013	0.569
R-Squared		0.002
F Value		0.326
Prob. > F		0.569

	Intercept	Sales
Predicted Sign	(+)	(-)
Estimated Coefficient	0.00430118	-0.00000108
Std. Error of Variable	0.00152233	0.00000077
t-statistic	2.825	-1.399
Prob. > |t|	0.005	0.164
R-Squared		0.006
F Value		1.958
Prob. > F		0.164

	Intercept	Market Value
Predicted Sign	(+)	(-)
Estimated Coefficient	0.00417227	-0.00000001
Std. Error of Variable	0.00147369	0.00000001
t-statistic	2.831	-0.962
Prob. > |t|	0.005	0.337
R-Squared		0.005
F Value		0.926
Prob. > F		0.337

Table 4.23

Regression tests for firm-size effect on abnormal returns.
Dependent variable is cumulative average abnormal return for
each company for days −3, −2, and −1. Sample of 493 down-
grades from June 1, 1985 to May 30, 1987.

Downgrades

	Intercept	Total Assets
Predicted Sign	(−)	(+)
Estimated Coefficient	−0.00321386	−0.00000002
Std. Error of Variable	0.00087730	0.00000009
t-statistic	−3.663	−0.168
Prob. > |t|	0.001	0.867
R-Squared		0.001
F Value		0.028
Prob. > F		0.867

	Intercept	Sales
Predicted Sign	(−)	(+)
Estimated Coefficient	−0.00328626	0.00000001
Std. Error of Variable	0.00091010	0.00000015
t-statistic	−3.611	0.079
Prob. > |t|	0.001	0.937
R-Squared		0.000
F Value		0.006
Prob. > F		0.937

	Intercept	Market Value
Predicted Sign	(−)	(+)
Estimated Coefficient	−0.00404920	0.00000001
Std. Error of Variable	0.00088986	0.00000001
t-statistic	−4.550	1.407
Prob. > |t|	0.001	0.160
R-Squared		0.004
F Value		1.978
Prob. > F		0.160

Table 4.24

Daily average abnormal returns (AAR) in percent and daily
cumulative average abnormal returns (CAAR) in percent for
companies with the following Standard & Poor's ranking
change between June 1, 1985 and May 30, 1987.   Event day 0
is the Standard & Poor's memorandum date.

	Ranking to NR n=9		
Event Day(s)	AAR	t	CAAR
(-50, -41)	0.33	0.93	0.33
(-40, -31)	-0.14	-0.36	0.19
(-30, -21)	-0.47	-0.79	- 0.28
(-20, -11)	0.25	-0.87	- 0.03
-10	-0.83	-1.50	- 0.86
- 9	0.15	0.97	- 0.71
- 8	-1.35	-0.10	- 2.06
- 7	-0.17	0.07	- 2.23
- 6	-0.13	-0.32	- 2.36
- 5	0.40	1.31	- 1.96
- 4	-1.17	-0.58	- 3.13
- 3	-0.83	-0.89	- 3.96
- 2	-4.12	-2.49*	- 8.08
- 1	-5.90	-5.55**	-13.98
0	-3.84	-3.78**	-17.82
1	2.06	0.93	-15.76
2	-1.04	-0.12	-16.80
3	1.52	1.74	-15.28
4	0.23	0.99	-15.05
5	-1.47	-1.03	-16.52
6	-2.31	-3.51**	-18.83
7	-1.18	-2.17	-20.01
8	-3.54	-4.83**	-23.55
9	-0.08	-0.33	-23.63
10	0.41	0.39	-23.22
(11, 20)	0.27	0.16	-22.95
(21, 30)	0.02	1.00	-22.93
(31, 40)	0.25	0.67	-22.68
(41, 50)	0.26	0.63	-22.42

*Significant at α=.05   **Significant at α=.01

Table 4.25

Daily average abnormal returns (AAR) in percent and daily
cumulative average abnormal returns (CAAR) in percent for
companies with the following Standard & Poor's ranking
change between June 1, 1985 and May 30, 1987. Event day 0
is the Standard & Poor's memorandum date.

NR to High Ranking (A+, A, A-, B+)
n=9 (0, 1, 0, 8)

Event Day(s)	AAR	t	CAAR
(-50, -41)	-0.11	-0.37	-0.11
(-40, -31)	0.08	0.19	-0.03
(-30, -21)	-0.13	-0.58	-0.16
(-20, -11)	0.08	0.29	-0.08
-10	-0.47	-1.00	-0.55
- 9	0.49	0.07	-0.06
- 8	-0.29	-0.72	-0.35
- 7	-0.22	-0.80	-0.57
- 6	0.18	0.40	-0.39
- 5	-0.25	-0.18	-0.64
- 4	0.14	0.23	-0.50
- 3	-0.93	-1.43	-1.43
- 2	0.22	0.32	-1.21
- 1	-0.39	-0.29	-1.60
0	0.51	0.52	-1.09
1	0.27	0.47	-0.82
2	-0.76	-0.51	-1.58
3	-1.21	-1.62	-2.79
4	-0.78	-1.22	-3.57
5	-0.06	-0.56	-3.63
6	-1.52	-2.23	-5.15
7	0.11	0.19	-5.04
8	0.57	0.68	-4.47
9	0.75	1.05	-3.72
10	-0.71	-1.00	-4.43
(11, 20)	-0.27	-1.67	-4.70
(21, 30)	0.18	0.93	-4.52
(31, 40)	-0.15	-1.09	-4.67
(41, 50)	-0.16	-1.17	-4.83

Table 4.26

Daily average abnormal returns (AAR) in percent and daily
cumulative average abnormal returns (CAAR) in percent for
companies with the following Standard & Poor's ranking
change between June 1, 1985 and May 30, 1987. Event day 0
is the Standard & Poor's memorandum date.

NR to Low Ranking (B, B-, C, D)
n=33 (14, 3, 14, 2)

Event Day(s)	AAR	t	CAAR
(−50, −41)	−0.23	−1.54	−0.23
(−40, −31)	0.16	0.56	−0.07
(−30, −21)	−0.01	0.17	−0.08
(−20, −11)	0.04	−0.71	−0.04
−10	0.60	1.16	0.56
− 9	−0.11	−0.27	0.45
− 8	−0.66	−1.13	−0.21
− 7	−0.47	−0.49	−0.68
− 6	0.24	0.90	−0.44
− 5	−0.45	−0.64	−0.89
− 4	1.41	2.43*	0.52
− 3	0.29	0.69	0.81
− 2	−0.14	−0.19	0.67
− 1	−0.74	−1.19	−0.07
0	−0.55	−0.96	−0.62
1	0.91	0.80	0.29
2	−0.45	−0.95	−0.16
3	−0.70	−1.22	−0.86
4	0.17	0.25	−0.69
5	0.45	1.21	−0.24
6	−0.08	0.11	−0.32
7	0.13	1.20	−0.19
8	−1.20	−2.16	−1.39
9	0.86	−0.42	−0.53
10	0.82	1.98	0.29
(11, 20)	−0.05	−0.59	0.24
(21, 30)	0.13	0.23	0.37
(31, 40)	−0.09	0.07	0.28
(41, 50)	0.29	1.78	0.57

*Significant at α=.05

Table 4.27

Daily average abnormal returns (AAR) in percent and daily
cumulative average abnormal returns (CAAR) in percent for
companies with the following Standard & Poor's ranking
change between June 1, 1985 and May 30, 1987. Event day 0
is the Standard & Poor's memorandum date.

Event Day(s)	NR to Ranking n=42		
	AAR	t	CAAR
(-50, -41)	-0.20	-1.54	-0.20
(-40, -31)	0.14	0.58	-0.06
(-30, -21)	-0.03	-0.12	-0.09
(-20, -11)	0.05	-0.50	-0.04
-10	0.37	0.57	0.33
- 9	0.02	-0.21	0.35
- 8	-0.45	-1.34	-0.10
- 7	-0.42	-0.80	-0.52
- 6	0.22	0.98	-0.30
- 5	-0.40	-0.65	-0.70
- 4	1.13	2.26*	0.43
- 3	0.03	-0.05	0.46
- 2	-0.06	-0.02	0.40
- 1	-0.67	-1.19	-0.27
0	-0.32	-0.61	-0.59
1	0.77	0.92	0.18
2	-0.52	-1.07	-0.34
3	-0.81	-1.84	-1.15
4	-0.03	-0.34	-1.18
5	0.34	0.81	-0.84
6	-0.39	-0.93	-1.23
7	0.12	1.15	-1.11
8	-0.82	-1.60	-1.93
9	0.83	0.11	-1.10
10	0.49	1.29	-0.61
(11, 20)	-0.10	-1.29	-0.71
(21, 30)	0.15	0.64	-0.56
(31, 40)	-0.10	-0.45	-0.66
(41, 50)	0.19	1.04	0.47

*Significant at $\alpha=.05$

Table 4.28

Portfolio return and standard deviation of return for firms with the initiation or ending of a Standard & Poor's common stock ranking between June 1, 1985 and May 30, 1987. Firms grouped by type of ranking change before and after event day 0, which is the Standard & Poor's memorandum date. Figures are in percent.

Portfolio	n	50 Days Before Event		50 Days After Event	
		Return	SD	Return	SD
Ranking to No Ranking	9	-17.32	3.99	-0.86	3.53
No Ranking to High Ranking	9	3.12	1.74	-4.82	1.94
No Ranking to Low Ranking	33	6.85	3.95	5.37	3.68
No Ranking to Ranking	42	6.05	3.49	3.19	3.34

Table 4.29

Paired t-test for a change in the mean portfolio beta from a pre-event period (days -250 to -51) to a post-event period (days 51 to 250) for companies with the following common stock ranking initiation or ending by Standard & Poor's from June 1, 1985 to May 30, 1987.

Ranking Change	n	Pre-Event Beta	Post-Event Beta	Change	t
Ranking to No Ranking	9	0.80 (0.49)	0.82 (0.83)	0.02	0.15
No Ranking to High Ranking	9	1.02 (0.33)	0.75 (0.36)	-0.27	-3.73**
No Ranking to Low Ranking	33	1.00 (0.51)	0.98 (0.47)	-0.02	-0.27
No Ranking to Ranking	42	1.01 (0.46)	0.93 (0.44)	-0.08	-1.21

**Significant at $\alpha=.01$ (two-tailed test)

Table 4.30

Sample of companies which lost their Standard & Poor's common stock rankings (Ranking to NR) during the period from June 1, 1985 to May 30, 1987.

Company	Month of Event Date	Ranking Change
Kansas Gas & Electric	August 1985	A- to NR
Middle South Utilities	August 1985	A- to NR
FMC Corporation	June 1986	A- to NR
Gulf States Utility	June 1986	A- to NR
Duquesne Light	August 1986	A- to NR
Matrix Corporation	September 1985	B+ to NR
Koger Properties	August 1985	B to NR
Owens-Corning Fiberglas	November 1986	B to NR
Cook United	October 1986	D to NR

Table 4.31

Portfolio return and standard deviation of return for firms
with a Standard & Poor's ranking change between June 1, 1985
and May 30, 1987. Firms grouped by type of ranking change
before and after event day 0, which is the Standard & Poor's
memorandum date. Figures are in percent.

Portfolio	n	50 Days Before Event		50 Days After Event	
		Return	SD	Return	SD
A to A+	20	11.27	1.68	8.05	1.79
A- to A	31	8.56	1.53	8.41	1.75
B+ to A-	27	11.99	2.03	7.81	1.85
B to B+	26	7.36	2.13	3.93	2.17
B- to B	40	8.50	2.55	4.39	2.51
C to B-	46	12.34	2.92	5.38	3.29
Within-Class	117	8.73	2.09	5.97	2.14
Across-Class	74	12.65	2.66	6.07	2.85
All Upgrades	191	10.24	2.32	6.01	2.44
A+ to A	33	2.33	1.72	5.60	1.73
A to A-	70	8.26	1.76	5.72	1.88
A- to B+	102	6.02	1.80	4.77	1.94
B+ to B	138	5.43	2.35	6.36	2.46
B to B-	140	4.49	3.20	5.99	3.07
B- to C	95	0.99	4.09	7.97	3.94
C to D	4	-52.24	7.71	17.17	7.73
Within-Class	381	5.33	2.57	6.04	2.56
Across-Class	201	2.48	3.28	6.53	3.23
All Downgrades	582	4.35	2.83	6.21	2.81

Table 4.32

Paired t-test for a fall in the mean portfolio beta from a pre-event period (days -250 to -51) to a post-event period (days 51 to 250) for companies with the following common stock ranking changes from June 1, 1985 to May 30, 1987.

			Upgrades		
Ranking Change	n	Pre-Event Beta	Post-Event Beta	Change	t
A to A+	20	1.16 (0.47)	1.09 (0.37)	-0.07	-0.65
A- to A	31	1.02 (0.33)	1.04 (0.37)	0.02	0.31
B+ to A-	27	1.17 (0.50)	1.05 (0.44)	-0.12	-1.31
B to B+	26	1.42 (0.55)	1.20 (0.46)	-0.22	-1.95*
B- to B	40	1.26 (0.66)	1.17 (0.44)	-0.09	-0.97
C to B-	46	1.32 (0.68)	1.12 (0.41)	-0.20	-1.86*
Within-Class	117	1.21 (0.55)	1.13 (0.42)	-0.08	-1.61
Across-Class	74	1.25 (0.62)	1.10 (0.43)	-0.15	-1.94*
All Upgrades	191	1.23 (0.57)	1.12 (0.42)	-0.11	-2.51**

*Significant at α=.05 (one-tailed test)
**Significant at α=.01 (one-tailed test)

Table 4.33

Paired t-test for a rise in the mean portfolio beta from a
pre-event period (days -250 to -51) to a post-event period
(days 51 to 250) for companies with the following common
stock ranking changes from June 1, 1985 to May 30, 1987.

		Downgrades			
Ranking Change	n	Pre-Event Beta	Post-Event Beta	Change	t
A+ to A	33	1.01 (0.38)	1.04 (0.25)	0.03	0.36
A to A-	70	1.05 (0.48)	1.03 (0.34)	-0.02	-0.23
A- to B+	102	1.02 (0.42)	1.09 (0.38)	0.07	1.76*
B+ to B	138	1.05 (0.44)	1.07 (0.44)	0.02	0.61
B to B-	140	1.04 (0.64)	1.08 (0.41)	0.04	0.65
B- to C	95	1.19 (0.61)	1.15 (0.63)	-0.04	-0.53
C to D	4	2.11 (0.53)	1.64 (0.11)	-0.47	-1.40
Within-Class	381	1.04 (0.52)	1.06 (0.40)	0.02	0.77
Across-Class	201	1.11 (0.53)	1.13 (0.51)	0.02	0.35
All Downgrades	582	1.07 (0.52)	1.09 (0.44)	0.02	0.83

*Significant at $\alpha=.05$ (one-tailed test)

Table 4.34

Mean betas and the number of securities for various port-
folios of common stocks with a ranking change between June
1, 1985 and May 30, 1987. The pre-event period is days
-250 to -51, and the post-even period is days 51 to 250.

Ranking	Pre-Event Up	Pre-Event Down	Post-Event Up	Post-Event Down	Ave. Pre	Ave. Post	Ave. Up	Ave. Down	Total
A+	----	1.01	1.09	----	1.01	1.09	1.09	1.01	1.04
	----	33	20	----	33	20	20	33	53
A	1.16	1.05	1.04	1.04	1.07	1.04	1.09	1.05	1.06
	20	70	31	33	90	64	51	103	154
A-	1.02	1.02	1.05	1.03	1.02	1.04	1.03	1.02	1.03
	31	102	27	70	133	97	58	172	230
B+	1.17	1.05	1.20	1.09	1.07	1.11	1.18	1.07	1.09
	27	138	26	102	165	128	53	240	293
B	1.42	1.04	1.17	1.07	1.10	1.09	1.27	1.05	1.10
	26	140	40	138	166	178	66	278	344
B-	1.26	1.19	1.12	1.08	1.21	1.09	1.19	1.12	1.14
	40	95	46	140	135	186	86	235	321
C	1.32	2.11	----	1.15	1.32	1.15	1.32	1.15	1.21
	46	4	0	95	50	95	46	99	145
D	----	----	----	1.64	----	1.64	----	1.64	1.64
	0	----	----	4	0	4	0	4	4
Within	1.21	1.04	1.13	1.06	1.08	1.08	1.17	1.05	1.08
	117	381	117	381	498	498	234	762	996
Across	1.25	1.11	1.10	1.13	1.15	1.12	1.18	1.12	1.13
	74	201	74	201	275	275	148	402	550
All	1.23	1.06	1.12	1.08	1.10	1.09	1.18	1.07	1.10
	191	582	191	582	773	773	382	1164	1546

CHAPTER FIVE

SUMMARY AND CONCLUSIONS

5.1 Introduction

This chapter provides a summary and conclusions of this
study. Section 5.2 describes the motivation for research,
related literature, and the objective of this dissertation.
Section 5.3 briefly describes the research methodology
employed. In section 5.4, empirical results are summarized,
and the contributions of this research to the literature are
assessed. Finally, recommendations for future research are
made in section 5.5.

5.2 Objective of Dissertation

The purpose of this dissertation is to examine the
information content of common stock ranking changes made by
the Standard & Poor's Corporation. These rankings are
derived from a system developed by Standard & Poor's which
begins with a computer-generated score based on per-share
growth, stability, and cyclicality of earnings and dividends
for the most recent ten years of available data. Standard &
Poor's then adjusts the scores based on firm size, sales

volume, "relative current standing," and special considerations. Many companies' stocks are not ranked due to either insufficient data or uncertainty about future earnings.

Changes in rankings are made daily by Standard & Poor's. A ranking change can be either an upgrade, a downgrade, the initiation of a ranking, or the withdrawal of a ranking. Ranking changes are first released by internal memoranda. The memoranda are then mailed to the Interactive Data Corporation, which provides the information to its customers. Finally, the ranking changes are published at the end of the month in the Stock Guide.

The central question which this dissertation addresses is whether or not Standard & Poor's ranking changes contain information which is not already incorporated in security prices. Following Stickel [1986], an argument can be presented for both sides of the question. On one hand, a security price response upon the release of the rankings is expected due to Standard & Poor's reputation as a provider of valuable information. On the other hand, the rankings may be only summary statistics which do not affect prices.

Previous studies by Haugen [1979], Muller, Fielitz, and Greene [1983, 1984], and Muller and Fielitz [1987] find information content in Standard & Poor's common stock rankings. These studies find that Standard & Poor's rankings are a good measure of risk, but they do not examine Standard & Poor's ranking changes. This study is motivated

in part by the failure of these studies to examine ranking
changes for information content.

A closely related area, the information content of
Value Line recommendations, has been studied extensively.
Studies by Black [1971], Holloway [1981], and Copeland and
Mayers [1982] find that stocks ranked high in the Value Line
Investment Survey outperform stocks ranked low, even after
making adjustments for risk. However, the debate concerning
Value Line's ability to outperform the market, the Value
Line Anomaly, is unresolved. Stickel [1985] tests Value
Line ranking changes for information content and finds a
portfolio price adjustment which lasts for approximately
three days subsequent to the public release of Value Line
ranking changes. This study parallels Stickel [1985] by
examining the portfolio price adjustment to Standard &
Poor's common stock ranking changes.

5.3 Research Methodology

This study employs event study methodology, which
models expected security returns, then computes the
deviation of actual returns from expected returns and the
statistical significance of the deviation. The market model
is used to estimate the benchmark expected return.

Common stock ranking changes made by Standard & Poor's

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during the two-year period from June 1, 1985 to May 30,
1987, and published in the Stock Guide from July 1985 to
June 1987, are examined. During this period, 1,879 common
stock ranking changes were made by Standard & Poor's, and
824 ranking changes are examined in this dissertation.
Memoranda containing daily ranking changes during this two-
year period of study were obtained by request from the
Standard & Poor's Corporation.

5.4 Summary and Contribution of Empirical Findings

A Wall Street Journal Index search indicates that
Standard & Poor's makes ranking changes subsequent to the
public release of corporate earnings. Empirical results
refute the existence of a Standard & Poor's anomaly.
Security prices adjust upon the release of corporate earn-
ings in the Wall Street Journal, prior to ranking changes,
which is consistent with market efficiency. An exception
occurs with the All Upgrades portfolio six days after the
memorandum date. However, the aberration is not considered
meaningful since it is probably the result of the relatively
small sample size of the All Upgrades portfolio.[26]

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[26] The All Upgrades portfolio of 191 stocks is small
relative to the All Downgrades portfolio (582). The Within-
Class Downgrades portfolio (381) has a statistically signi-
ficant negative AAR on day 8, but it loses significance when
the Across-Class Downgrades portfolio (201) is added.

Standard & Poor's common stock rankings are found to be a reliable measure of risk, both before and after a ranking change. With few exceptions, a higher ranking indicates lower risk, as measured by both beta and standard deviation of returns. The rankings are not found to be a reliable measure of return, both before and after ranking changes.

Since this study concurs with previous findings of a close relation between Standard & Poor's common stock rankings and risk, a test is made to determine whether a ranking change indicates a change in risk. The mean portfolio beta for days -250 to -50 is compared with the mean portfolio beta for days 51 to 250. For the All Upgrades portfolio, the a priori expectation is for the mean portfolio beta to fall, indicating less risk following an upgrade. Using a paired t-test, a statistically significant fall in the mean beta occurs for the All Upgrades portfolio, from 1.23 to 1.12. For the All Downgrades portfolio, the a priori expectation is for the mean portfolio beta to rise, indicating more risk following a downgrade. The mean portfolio beta rises for the All Downgrades portfolio from 1.07 to 1.09.

In conclusion, this study makes significant contributions to the literature. A Standard & Poor's anomaly is not found. Investors cannot earn abnormal returns by trading securities based on Standard & Poor's common stock ranking changes. No relation between rankings and returns is found,

and information is fully incorporated in security prices
prior to ranking changes. However, rankings may be used as
a measure of market risk. With few exceptions, a higher
ranking indicates lower risk. Furthermore, a ranking change
indicates a change in risk.

5.5 Recommendations for Future Research

Standard & Poor's common stock rankings, which are
closely related to risk, are based almost entirely on
publicly-available ten-year histories of corporate earnings
and dividends. Standard & Poor's common stock ranking
changes, which indicate a change in risk, are made in
response to changes in earnings and dividends. Thus, public
announcements of earnings and dividends may contain infor-
mation regarding future market risk. Additional research of
the relation between risk and announcements of earnings and
dividends may be useful in trying to predict future market
risk. However, Standard & Poor's common stock ranking
changes may provide portfolio managers with a low-cost
method for predicting future betas. In their attempt to
maintain portfolio risk at its desired level, portfolio
managers may be able to employ ranking changes as a means
for adjusting portfolios before changes in risk occur.

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Appendix A

Description of the Standard & Poor's
Common Stock Rankings
[Stock Guide]

The investment process involves assessment of various
factors - such as product and industry position, corporate
resources and financial policy - with results that make some
common stocks more highly esteemed than others. In this
assessment, Standard & Poor's believes that earnings and
dividend performance is the end result of the interplay of
these factors and that, over the long run, the record of
this performance has a considerable bearing on relative
quality. The rankings, however, do not pretend to reflect
all of the factors, tangible or intangible, that bear on
stock quality.

Relative quality of bonds or other debt, that is,
degrees of protection for principal and interest, called
creditworthiness, cannot be applied to common stocks, and
therefore rankings are not to be confused with bond quality
ratings which are arrived at by a necessarily different
approach.

Growth and stability of earnings and dividends are
deemed key elements in establishing Standard & Poor's
earnings and dividend rankings for common stocks, which are
designed to capsulize the nature of this record in a single
symbol. It should be noted, however, that the process also
takes into consideration certain adjustments and
modifications deemed desirable in establishing such
rankings.

The point of departure in arriving at these rankings is
a computerized scoring system based on per-share earnings
and dividend records of the most recent ten years - a period
deemed long enough to measure significant time segments of
secular growth, to capture indications of basic change in
trend as they develop, and to encompass the full peak-to-
peak range of the business cycle. Basic scores are computed
for earnings and dividends, then adjusted as indicated by a
set of predetermined modifiers for growth, stability with
long-term trend, and cyclicality. Adjusted scores for
earnings and dividends are then combined to yield a final
score.

Further, the ranking system makes allowance for the
fact that, in general, corporate size imparts certain
recognized advantages from an investment standpoint.
Conversely, minimum size limits (in terms of corporate sales
volume) are set for the various rankings, but the system
provides for making exceptions where the score reflects an
outstanding earnings-dividend record.

The final score for each stock is measured against a

scoring matrix determined by analysis of the scores of a large and representative sample of stocks. The range of scores in the array of this sample has been aligned with the following ladder of rankings:

A+	Highest	B+	Average	C	Lowest
A	High	B	Below Average	D	In Reorganization
A-	Above Average	B-	Lower		

NR signifies no ranking because of insufficient data or because the stock is not amenable to the ranking process.

The positions as determined above may be modified in some instances by special considerations, such as natural disasters, massive strikes, and non-recurring accounting adjustments.

A ranking is not a forecast of future market price performance, but is basically an appraisal of past performance of earnings and dividends, and relative current standing. These rankings must not be used as market recommendations; a high-score stock may at times be so overpriced as to justify its sale, while a low-score stock may be attractively priced for purchase. Rankings based upon earnings and dividend records are no substitute for complete analysis. They cannot take into account potential effects of management changes, internal company policies not yet fully reflected in the earnings and dividend record, public relations standing, recent competitive shifts, and a host of other factors that may be relevant to investment status and decision.

Appendix B

Description of the Moody's, Value Line, and
Financial World Common Stock Rankings

Moody's Common Stock Rankings
[Moody's Handbook of Common Stocks]

MOODY'S COMMENT is a concise statement of the important characteristics of the company plus our evaluation of the grade (quality) of its common stock.
The grade is based on an analysis of each company's financial strength, stability of earnings and record of dividend payments. Other considerations include conservativeness of capitalization, depth and caliber of management, accounting practices, technological capabilities and industry position. Evaluation is represented by the following grades:

(1) High Grade
(2) Investment Grade
(3) Medium Grade
(4) Speculative Grade

These classifications are a measure of suitability to an individual investor and should not be construed as advice to buy, sell or hold a stock.

Value Line's Common Stock Rankings
[Value Line Investment Survey]

Procedure in Building an Efficient Portfolio
What Value Line Does

(1) Value Line ranks industry groups in order of their Timeliness (Relative Performance in the Next 12 Months).
(2) Value Line ranks 1700 (plus) stocks in five categories according to their Timeliness (Relative Performance in the Next 12 Months). 100 stocks are ranked 1 (Highest) for Performance in the Next 12 Months; 300 are ranked 2 (Above Average) for Performance in the Next 12 Months; about 900, 3 (Average); 300, 4 (Below Average); 100, 5 (Lowest).
(3) Value Line rates the 1700 stocks according to their Safety also. 150 stocks are rated 1 (Highest) for Safety; 250 are rated 2 (Above Average); 900 are rated 3 (Average); 250, 4 (Below Average); and 150 are rated 5 (Lowest) for

Safety. Stocks rated 1 (Highest) for Safety are those
expected to be least volatile and their companies
financially most strong. Stocks rated 5 (Lowest) are
expected to be the most volatile and their companies least
strong financially.
    (4) Value Line estimates the next 12 months dividend
yield of each stock at its most recent price. The expected
yield is noted in the weekly Summary & Index. Value Line
also shows for comparative purposes the median yield of all
dividend-paying stocks on the first page of the weekly
Summary & Index. . . .

Financial Strength Rating

    The Value Line Rating of the Company's financial
strength runs from A++, the very highest, down to C, the
poorest. Companies ranked B and C++ may be considered to be
in satisfactory financial condition. Companies rated C for
Financial Strength have a relatively high incidence of
default. Financial Strength is averaged with Price
Stability to make up the Value Line Safety Rank.

Earnings Forecasts and "Surprises"

    The Value Line staff estimates earnings per share
quarter by quarter at least one year ahead. These estimates
are revised from time to time as evidence requires. The
very latest 12-month estimates are published weekly in the
Summary & Index.
    Value Line's estimates of next year's earnings and
earnings 3 to 5 years hence are first published in the third
quarter of the current year.
    However, note that the rank for Timeliness (Price Per-
formance in the next 12 months) is based solely upon
earnings actually reported, not on Value Line estimates,
except that when reported earnings differ markedly from
Value Line estimates, a "surprise" factor is incorporated in
the Value Line Timeliness Rank.

Financial World Common Stock Rankings
[Financial World]

Key to Ratings in 1965
[Period of Stevenson's Study]

    The ratings assigned in the appraisals indicate the
relative investment quality of each issue. They are not
meant to be forecasts, or trading recommendations, but

should be used with other data in evaluating individual securities.

A+ and A stocks are investment grade issues which have such attributes as a conservative capitalization, consistent dividend record and substantial earning power even under the most adverse general business conditions. Those in the A+ category have shown greater earnings consistency than stocks rated A.

B+ and B stocks are upper medium to medium grade issues of semi-investment quality. They are fortified by a good financial position and satisfactory average earnings.

C+ and C stocks are those in fair to good financial position. Earnings of both the semi-speculative C+ and the more speculative C-rated issues depend upon general business conditions.

D+ and D issues are highly speculative and unsuited for the average investor. The D issues are in somewhat more marginal position than the D+ category.

NR Not rated.

Banks, Insurance, Investment Companies and Savings and Loan Associations are not rated.

Current [1990] Key to Ratios

A+ (superior), A (very high), A- (high), B+ (above average), B (average), B- (below average), C (speculative), D (poor), NR (not rated) due to incomplete data.

Appendix C

The Market Model

[Abdel-khalik and Ajinkya (1979), p. 111]

$$R_{jt} = \alpha + \beta_j R_{mt} + e_{jt}$$

where R_{jt} = a dependent variable

R_{mt} = an independent variable

α_j = intercept

β_j = slope for stock j

e_{jt} = residual.

And, β_j = [Covariance (R_{jt}, R_{mt}) / Variance R_{mt}].

The Assumptions of the Market Model

(1) R_{mt} and R_{mt-1} are independent observations for any t.
(2) e_{jt} and e_{jt-i} are independent observations for any i.
(3) the mean of e_{jt} over the regression period is zero.
(4) the correlation between the residual term (e_{jt}) and the market rate of return (R_{mt}) is zero.
(5) α and β are unbiased estimators of the true parameters.

Appendix D

Definition of the Market Adjusted Returns Procedure and Empirical Results Using This Procedure for the Following Six Groups: Within-Class Upgrades, Across-Class Upgrades, All Upgrades, Within-Class Downgrades, Across-Class Downgrades, and All Downgrades.

Market Adjusted Returns

$$AR_{it} = R_{it} - R_{mt}$$

where R_{mt} is the return on the CRSP equally-weighted index for day t.

Table D.1

Daily average abnormal returns (AAR) in percent and daily
cumulative average abnormal returns (CAAR) in percent for
companies with the following Standard & Poor's ranking
change between June 1, 1985 and May 30, 1987. Event day 0
is the Standard & Poor's memorandum date.

Within-Class Upgrades, n=117
Market Adjusted Returns

Event Day(s)	AAR	t	CAAR
(-50, -41)	0.02	-0.07	0.02
(-40, -31)	-0.02	0.87	0.00
(-30, -21)	0.00	-0.39	0.00
(-20, -11)	-0.01	-0.32	-0.01
-10	-0.18	-1.57	-0.19
- 9	0.38	2.03*	0.19
- 8	0.02	0.52	0.21
- 7	0.07	0.63	0.28
- 6	0.27	1.21	0.55
- 5	0.15	1.18	0.70
- 4	0.08	0.98	0.78
- 3	0.15	1.19	0.93
- 2	-0.05	-0.80	0.88
- 1	0.40	1.84	1.28
0	-0.20	-0.71	1.08
1	0.09	0.99	1.17
2	0.22	1.35	1.39
3	-0.29	-1.72	1.10
4	-0.18	-1.06	0.92
5	0.08	0.02	1.00
6	0.33	2.06*	1.33
7	0.00	-0.24	1.33
8	-0.05	-0.70	1.28
9	0.24	1.01	1.52
10	-0.09	-0.56	1.43
(11, 20)	0.03	0.54	1.46
(21, 30)	-0.04	-0.81	1.42
(31, 40)	-0.08	-1.53	1.34
(41, 50)	-0.01	0.09	1.33

*Significant at α=.05

Table D.2

Daily average abnormal returns (AAR) in percent and daily
cumulative average abnormal returns (CAAR) in percent for
companies with the following Standard & Poor's ranking
change between June 1, 1985 and May 30, 1987. Event day 0
is the Standard & Poor's memorandum date.

Across-Class Upgrades, n=74
Market Adjusted Returns

Event Day(s)	AAR	t	CAAR
(-50, -41)	0.04	0.08	0.04
(-40, -31)	-0.04	0.05	0.00
(-30, -21)	-0.00	-0.64	0.00
(-20, -11)	0.08	1.05	0.08
-10	-0.54	-1.27	-0.46
- 9	0.13	1.21	-0.33
- 8	0.72	1.90	0.39
- 7	0.73	2.63*	1.12
- 6	-0.02	0.15	1.10
- 5	-0.08	0.53	1.02
- 4	0.18	0.57	1.20
- 3	0.71	2.91**	1.91
- 2	1.31	3.83**	3.22
- 1	-0.19	-1.21	3.03
0	-0.52	-1.64	2.51
1	-0.09	-0.75	2.42
2	-0.34	-0.96	2.08
3	-0.11	0.01	1.97
4	-0.24	-1.54	1.73
5	-0.14	-0.57	1.59
6	0.50	1.28	2.09
7	-0.29	-0.37	1.80
8	0.32	1.26	2.12
9	-0.16	-0.26	1.96
10	0.93	2.03*	2.89
(11, 20)	0.01	-0.19	2.90
(21, 30)	0.05	1.06	2.95
(31, 40)	-0.12	-2.07*	2.83
(41, 50)	0.02	-0.07	2.85

*Significant at α=.05   **Significant at α=.01

Table D.3

Daily average abnormal returns (AAR) in percent and daily
cumulative average abnormal returns (CAAR) in percent for
companies with the following Standard & Poor's ranking
change between June 1, 1985 and May 30, 1987. Event day 0
       is the Standard & Poor's memorandum date.

All Upgrades, n=191
Market Adjusted Returns

Event Day(s)	AAR	t	CAAR
(-50, -41)	0.03	0.02	0.03
(-40, -31)	-0.03	0.73	0.00
(-30, -21)	-0.00	-0.71	0.00
(-20, -11)	0.03	0.37	0.03
-10	-0.32	-2.02*	-0.29
- 9	0.28	2.35*	-0.01
- 8	0.29	1.58	0.28
- 7	0.32	2.15*	0.60
- 6	0.16	1.02	0.76
- 5	0.06	1.25	0.82
- 4	0.12	1.14	0.94
- 3	0.37	2.71**	1.31
- 2	0.48	1.73	1.79
- 1	0.18	0.70	1.97
0	-0.32	-1.54	1.65
1	0.02	0.29	1.67
2	0.00	0.49	1.67
3	-0.22	-1.32	1.45
4	-0.21	-1.77	1.24
5	-0.00	-0.34	1.24
6	0.40	2.42**	1.64
7	-0.11	-0.47	1.53
8	0.09	0.26	1.62
9	0.09	0.62	1.71
10	0.30	0.80	2.01
(11, 20)	0.02	0.27	2.03
(21, 30)	-0.01	0.00	2.02
(31, 40)	-0.09	-2.46*	1.93
(41, 50)	-0.00	0.01	1.93

*Significant at $\alpha=.05$ **Significant at $\alpha=.01$

Table D.4

Daily average abnormal returns (AAR) in percent and daily
cumulative average abnormal returns (CAAR) in percent for
companies with the following Standard & Poor's ranking
change between June 1, 1985 and May 30, 1987. Event day 0
is the Standard & Poor's memorandum date.

Within-Class Downgrades, n=381
Market Adjusted Returns

Event Day(s)	AAR	t	CAAR
(-50, -41)	-0.09	-2.28*	-0.09
(-40, -31)	-0.02	-0.73	-0.11
(-30, -21)	-0.03	-0.88	-0.14
(-20, -11)	-0.07	-1.88	-0.21
-10	0.01	1.12	-0.20
- 9	0.13	0.94	-0.07
- 8	0.08	1.01	0.01
- 7	-0.19	-1.67	-0.18
- 6	-0.06	-0.21	-0.24
- 5	-0.23	-2.28*	-0.47
- 4	-0.04	1.19	-0.51
- 3	-0.04	-0.16	-0.55
- 2	-0.51	-3.87**	-1.06
- 1	-0.45	-3.47**	-1.51
0	0.04	-0.21	-1.47
1	0.18	0.74	-1.29
2	0.07	0.85	-1.22
3	0.02	0.82	-1.20
4	-0.07	0.31	-1.27
5	-0.03	-0.53	-1.30
6	0.08	0.63	-1.22
7	0.03	-0.24	-1.19
8	-0.35	-3.13**	-1.54
9	-0.00	-1.35	-1.54
10	-0.05	0.20	-1.59
(11, 20)	-0.05	-1.79	-1.64
(21, 30)	0.02	0.27	-1.62
(31, 40)	-0.06	-1.64	-1.68
(41, 50)	-0.05	-1.45	-1.73

*Significant at α=.05   **Significant at α=.01

Table D.5

Daily average abnormal returns (AAR) in percent and daily
cumulative average abnormal returns (CAAR) in percent for
companies with the following Standard & Poor's ranking
change between June 1, 1985 and May 30, 1987. Event day 0
is the Standard & Poor's memorandum date.

Across-Class Downgrades, n=201
Market Adjusted Returns

Event Day(s)	AAR	t	CAAR
(−50, −41)	−0.05	−0.40	−0.05
(−40, −31)	−0.16	−2.44*	−0.21
(−30, −21)	−0.12	−1.91	−0.33
(−20, −11)	−0.10	−1.48	−0.43
−10	0.04	0.57	−0.39
− 9	−0.38	−1.44	−0.77
− 8	−0.11	0.28	−0.88
− 7	0.05	0.13	−0.83
− 6	−0.08	−0.96	−0.91
− 5	−0.26	−1.19	−1.17
− 4	0.05	0.87	−1.12
− 3	−0.16	−1.05	−1.28
− 2	0.05	0.09	−1.23
− 1	−1.03	−3.12**	−2.26
0	−0.44	−1.72	−2.70
1	−0.03	0.24	−2.73
2	0.19	0.92	−2.54
3	0.11	0.27	−2.43
4	0.31	0.89	−2.12
5	−0.04	−0.41	−2.16
6	0.18	1.38	−1.98
7	−0.20	−0.58	−2.18
8	0.34	1.16	−1.84
9	0.07	−0.14	−1.77
10	0.12	0.59	−1.65
(11, 20)	−0.02	−0.60	−1.67
(21, 30)	0.00	−1.03	−1.67
(31, 40)	−0.08	−1.06	−1.75
(41, 50)	0.08	0.81	−1.67

*Significant at α=.05   **Significant at α=.01

Table D.6

Daily average abnormal returns (AAR) in percent and daily
cumulative average abnormal returns (CAAR) in percent for
companies with the following Standard & Poor's ranking
change between June 1, 1985 and May 30, 1987. Event day 0
is the Standard & Poor's memorandum date.

All Downgrades, n=582
Market Adjusted Returns

Event Day(s)	AAR	t	CAAR
(-50, -41)	-0.08	-1.99*	-0.08
(-40, -31)	-0.07	-1.97*	-0.15
(-30, -21)	-0.06	-1.99*	-0.21
(-20, -11)	-0.08	-2.42*	-0.29
-10	0.02	1.15	-0.27
- 9	-0.05	0.01	-0.32
- 8	0.01	0.97	-0.31
- 7	-0.11	-1.31	-0.42
- 6	-0.06	-0.61	-0.48
- 5	-0.24	-2.63**	-0.72
- 4	-0.01	1.59	-0.73
- 3	-0.08	-0.74	-0.81
- 2	-0.32	-3.01**	-1.13
- 1	-0.65	-4.58**	-1.78
0	-0.13	-1.18	-1.91
1	0.11	0.73	-1.80
2	0.11	1.23	-1.69
3	0.05	0.92	-1.64
4	0.06	0.79	-1.58
5	-0.04	-0.68	-1.62
6	0.11	1.40	-1.51
7	-0.05	-0.44	-1.56
8	-0.11	-1.75	-1.67
9	0.02	-1.22	-1.65
10	0.01	0.61	-1.64
(11, 20)	-0.04	-1.76	-1.68
(21, 30)	0.02	-0.41	-1.66
(31, 40)	-0.07	-2.03*	-1.73
(41, 50)	-0.00	-0.73	-1.73

*Significant at α=.05   **Significant at α=.01

THE INFORMATION CONTENT OF STANDARD & POOR'S
COMMON STOCK RANKING CHANGES

Abstract of dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy

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ABSTRACT

      This study examines the information content of Standard
& Poor's common stock ranking changes. These rankings are
derived from a system which begins with a computer-generated
score for per-share growth, stability, and cyclicality of
earnings and dividends for the most recent ten years of
available data. Standard & Poor's then makes adjustments to
the scores based on firm size, sales volume, "relative
current standing," and special considerations. The eight
rankings are as follows: A+ (Highest), A (High), A- (Above
Average), B+ (Average), B (Below Average), B- (Lower), C
(Lowest), and D (In Reorganization).
      Although the rankings are not purported to be buy or
sell recommendations, they do incorporate information
provided by Standard & Poor's on which investors may base
investment decisions. Haugen [1979], and Muller, Fielitz,
and Greene [1983, 1984] find that the rankings are closely
related to risk, as measured by beta and the standard
deviation of returns, while the rankings are not a reliable
measure of return.
      Standard & Poor's makes common stock ranking changes
daily. A ranking change can be either an upgrade, a down-
grade, the initiation of a ranking, or the withdrawal of a
ranking. The ranking changes are initially revealed by
Standard & Poor's via internal memoranda. The memoranda are
released daily to a time-share service which provides the
information to its customers. The ranking changes are
subsequently published at the end of the month in the Stock
Guide.
      Daily memoranda for the 1,879 ranking changes from June
1985 to May 1987 were obtained from Standard & Poor's.
Using the market model, stock prices are found to be fully
adjusted by day 0, the memorandum date, for both the All
Upgrades and the All Downgrades portfolios. However, the
adjustment process differs by type of ranking change. The
results from a Wall Street Journal Index search indicate
that Standard & Poor's changes rankings following earnings
announcements. While no relation is found between rankings
and return, a close relation is found between rankings and
risk, both before and after a ranking change. Also, a
statistically significant fall in the mean beta for the All
Upgrades portfolio is found following the memorandum date.
Thus, firms upgraded by Standard & Poor's are found to have
less risk in the post-event period than in the pre-event
period.

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