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The Information Content of Standard & Poor's Common Stock Ranking Changes

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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 adjustments). 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

[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.

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 downgrade, 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 approximately 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 information 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 Wall Street Journal Index 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 particular 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 quality 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

[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.

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 performance 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 decisions. 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 company, 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 surprising 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 simultaneously, 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 computer, they are edited, and may be changed, to reduce the magnitude and frequency of changes in rank. These are the only ways in which subjective judgement 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 published 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 evaluating 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 overall market movements. The failure of those articles to control for market effects casts considerable 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 Eisenstadt 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 downgraded 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

[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 significant than the fact that there are always a few gamblers ahead of the house in Las Vegas....
> This is not evidence of a capability systematically 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.	No. of Stocks 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 constant over time. Also, risk is related to the variability in earnings changes. Figures are in percent.

Portfolio	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-variability ratio for the entire ten-year period, but portfolios A+,B+, and B outperform portfolio A in the first, second, and third subperiods, respectively.

		Portfolio Reward-To-Variability Ratios (Mean/Standard Deviation of Total Returns)			
Portfolio	Beta	Total Period	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

[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:

$$R_{it} = \alpha_i + \beta_i R_{mt} + e_{it} \quad \ldots (3.1)$$

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 negative 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

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

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

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

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:

$$CAAR_{t,t+k} = \sum_{\tau=t}^{t+k} AAR_{\tau} \quad \ldots (3.4)$$

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

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

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

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

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

[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

[24] In a letter (dated September 27, 1988) which accompanied 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.

[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 Stock Guide. 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
Stock Guide. July 1985 - June 1987.

Prior Ranking	New 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 Wall Street Journal Index search for confounding events is necessary. The frequency of confounding events reported in the Wall Street Journal 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 downgraded 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 percentage 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

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 portfolios 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 upgraded 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 Interactive 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 withdrawal 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 portfolio 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.

	B- to B n=40		
Event Day(s)	AAR	t	CAAR
(-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.

	C to B- n=46		
Event Day(s)	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.

All Upgrades
n=191

Event Day(s)	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 Wall Street Journal Index 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

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 α=.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 Wall Street Journal Index from day -5 to day 5 for common stocks downgraded 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 upgrades 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 downgrades 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.

NR to Ranking n=42			
Event Day(s)	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 α=.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.

		50 Days Before Event		50 Days After Event	
Portfolio	n	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 α=.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.

		50 Days Before Event		50 Days After Event	
Portfolio	n	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 α=.05 (one-tailed test)

Table 4.34

Mean betas and the number of securities for various portfolios 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.

	Pre-Event		Post-Event						
Ranking	Up	Down	Up	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

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 earnings 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]

[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 significant 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 information 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 Performance 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 α=.05 **Significant at α=.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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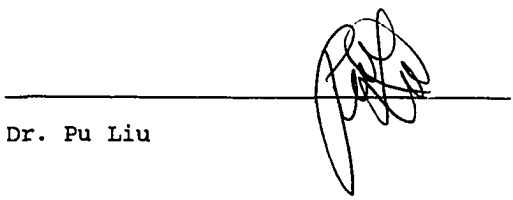

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ABSTRACT

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 downgrade, 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.