1968

The Effect of Mergers and Acquisitions on the Market Value of Common Stock.

Stanley Byron Block
Louisiana State University and Agricultural & Mechanical College

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**BLOCK, Stanley Byron, 1939-
THE EFFECT OF MERGERS AND ACQUISITIONS
ON THE MARKET VALUE OF COMMON STOCK,**

**Louisiana State University and Agricultural and
Mechanical College, Ph. D., 1968
Economics, finance**

University Microfilms, Inc., Ann Arbor, Michigan

THE EFFECT OF MERGERS AND ACQUISITIONS
ON THE MARKET VALUE OF
COMMON STOCK

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

The Department of Business Finance and Statistics

by
Stanley Byron Block
B.B.A., University of Texas, 1961
M.B.A., Cornell University, 1964
January, 1968

ACKNOWLEDGMENT

The writer wishes to thank Dr. Donald E. Vaughn, Associate Professor of Business Finance, for his assistance and understanding throughout the preparation of this study. The writer is also indebted to Dr. Vaughn for the help and guidance he has offered for the past three years.

Sincere appreciation is extended to Dr. Roger L. Burford, Professor of Business Statistics, and Dr. Donald L. Woodland, L. B. A. Professor of Banking, for their helpfulness and cooperation. The writer also wishes to thank Dr. Lloyd F. Morrison, Professor of Accounting and Business Finance, and Dr. Lee Richardson, Assistant Professor of Marketing, for their willingness to serve as members of the examining committee.

A special note of thanks is also extended to Mr. and Mrs. Roy O. Smith for their help in the preparation of the final manuscript. Lastly, the writer wishes to thank his family for their patience and understanding throughout his education.

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ABSTRACT

This study examines the basic elements relating to price changes in mergers and acquisitions. Although mergers have been analyzed in depth for possible synergistic benefits, very little research has centered on equity value movements.

In order to appreciate the intricacies of price behavior, pertinent financial considerations were also probed. Thus the methods of financial recording, the terms of exchange and the forms of consideration tendered were also considered as supplemental items.

The main empirical study dealt with pinpointing price changes at various points in time. Thus a time period of nine months before announcement to six months after announcement was analyzed at ten different points in time. Thirty-five combinations between 1961 and 1965 were examined. Each acquirer and acquiree was paired with a non-merging company which possessed similar characteristics in regard to operations performed and investment quality. A test of the significance of the difference in means was used to determine if merging companies were statistically unique.

The results indicated the merger effect took hold at three months before announcement and continued to be important almost to the time of approval. The companies to be acquired received the important benefits of price increases.

For example, the null hypothesis of no difference in means could be rejected at a .000001 level of significance for the acquirees during the period of one month before announcement to announcement. The hypothesis of no difference was also rejected to a lesser degree for other time periods. The acquirers, however, showed no pattern of being significantly different.

Related financial analysis also indicated the importance of "pooling of interests" vs. "purchase of assets" recording on earnings per share and market value. Supplemental empirical data indicated the frequent gap between consideration tendered and book value surrendered and the need for the most advantageous accounting method.

The amount of market premium paid also had an effect on price movement. Acquiree corporations that received large premiums often increased in value for an extended period of time. Convertible preferred stock was frequently used to circumvent the possible effect of large premiums on the acquirer's earnings per share. Small decreases in earnings per share were counterbalanced by slightly increased P/E ratios.

In summary, potential acquirers often represent a good investment, while acquiring companies are less attractive. Merger candidates may be partially identified through intensive industry analysis and reliance on various financial publications. The main danger in investing in anticipated

mergers is that plans may be called off before consummation and large market set-backs will ensue.

CHAPTER I

BACKGROUND AND SCOPE OF THE STUDY

I. INTRODUCTION

Business combinations have been an integral factor in the growth of the United States economy. Major industries, such as steel, oil, and electronics, have relied upon the amalgamation of individual elements to create industrial giants.

In discussing the desire to merge, California Industrialist Norton Simon says, "Mergers are inevitable . . . they (companies) will make all sorts of excuses 'why it makes sense' for a certain merger."¹

The main reasons one company may seek to acquire or combine a second company are (1) opportunities for vertical or horizontal integration, (2) diversification of product lines, and (3) stabilization of secular, cyclical and seasonal influences. Other reasons include better research possibilities, broader financing opportunities, new management skills, and tax avoidance opportunities.

¹"Why Companies Seek Greener Fields," Business Week (March 12, 1966), p. 59.

Because of the present importance of business combinations² and the likelihood of mergers and acquisitions to play a part in the economic future of the United States, this is a fruitful area for study. The emphasis in this investigation is on equity value movements (price movements), but there are other related areas which are also examined to appreciate the importance of price changes and financial dealings.

In order to determine equity value movements, thirty-five mergers were randomly chosen and analyzed for significant price moves before announcement, after announcement but before approval, and after approval. Both the acquirer companies and acquiree companies were investigated. The time period chosen was 1961 to 1965.

Part of the framework for the analysis is established in this chapter. First, the merger movement in the United States is briefly examined. This is followed by an investigation of the relevant literature in the areas of interest and a general outline of the scope of this study, all specifics of the study being explained in the individual chapters.

²1750 mergers were charted by the Federal Communications Commission in 1966, The Wall Street Journal (February 24, 1967).

II. THE MERGER MOVEMENT IN THE UNITED STATES

Three distinct time periods in the last seventy or so years have ushered in great waves of merger activity. Ralph L. Nelson maintains that there is a correlation between merger activity and industrial growth and general prosperity.³ Some evidence affirming this theory may be shown to exist.

The first merger period occurred at the turn of the century, from 1895 to 1904. Those were the days of the so-called robber barons where the objective of business combinations was often to lessen competition.⁴ Much of the distrust created in the early days has been eliminated through substantial legislative and judicial action. In that period such industrial giants as Standard Oil Company (New Jersey), United States Steel, The American Tobacco Company, International Harvester Company, General Electric, E. I. Dupont and others began their climb to industrial power.⁵

In 1904 the Northern Securities decision was handed down by the Supreme Court.⁶ This decision, and attendant

³Ralph L. Nelson, Merger Movements in American Industry 1895-1956, National Bureau of Economic Research, No. 66 (Princeton, 1959).

⁴Robert Sullivan, "What Is Back of the Drive Toward Mergers," CXIII, The Magazine of Wall Street (October 19, 1963), 111.

⁵George D. McCarthy, Acquisitions and Mergers (New York, 1963), p. 6.

⁶Northern Securities Co. v. United States, 193 U. S. 197 (1904).

economic circumstances, brought an end to the first merger period. The decision held that mutual agreement by participating parties to consolidate was not sufficient grounds for circumvention of the Sherman Anti-trust Act.⁷ The decision superceded an earlier opinion of the Supreme Court in the Knight Case, in which the right of voluntary collaboration was upheld.⁸ Two great empires were scaled down as a result of the Northern Securities decision. The Standard Oil Company (New Jersey) was split up into thirty-three parts and The American Tobacco Company was broken up into five pieces.⁹

The second merger wave took place in the 1926 to 1930 period. This span in time coincided with the greatest relative stock market activity in history.¹⁰ Such giants as National Dairy Products, General Foods, Borg Warner, United Aircraft and Bendix Aviation were created. The movement abated with the depression in the thirties.

The third merger movement coincides with the post-World War II prosperity in the United States and continues to the present. Whereas the first merger period emphasized absorption of competition or horizontal integration, and the

⁷Ibid

⁸United States v. E. C. Knight Co., 156 U. S. 1 (1895).

⁹McCarthy, op. cit., p. 7.

¹⁰Ibid., p. 8.

second period emphasized holding companies or vertical integration,¹¹ in the third period the emphasis has shifted to diversification or conglomerations. Aside from the presumed economic advantages of diversification, a key reason for the shift has been the actions of the Federal Trade Commission and Justice Department. Under the 1950 amendment to Section 7 of the Clayton Act, the government has had more flexibility in attacking mergers interfering with competition.¹² Thus, horizontal mergers and vertical mergers are more difficult to consummate. A natural consequence is the growth of conglomerates. Companies such as Litton Industries, Ling-Temco-Vought, Georgia Pacific, W. R. Grace, Textron and others have grown to prominence during this post-war period.¹³

Corporate mergers were at an all-time high in 1965 and have leveled off in volume by eight to ten per cent (depending on whether the FTC, the U. S. Statistical Abstract or W. T. Grimm is being consulted) in 1966 and early 1967. However, the merger movement is very much in evidence (1966 activity was the third largest in almost four decades). By historical standards, the stock market and economy are still operating at a reasonably high level. Even though

¹¹Of course vertical integration may take many forms.

¹²Ibid., p. 252.

¹³"Mergers Keep Growing - With a Difference," Business Week (March 21, 1964), 64.

some economic problems continue to arise, they have not been sufficient to halt the merger tide.

III. REVIEW OF LITERATURE

A full scale study of the effects of mergers and acquisitions on equity values has not been previously undertaken. Some studies have attempted to analyze equity values as a secondary consideration, but in all instances the time period studied was inappropriate for significant conclusions to be drawn.

The major financial and economics studies in this area have attempted to discern the impact of business combinations on profitability. The best known studies in this field refer to the first period of mergers.

In 1921 Arthur S. Dewing published a classic study entitled, "A Statistical Test of the Success of Consolidations."¹⁴ Dewing investigated thirty-five merging companies that had been in existence for at least ten years prior to 1914. He tested to determine whether the earnings of the emergent industrial corporation were greater than the sum of the constituents' earnings prior to merger. His results were negative, as earnings of the companies dropped eighteen per cent the year after merger. Furthermore, average

¹⁴Arthur S. Dewing, "A Statistical Test of the Success of Consolidations," Quarterly Journal of Economics, XXXVI (November 21, 1921), 84-101.

earnings for ten years after merger were ten per cent lower than earnings one year after merger. Dewing also concluded that consultants and bankers were overly optimistic about prospects for earnings in all but five cases.

The next study pertaining to this era was by the National Industrial Conference Board, published in 1929.¹⁵ This study discussed forty-eight combinations between 1900 and 1913 and maintained that there was no evidence that mergers led to profitability in terms of increases in earnings or market prices for the acquirer. Historians, however, have not attached great validity to these results. Even the study includes these comments in discussing acquiring companies, "Whether or not they have been more successful or less successful than enterprises organized on a different basis, there is no means of measuring by statistical methods."¹⁶

Shaw Livermore was the next analyst to examine this period of time (as well as the 10's, 20's and early 30's).¹⁷ He was primarily interested in return on capital and examined 328 companies that were involved in combinations between

¹⁵National Industrial Conference Board Study, Mergers in Industry (New York, 1929).

¹⁶Ibid., p. 85.

¹⁷Shaw Livermore, "The Success of Industrial Mergers," Quarterly Journal of Economics, C (November, 1935), 68-95.

1888 and 1905 (the relevant data was examined for a time period spanning to 1934). Livermore compared the success of the 328 companies to a general survey of industrials compiled by R. H. Epstein.¹⁸ His results were contrary to earlier findings as he ascertained that successful merging companies had better performances than successful non-merging companies in terms of return on invested capital. A reasonable criticism is that Livermore was measuring earnings against book value.

In 1957 Ralph L. Nelson published his previously mentioned survey for the National Bureau of Economic Research. His empirical study on profitability and market appreciation involved thirteen combinations consummated between 1899 and 1901. The relevant information was examined for a period of nine years, 1901 to 1910. Nelson attempted to measure the profitability of investing in mergers. Thus he considered market value appreciation as well as dividend payments. The rate of return over the nine year period was determined on the basis of the compound interest growth in the value of the stocks. Dividends were included, but were not assumed to be reinvested. Nelson maintained that acquiring companies had better common stock returns than industrial preferred stock issues or bond issues. This does not really represent

¹⁸R. H. Epstein, Industrial Profits in the United States, National Bureau of Economic Research (New York, 1934).

comparability or answer the type of question considered in this study.

Until the third merger period, there were no other significant studies dealing with the impact of business combinations on profitability. There were, however, numerous investigations into the relationships of corporate size and profitability.

The studies on corporate size and efficiency did not specifically consider the merger or attempt to isolate its effects. Two examples of these studies are the Sommers¹⁹ and Crum²⁰ investigations into the economies of scale. Although these studies concluded that the larger the firm (up to a point) the more profitable the operation, such a conclusion cannot be justifiably transferred to the merger problem where growth is often sudden and large premiums may be paid.

In the 1950's an important study on exchange rate determination was published. Chelcie C. Bosland examined twenty-six mergers taking place in 1953 and 1954²¹ and

¹⁹H. B. Sommers, "A Comparison of Rates of Earnings of Large Scale and Small Scale Industries," Quarterly Journal of Economics, XXXVI (May, 1932), 465-479.

²⁰W. S. Crum, Corporate Size and Earning Power (Boston, 1939).

²¹Chelcie C. Bosland, "Stock Valuation in Recent Mergers," Trust and Estates, XCIV (June, July, August, 1955), 516-526, 583-590, 662-669.

pinpointed some of the significant variables. Bosland maintained that earnings were very important as they indirectly reflected market value potential. He placed very little emphasis on book value.

In the 1960's there has been a revival of interest in the study of mergers. Furthermore, the area of investigation is much broader than that of earlier periods.

In 1960, Booz-Allen and Hamilton, management consultants, published a survey of 128 mergers in the Chicago area.²² Although no attempt was made to ascertain whether merging companies were more successful than non-merging companies, it was determined that the more often companies merged, the more likely they were to be successful and profitable.

In 1962 David D. Folz and J. Fred Weston published an excellent discourse on the significance of the relative P/E ratios of the combining companies and the compensating factor of differential growth ratios.²³

Also in 1962 Leonard Townsend Wright wrote his dissertation on "Some Financial Aspects of Recent Corporate Mergers

²²Booz-Allen and Hamilton, Management of New Products, 3rd ed. (New York, 1960).

²³David D. Folz and J. Fred Weston, "Looking Ahead in Evaluating Proposed Mergers," NAA Bulletin XVII (April, 1962), 27.

and Consolidations."²⁴ Because Wright was interested in mergers facing difficulties, his results are not of a general nature. Wright analyzed eight companies through the case method.

Frank K. Reilly contributed an interesting study in 1962 entitled, "What Determines the Ratio of Exchange in Corporate Mergers."²⁵ His study of fifty companies indicated that relative market values were of importance to both acquiring and acquiree companies. He said other factors may not be completely ignored. The last cited publication for the year is the Mace and Montgomery publication, Management Problems of Corporate Acquisitions.²⁶ The study covers every aspect of mergers (accounting, financial, legal, etc.) from a case method prospective.

In 1963 two full length books were published on business combinations. The McCarthy text, previously cited,²⁷

²⁴Leonard Townsend Wright, "Some Financial Aspects of Recent Corporate Mergers and Consolidations" (Ph.D. dissertation, The American University, 1962).

²⁵Frank K. Reilly, "What Determines the Ratio of Exchange in Corporate Mergers," Financial Analysts Journal, XVIII (November-December, 1962), 47-50.

²⁶Myles L. Mace and George G. Montgomery, Jr. Management Problems of Corporate Acquisitions (Cambridge, Massachusetts, 1962).

²⁷See Footnote 5. McCarthy is with Price Waterhouse.

is excellent in describing many of the financial aspects of mergers as well as elaborating on legal and accounting problems. This very comprehensive work follows the pattern of most other studies in that it does not directly tackle the problem of trading losses or gains from investing in mergers and acquisitions. Nevertheless, it presents valuable related information.

The second book was published under the direction of Richard Young and is an Arthur D. Little, Inc. study.²⁸ The text covers financial and legal problems and contains a reasonably good explanation of how to pick suitable companies with which to negotiate.

An important contribution to the understanding of mergers and acquisitions was made in 1963 by Arthur R. Wyatt in Accounting Research Study No. 5 for the American Institute of Certified Public Accountants. Wyatt reevaluated the alternate methods for recording business combinations and showed the potential impacts on earnings per share and possibly market value.²⁹

²⁸ Clarence I. Drayton, Jr., Craig Emerson and John D. Griswald under the direction of G. Richard Young of Arthur D. Little, Inc., Mergers and Acquisitions: Planning and Action (New York, 1963).

²⁹ Arthur R. Wyatt, A Critical Study of Accounting for Business Combinations, Accounting Research Study No. 5, for the American Institute of Certified Public Accountants (New York, 1963).

In 1964 attorney Charles A. Scharf published Techniques for Buying, Selling and Merging Businesses. He presents important considerations in making legal and financial decisions. Some of his discussion of contractual law is not relevant, but his views on valuation and other areas are worthy of consideration.³⁰

The following year Eamon Michael Kelly wrote his dissertation on "The Profitability of Growth through Mergers."³¹ Kelly surveyed twenty-two post World War II mergers, and his research is very thorough. Kelly calculates some ratios on market price, but only on the basis of an average of annual highs and lows over a ten year period and only for the acquirer. He does not answer the type of question to be considered in this study.

In 1966 a compilation of speeches and discussion at a University of Chicago seminar on corporate growth was published. The book entitled The Corporate Merger³² presents interesting information on exchange ratios and capital budgeting in mergers (as well as various other areas).

³⁰Charles A. Scharf, Techniques for Buying, Selling and Merging Businesses (New York, 1964).

³¹Eamon Michael Kelly, "The Profitability of Growth through Mergers" (Ph.D. dissertation, Columbia University, 1965).

³²William W. Alberts and Joel E. Segall, The Corporate Merger (Chicago, 1966).

Also in 1966 Lynn E. Dellenbarger, Jr. published a text entitled Common Stock Valuation in Industrial Mergers.³³

The author had previously expressed his main contentions in a 1963 article of the Journal of Finance.³⁴ Dellenbarger deals with exchange rate determination, and says companies concern themselves more with equalizing the terms of exchange in terms of relative stock values than with earnings, dividends or book value. Dellenbarger implies that book value may be important only under limited circumstances.

The last study, to be cited, was by security analyst Anna Merjos and deals with market value changes related to cancelled merger plans.³⁵ This analysis is somewhat germane to the present study. Miss Merjos' study considered price changes (in thirty mergers) for the acquirer and acquiree for one month prior to merger announcement to one day after merger announcement and one day after news of cancellation to one month after news of cancellation. Miss Merjos' time period was 1965 and early 1966.

³³Lynn E. Dellenbarger, Jr., Common Stock Valuation in Industrial Mergers (Gainsville, Florida, 1966).

³⁴Lynn E. Dellenbarger, Jr., "A Study of Relative Common Stock Equity Value in Fifty Mergers of Listed Industrial Corporations, 1950-57," Journal of Finance, IXX (September, 1963), 564-565.

³⁵Anna Merjos, "Broken Mergers: A Security Analyst Adds Up the Gains and Losses," Barron's XXXVI (March 21, 1966), 5, 17.

Of course, Miss Merjos' study falls short of answering the questions to be considered in this study. For example, Miss Merjos considered only those announcements of mergers that were subsequently cancelled. Secondly, her time intervals were inadequate to evaluate the full effect of mergers and acquisitions on the market price of securities involved. Obviously there is no post-approval or even controlled post-announcement data.

Some of Miss Merjos' results are integrated into Chapter V and VI because her study, within its bounds, is enlightening in regard to price movements. Miss Merjos' work is also a prime source on changes in stock values when merger plans are called off.

The discussion of related literature indicates mergers have been studied by many scholars. Nevertheless, no significant research has been conducted concerning the direct effect of mergers and acquisitions on the market value of common stock for a meaningful period of time. All studies have had other purposes, and are inadequate to establish general propositions.

IV. THE SCOPE OF THE PRESENT STUDY

The present study attempts to isolate the effect of business combinations on the market value of common stock. The procedure is to first of all explain the related financial implications and then empirically test price changes.

In Chapter II alternate methods of recording business combinations are presented, with a full explanation of possible impacts on earnings per share and market value. The difference between a book value basis and cost basis of absorbing the acquiree is demonstrated, and the potential pitfalls are pointed out. Certain tax aspects are also covered in this chapter.

In Chapter III valuation and exchange ratio theory are considered. The problem of ascertaining the key variables in exchange rate determination is discussed at length. As indicated in Chapter VI, there is some evidence that exchange ratios have an effect on price movements.

The "relative P/E ratio-differential growth rate" concept in mergers is also presented in Chapter III as a necessary part of the discussion of exchange rate determination. Folz and Weston have pioneered some very interesting thinking in this area and their work is integrated into the analysis.

The means of payment factor is examined in Chapter IV. Although a business combination may appear to be undesirable when common stock or cash is the consideration tendered, the same merger may be desirable under a convertible preferred stock plan. The main items to be considered in choosing a means of payment plan are accounting implications, tax implications, SEC and NYSE requirements, and the related effects of all these items on earnings per share. These factors are considered in Chapter IV.

After the essential concepts of mergers are developed in the first four chapters, the empirical study is presented in Chapter V. In this chapter an attempt is made to pinpoint trading opportunities directly related to the merger. Whereas other studies have considered price movement incidental to measuring profitability or other items, this study is concerned with price movement as a primary consideration.

Substantial concern for the acquiree as well as the acquirer is a fairly unique feature of this study. Previous studies, with the exception of Merjos, have dealt only with the performance of the acquiring company for some extensive time period after the merger. The present study attempts to comprehend the market movement of the acquiree as well as the acquirer and to operate within a relevant time period.

Thirty-five randomly selected mergers are to be evaluated. Each merging company was paired with a non-merging company, which is similar in regard to industry classification and investment rating. This indicates a total of 140 companies (thirty-five acquirees plus thirty-five paired companies and thirty-five acquirers plus thirty-five paired companies). The paired companies were selected from small groups of similar companies. Price data was accumulated for periods before announcement, after announcement but before approval, and after approval. A normal curve test of the significance of the difference between means is run

during alternate spans of time and conclusions are drawn. A complex elaboration on the specifics of the text are presented in Chapter V.

The results of the examination on the significance of the difference between means can be used by the investor in different ways. For example given the choice, "is it generally more profitable to invest in companies that are potential acquirers or acquirees?" Secondly, "how far in advance of approval or official announcement should the investor make his move?" Methods of identifying potential merger candidates are also mentioned in Chapter V.

The analysis in Chapter VI integrates much of the information presented in the previous chapters. Empirical evidence is presented on items such as financial recording techniques, exchange ratios, relative P/E ratios, relative earnings per share, means of exchange as well as other items and relevant price factors in regard to certain items are pointed out.

V. SUMMARY

This chapter establishes the background for the remainder of the study. First, the history of mergers in the United States is briefly traced through the three major periods of activity, 1895-1904, 1926-1930, and the post World War II era.

The second section deals with a review of literature in related areas of merger study. Most of the comprehensive studies have been compiled during merger period one or three. Although there is much research on the effect of mergers on profitability, no such inroads have been made on the direct effects of business combinations on price movements. It is the purpose of this study to examine the time variable for both the acquiring and acquiree companies.

The entire project will also cover relevant financial considerations such as methods of recording the transaction, exchange ratio determination and means of payment. The scope of the study is presented in the third section of this chapter. The very specific techniques for analysis are, in many instances, deferred to the individual chapters.

CHAPTER II

THE IMPORTANCE OF "POOLING OF INTERESTS" VS. "PURCHASE" ACCOUNTING FOR MERGERS AND ACQUISITIONS

An analysis of mergers and acquisitions and their potential impact on the market value of common stock indicates the importance of an inside view of accounting and tax implications in this area. For example, whether the merger is recorded as a "pooling of interests" or "purchase" can have an effect on the market value of securities subsequent to the merger. The dominance of "pooling" accounting is indicated in Chapter VI.

In the "pooling of interests" transaction the assets of the acquired enterprise are recorded at book value; whereas in the "purchase" transaction the assets of the acquired company are recorded at their exchange value. When current or exchange value exceeds book value, a larger basis for amortization is established if "purchase" accounting is used. A considerable reduction in earnings per share may well take place with an accompanying decline in market value of securities.

Arthur R. Wyatt, author of A Critical Study of Accounting for Business Combinations, maintains that:

The determination of the appropriate dollar amount at which to record the assets, properties, and equity interests over which an enterprise assumes

ownership or control by means of a business combination is essential to the presentation of fair, equitable, and understandable financial statements.

Of more significance, however, is the effect which the determination of the appropriate dollar amount has in subsequent accounting periods, as reflected in the earnings statements of the emerging or resulting enterprise. The final figure of reported net profit has significance in the determination of earnings per share, in comparisons with prior periods' net profit, and may materially affect the market price of the stock of the reporting enterprise.¹

I. THE DISTINCTION BETWEEN "POOLING OF INTERESTS" AND "PURCHASES"

The main distinction between "pooling of interests" and "purchases" is that the former assumes two or more businesses are combining resources to enter into an alliance in which all former interests are continued, whereas a "purchase" implies one company has assumed dominance over another and no continuity exists.² A synopsis of the AICPA guidelines follows:

'Pooling of interests' recording can generally be justified when shareholders of the absorbed corporation receive new voting issues substantially in proportion to their former equity interests.

¹Arthur R. Wyatt, A Critical Study of Accounting for Business Combinations, Accounting Research Study No. 5, for the American Institute of Certified Public Accountants. (New York, 1963), p. 17.

²American Institute of Certified Public Accountants, Committee on Accounting Procedure, Accounting Research Bulletin No. 48, "Business Combinations" (January, 1957), Section 3.

Furthermore, there should be some evidence of continuance of management influence by the absorbed company. A third criterion is that the sizes of the companies involved should not be substantially different.³

"Purchase" accounting is appropriate when the consideration paid for the stock or assets of the absorbed company is something other than voting stock of the vendee. Thus if the quid pro quo is composed of fifty per cent voting common and fifty per cent cash or non-convertible preferred stock, the transaction should probably be recorded as a "purchase." Furthermore, if payment received is in the form of one hundred per cent voting stock, but a large group of absorbed shareholders sell out their interest shortly after the merger, "purchase" accounting will be more appropriate. (There is obviously no continuity of interests.) Similarly, if the acquiring company sells a portion of the acquired company shortly after consummation of the merger, there is also a prima facie case for "purchase" accounting.⁴

Actually the guidelines summarized here are just that and nothing else. Although the accounting profession has, at times, attempted to clear up the hazy areas surrounding the criteria for recording mergers and acquisitions, it has

³Ibid., Section 6.

⁴Ibid., Section 5.

been successful.⁵ The American Institute of Certified Public Accountants has issued Accounting Research Bulletins 24, 40, 43, and 48 all dealing in part or in whole with accounting for business combinations and amortization of intangibles. However, these documents have established no lasting precedents. Because the question of inadequate criteria is quite complicated and involved, more detailed discussion will be deferred to section three of this chapter. At present, some evidence of an exchange of voting shares for voting shares or net assets is often sufficient to qualify a merger for "pooling of interests" treatment regardless of most other factors.⁶

II. THE IMPACT OF "POOLING OF INTERESTS" VS. "PURCHASES" ON FINANCIAL STATEMENTS

The book value of the absorbed company is brought directly onto the books of the acquiring company in the case of a "pooling." Furthermore, the earned surplus of the absorbed company may be carried over for financial statement purposes.⁷ To the extent the vendor and the vendee operate

⁵R. C. Lauver, "The Case for Pooling," The Accounting Review ^{VII} (January, 1966), 72.

⁶Wyatt
⁶Wyatt, op. cit., p. 110 (contributed by Holsen) or Robert C. Holsen, "Another Look at Business Combinations," The Journal of Accountancy, CXVI (July, 1963), 67.

⁷Accounting Research Bulletin No. 48, op. cit., Section 9.

no more or no less efficiently than they did prior to the merger, the merged enterprise's reported earnings and earned surplus account will be exactly the same as that of the sum of the constituent companies before the merger.

This is not the case in dealing with a "purchase of assets." According to Section 8 of Accounting Research Bulletin Number 48:

When a combination is deemed to be a purchase, the assets acquired should be recorded on the books of the acquiring corporation at cost, measured in money, or in the event other consideration is given, at the fair value of such other consideration, or at the fair value of the property acquired, whichever is more clearly evident. This is in accordance with the procedure applicable to accounting for purchases of assets.⁸

In light of this recommendation, the value of net assets acquired under a "purchase" transaction are generally recorded at the market value of the vendee's stock, plus the dollar amount of any cash proffered. (Of course the vendee may offer nothing but cash, and the net assets are recorded at the amount of the cash tendered). Thus there is a credit to the capital section of the vendee's balance sheet for the total current cost of net assets acquired, and a debit to assets and credit to liabilities based on book value of the acquired company. Because of the history of steadily rising prices in the United States, it is likely that the current

⁸ Ibid., Section 8.

cost of net assets will exceed the book value cost and a large debit entry will be missing. For example, if a company with fifteen million dollars in assets and five million dollars in liabilities is purchased for fifteen million in preferred stock, the accounting entry is to credit the capital accounts for fifteen million dollars, credit liabilities for five million dollars, and debit assets for fifteen million dollars. Thus, in this particular instance there is a missing debit entry of five million dollars. It is common accounting practice to debit this five million dollars either to tangible assets or intangible assets. To the extent a specific allocation cannot be inferred from the terms of the transaction, the particular intangible goodwill absorbs all or a portion of the five million dollars.

Until 1953, this debit entry was not considered a significant problem. Virtually all of the debit balance was allocated to goodwill and written off immediately against a surplus account. The net result was exactly the same as if a "pooling of interests" had taken place. However, Chapter 5 of Accounting Research Bulletin No. 43 contained these rather strong words of advice:

Lump-sum write-offs of intangibles should not be made to earned surplus immediately after acquisition, nor should intangibles be charged against capital surplus. If not amortized systematically, intangibles should be carried at cost until an

event has taken place which indicates a loss or a limitation on the useful life of the intangibles.⁹

No longer could "purchases" be restated to look like "poolings" after a fast write-off. A company had to either amortize goodwill systematically or carry it on their books until such time as they could be justified in writing it down. These same principles exist today. Because the experiences of the 1920's and 1930's have left a stigma on the practice of carrying goodwill as an asset, most companies amortize goodwill even when its useful life appears to be totally unimpaired and its projected value undiminished.¹⁰

The amortization of the goodwill is particularly deleterious to profits because it is a non-tax deductible expense, thus it is merely subtracted out of after tax income. Actually, even if part of the excess of current cost of assets over book value had been charged to tangible assets, the amortization of this excess for tax purposes would only be allowable if the merger itself were a taxable event.

In the previously described case on page 25, if the five million dollar differential between tendered value and book value had been assigned to goodwill under a "purchase"

⁹Accounting Research Bulletin No. 43, Chapter 5, Section 9.

¹⁰Wyatt, op. cit., p. 61.

recording, it would be amortized against future income on an after-tax basis for financial statement purposes. If the normal write-off period were ten years and average income were five million dollars, a "purchase" recording would mean a ten per cent decline in after-tax income and a likely drop in market value. This, no doubt, is the reason for interest in the methods of recording mergers by the financial and academic community.

III. THEORETICAL ISSUES IN "POOLING OF INTERESTS" VS. "PURCHASE" ACCOUNTING

An article entitled "Accounting and Auditing Problems," edited by Carman G. Blough, CPA, outlines the theoretical accounting issues involved in "pooling of interests" and "purchase" accounting.

There are highly regarded accountants who are strongly of the opinion that the profession made a serious mistake when it accepted the pooling concept as ever being appropriate.

Others strongly decry the extent to which pooling has been carried. They believe it has been applied in a great many cases that have not only gone far beyond the areas that its original sponsors ever contemplated but far beyond all reason.

Still others, equally well regarded, think the pooling concept is the best accounting device for accomplishing a combination of two or more corporate entities that has ever been developed.¹¹

¹¹Carman G. Blough, "Accounting and Auditing Problems," The Journal of Accountancy, CX (September, 1960), 73.

The main argument of those who favor "pooling" is that nothing of real substance takes place in business combinations when equity values are transferred by the constituent companies. All that happens is that a total package of assets is now owned by different interests. The combined left-hand side of the balance sheet is unchanged; the only alteration is in ownership interest. This raises the question, "Is it the function of accounting to reflect changes in ownership?" Certain advocates of "pooling" maintain that the accountant's job is merely to reflect the value of the equity and not changes in ownership of the equity. R. C. Lauver perhaps best establishes this case when he says:

The interests of the separate groups of shareholders are affected by being reallocated but this need has no effect on the businesses; in other areas accounting does not attempt to recognize allocations of ownership interests. Because an accounting entity is largely defined by identification of its owners, who in this case have continued in business much as before, the constituent entities are deemed to have merged and become one without change except as to form and legal requirement.¹²

Those who express a strong belief in "pooling" as a proper form of recording, also tend to minimize the importance of the various criteria for distinguishing between "pooling" and "purchasing." The general claim is that paragraph 6 of Accounting Research Bulletin No. 48,¹³ which

¹²Lauver, op. cit., p. 70.

¹³Accounting Research Bulletin No. 48, op. cit., Section 6.

lists pre-requisites for "pooling," is outdated and unrealistic.¹⁴ Furthermore, supporters of "pooling" are willing to accept a percentage of total payment in the form of cash or non-convertible preferred stock as long as the main intention was to exchange equity shares.¹⁵

Many academicians express doubt about the widespread use of "pooling of interests." Lawrence Phillips claims that both "poolings" and "purchases" have been used indiscriminately and that the accountant takes his choice as to what is most beneficial.¹⁶

One of the strongest documents advocating the restriction of the so-called arbitrary use of "pooling of interests" is the Wyatt Study.¹⁷

Wyatt asks the question, "Is a business combination an exchange transaction?" If it is, then the assets transferred should be recorded at current value. Wyatt maintains that this question can be answered by examining the relationship of the combining companies. Accountants should determine whether the companies dealt at arms length to affect the merger. Where this occurs, no "pooling" treatment should

¹⁴Lauver, op. cit., p. 72-74.

¹⁵Ibid., p. 74, and Wyatt, op. cit., pp. 111, 112 (contributed by Holsen), or Holsen, The Journal of Accountancy, p. 67.

¹⁶Lawrence C. Phillips, "Accounting for Business Combinations," The Accounting Review, XL (April, 1965), 40.

¹⁷Wyatt, loc. cit.

apply. Wyatt maintains this position even when voting stock is transferred by the acquiring company; his reasoning is that when an arms length transaction has taken place, the use of stock is merely a substitute for cash or other forms of assets. The only terms under which Wyatt will accept "pooling" recording is when two closely related companies combine their interests in what amounts to a change in legal form.¹⁸

Two divergent theoretical viewpoints have been presented. The question is, "which will be accepted in the future?" The AICPA is currently involved in a study of "Goodwill in Business Combinations." Related Studies and Opinions can be expected in the future. Perhaps new publications will be more enlightening than those of the past.¹⁹ Less arbitrary decisions on "poolings" may result.

IV. TAX IMPLICATIONS IN BUSINESS COMBINATIONS

Because "pooling" and "purchasing" are techniques of recording mergers and acquisitions primarily for financial statement purposes, their effect on taxable income is nil. Nevertheless, "pooling" accounting and "tax-free" mergers have tended to go together, and the same is true of taxable mergers and "purchase" accounting. Many of the criteria of

¹⁸Ibid., pp. 69-73.

¹⁹Research Bulletins No. 40, 43, 48 and Research Study No. 5.

the AICPA are parallel, at least in spirit, to the wording of the Internal Revenue Code of 1954.

"Tax-free" mergers, of course, mean there is no immediate tax liability for value received in excess of cost. A tax will eventually be paid when the value received is disposed of, but a liability is not established on consummation of the merger.²⁰ The three possible types of "tax-free" mergers are (1) a statutory merger or consolidation; (2) an exchange of stock for stock; (3) an exchange of the assets of the acquiree for the stock of the acquirer.²¹ All three forms are considered to be different types of reorganization plans under the 1954 code.

The first, a statutory merger or consolidation, is conducted under the provisions of the laws of the state or states of incorporation. In most states a prime requirement is that the acquiree shareholders and the shareholders of the acquiring company approve the merger. The approval of acquirer shareholders is often lacking in non-statutory mergers. The requirements relating to consideration paid are fairly non-restrictive under a statutory merger. This is not the case in a stock-for-stock or stock-for-assets exchange.

To qualify as a "tax-free" stock-for-stock exchange, the law specifically requires:

²⁰Internal Revenue Code of 1954, Section 35,4(a).

²¹Ibid., Section 368(a) (1) (A,B,C,).

The acquisition by one corporation, in exchange solely for all or a part of its voting stock (or in exchange solely for all or a part of the voting corporation) of stock of another corporation if, immediately after the acquisition, the acquiring corporation has control of such other corporation (whether or not such acquiring corporation had control immediately before the acquisition).²²

This restrictive language implies a stock-for-stock "tax-free" merger can only be established when exclusively voting stock is exchanged. Furthermore, control over the acquiree must be a necessary consequence of the outcome. Control is signified by at least eighty per cent ownership of the voting and other classes of stock of the acquiree.²³

The third method of "tax-free" combination is the exchange of voting stock for assets; this method is less flexible than a statutory merger but more flexible than a stock-for-stock exchange. The law states that a "tax-free" exchange of voting stock for assets may take place under these circumstances.

The acquisition of one corporation, in exchange solely for all or a part of the voting stock (or in exchange solely for all or a part of the voting stock of a corporation which is in control of the acquiring corporation), of substantially all of the properties of another corporation, but in determining whether the exchange is solely for stock the assumption by the acquiring corporation of a liability of the other, or the fact that property acquired is subject to a liability, shall be disregarded.²⁴

²²Ibid., Section 368(a) (1) (B).

²³Ibid., Section 368(C).

²⁴Ibid., Section 368(a) (1) (C).

Thus, all consideration tendered need not be exclusively in the form of voting stock. Part of the payment can be in the form of assumption of liabilities. Furthermore, if at least eighty per cent of the value of the entire assets to be purchased is paid for in the form of voting stock, the remainder may be paid for by unrestricted means.²⁵ However, if there is partial payment in the form of cash or preferred stock (any unrestricted method), the assumption of liabilities also counts as a form of unrestricted means in applying the eighty per cent rule.²⁶

There is no question about the desirability of a "tax-free" exchange to those shareholders who receive values for their shares in excess of initial cost. The "tax-free" aspect allows taxes to be deferred until disposition of the consideration given for their shares.²⁷ Thus a shareholder who has witnessed a rise in the value of his shares might be willing to accept a lower price under a "tax-free" exchange than under a taxable exchange.

²⁵Ibid., Section 368(a) (2) (iii).

²⁶Ibid., Section 368(a) (2). Also if the only forms of payment are voting stock and assumption of liabilities, the percentage of total assets that may be represented by the assumption of liabilities is unlimited.

²⁷The tax base is the initial cost of the securities that are traded in the merger. This may reevaluate in an estate. Parts of the consideration, such as cash and other assets, would occasion immediate liability even in a "tax-free" exchange. However, this is generally a small part of consideration received under these circumstances.

However, the purchaser and the purchaser's shareholders may be willing to pay a considerably higher price under a taxable transaction. Under a "tax-free" exchange the purchaser cannot amortize any of the excess of market value over book value. Thus, if a considerable amount in excess of book value is paid, the purchaser may be very interested in seeing the transaction ruled as taxable. A "tax-free" transaction recorded as a "purchase" for financial statement purposes is the worst possible combination for the purchaser. The excess over book value is amortized through the income account for financial purposes, but is not a tax deductible expense. Of course, if the consideration given by the acquirer to the acquiree's stockholders represents a discount from the initial cost, all parties to the transactions would take a directly opposite position in order to maximize their positions.

V. SUMMARY

The impact of "pooling" vs. "purchase" accounting on financial statements and future market value of equities cannot be overlooked. Before any merger is consummated, these important elements should be considered both by corporate executives and shareholders. If a large premium over book value is contemplated, the consummation of the merger may depend on whether "pooling" accounting is available. Under "purchase" recording, the effects may be so great that

the merger or acquisition is not feasible. The controversy over "pooling" vs. "purchase" accounting has existed for over fifteen years and it is impossible to predict an end to the present dilemmas.

The tax implications in mergers and acquisitions are also of some importance. The vendee and vendor (or vendor's stockholders) are pulling in opposite directions. The side that wins the argument on tax treatment will likely have to sacrifice consideration in the transfer.

CHAPTER III

VALUATION AND EXCHANGE RATIO THEORY IN MERGERS AND ACQUISITIONS

An essential consideration to equity holders is the value placed on securities surrendered or proffered in a merger agreement. The exchange rate will affect future rights, claims, and market values of the participating securities.

Various empirical studies of exchange rate determination are presented in the first section of this chapter. The results of Reilly, Dellenbarger, McCarthy, Bosland and others indicate some interesting patterns. Exchange rate factors are then considered in a conceptual framework. For example, the Folz and Weston analysis on the importance of relative P/E ratios is integrated into the analysis. In this latter section the emphasis is not on "what is being done," but rather on "what should be done."

I. EMPIRICAL STUDIES OF EXCHANGE RATIO DETERMINATION

Frank K. Reilly evaluated twenty-five mergers of listed corporations in the early sixties, and in each case attempted to determine the importance of relative market prices,

earnings, dividends, book values, or sales in determining the exchange rate.¹

Reilly ascertained that relative market value correlated closely with the exchange rate more often than any other factor. He also determined that earnings and book values tied for second, dividends were fourth and sales per share was not a prime consideration in any of the mergers studied.²

In Lynn Dellenbarger's study of fifty mergers of industrial corporations between 1950 and 1957, the importance of relative market value was also stressed. The author found a very high degree of correlation between terms of trade and the equity values of the acquirer and acquiree. He maintained that earnings and dividends were less important and that book value only assumed importance when a large block of stock was controlled by relatively few stockholders.³

None of the research studies maintain that there is an exact one to one relationship between exchange ratios and relative market values. A premium or discount on the market value of the absorbed company is generally expected.

¹Frank K. Reilly, "What Determines the Ratio of Exchange in Corporate Mergers," Financial Analysts Journal, XVIII (November-December, 1962), 47-50.

²Ibid., p. 50.

³Lynn E. Dellenbarger, Jr., "A Study of Relative Common Stock Equity Value in Fifty Mergers of Listed Industrial Corporations, 1950-57," Journal of Finance, XVIII (September, 1963), 565.

McCarthy compiled data on fifty-eight mergers in which there was an exchange of stock for 1955 through 1961. His findings show that forty-eight premiums and ten discounts were involved, based on prices two months prior to merger. In eight cases the difference between market price paid and market price surrendered was fifty per cent or greater, and in one case the figure exceeded one hundred per cent. The average consideration paid was approximately twenty-four per cent greater than the market value of the vendor's stock.⁴ This average figure seems to be in line with previous studies. Benjamin Graham expressed the belief that twenty per cent is the average premium over a long period of time.⁵ In a study of 130 mergers between 1955 and 1964, Weston and Brigham determined an average premium of ten per cent based on the most recent prices before announcement, and twenty per cent for two quarters prior to announcement.⁶

Relative earnings is also an important consideration in determining exchange ratios. Many acquiring companies are hesitant to accept less earnings per share than they give

⁴George D. McCarthy, Acquisitions and Mergers (New York, 1963), pp. 94-102.

⁵Weston relates a conversation with Graham. J. Fred Weston, "Determination of Exchange Ratios in Mergers," published in William W. Alberts and Joel E. Segall, The Corporate Merger (Chicago, 1966), pp. 117-118.

⁶J. Fred Weston and Eugene F. Brigham, Managerial Finance, 2nd ed. (New York, 1966), p. 665.

up.⁷ McCarthy's study, in which premiums were paid twenty-six out of fifty times, might cast some doubt on this assumption.⁸ However, this data was not related to merger negotiations that were terminated prematurely because of possibly unwarranted fear of immediate earnings' dilution.

In explaining valuations in mergers consummated between the spring of 1953 and August of 1954, Chelcie C. Bosland maintained:

The overwhelming importance of present and prospective earnings is manifest. This corroborates general principles repeatedly stated in books on valuation, finance and investments. While it is particularly true of the market value of minority stock interests as revealed in market transactions, it seems to be no less true in the purchase of a controlling stock interests, a merger of companies, or the purchase of all or part of the assets of a going business through negotiation.⁹

Cohen and Robbins, conversely, say a focus on earnings in a merger or acquisition is only likely when there is no public market for the shares involved.¹⁰

Dividends are normally given secondary importance. Nevertheless, in certain cases dividends can be the most

⁷David D. Folz and J. Fred Weston, "Looking Ahead in Evaluating Proposed Mergers," NAA Bulletin, XVII (April, 1962), 17-27.

⁸McCarthy, loc. cit.

⁹Chelcie C. Bosland, "Stock Valuation in Recent Mergers," Trusts and Estates, XCIV (August, 1955), 662-669.

¹⁰Jerome B. Cohen and Sidney M. Robbins, The Financial Manager: Basic Aspects of Financial Administration (New York, 1966), p. 824.

important factor. When stockholders of the acquiree company greatly value their present personal income from dividends, they may not be willing to accept a price that decreases their regular dividend stream.

In regard to book value, Bosland said:

Both in market sales of stock and negotiated transactions involving shares of stock or entire going concerns, little attention seems to be paid to equity assets in book values or appraisals. This is in line with the axiom that a property is worth what it will earn, not what it actually cost or what it would cost to reproduce today.¹¹

Both the study by McCarthy and a study by Walker and Kirkpatrick show very little correlation between relative book values and exchange ratios. The latter shows an average discrepancy of over one hundred per cent between book value ratios and exchange ratios.¹²

Nevertheless, the Arthur D. Little, Inc. study for the Financial Executive Research Foundation included the following remarks:

Book value is important, at least to many shareholders, as a measure of relative participation in the net worth of the company and for this reason, valid or not, becomes a factor in measuring the reasonableness of exchange of stock. Habitually, the pre-merger book value of a share is compared against the post-merger book value to measure dilution. While it would appear that increased per share earnings should be the true measure, a surprising number

¹¹ Loc. cit.

¹² J. B. Walker, Jr. and Neil Kirkpatrick, "Financing the Acquisition," published in AMA Management Report No. 75, Corporate Growth Through Merger and Acquisition (New York, 1963), p. 90.

of corporate managements are concerned with dilution and it has not been unusual to find merger plans shelved because of a per share decrease in book value of the combined two companies that would result.¹³

The comprehensive studies by Reilly, Dellenbarger and others seem to indicate that relative market value is the most important factor in determining exchange ratios. Of course, this does not mean that other factors are to be disregarded. An admonition by McCarthy not to accept any one variable exclusively certainly seems most appropriate.¹⁴ Weston and Brigham also state that a group of factors rather than any one single element determines the ratio of exchange.¹⁵

II. THEORETICAL ISSUES IN EXCHANGE RATIO DETERMINATION

On the basis of the previous discussion some preliminary decisions can be made on exchange ratios. Assume Vendee and Vendor (A) corporations have the characteristics shown in Table I. If Vendor (A) demanded a twenty per cent premium over market value, the Vendee Corporation would distribute .72 shares of common for each share of Vendor (A) common.

¹³Clarence I. Drayton, Jr., Craig Emerson, John D. Griswald, under the direction of G. Richard Young of Arthur D. Little, Inc., Mergers and Acquisitions: Planning and Action (New York, 1963), p. 81.

¹⁴McCarthy, op. cit., p. 95.

¹⁵Weston and Brigham, op. cit., pp. 673-683.

TABLE I

PER SHARE VALUES OF VENDEE AND VENDOR (A) CORPORATION

	Vendee	Vendor (A)
Market price	\$100	\$60
Earnings per share	\$ 5	\$ 5
Price/Earnings Ratio	20:1	12:1
Dividends per share	\$ 1	\$ 3
Book value per share	\$ 50	\$60
Shares outstanding	10,000	1,000

Because the seller had 1,000 shares outstanding prior to the merger, 720 shares will be received and the total, combined number outstanding subsequent to the merger is 10,720. Table II illustrates the expected results for the shareholders of Vendor (A) Corporation.

TABLE II

 PER SHARE DATA FOR VENDOR (A) CORPORATION
 IN TERMS OF EQUIVALENT VALUE RECEIVED
 FROM VENDEE CORPORATION

Market price	\$72.00
Earnings per share	\$ 3.60
Dividends per share	\$.72
Book value	\$36.00

In order to simplify matters, value received by the seller was measured in pre-merger terms. The seller corporation stockholders have increased the equivalent market value of their holdings. However, they now theoretically have less earnings, dividends and book value per share. If market value is all important, the shareholders will probably be pleased with the situation. However, if the shareholders also value the other three factors, they may be dissatisfied. The acquiring corporation appears to have benefited. The Vendee Corporation now has \$55,000 in earnings instead of \$50,000, with the total number of shares 10,720 instead of 10,000. Thus earnings per share have increased from \$5 a share to \$5.23. Provided the P/E ratio remains in the twenty range, the market value will also go up.

Earnings per share increased because the acquiring company had a higher P/E ratio. This invariably is the case unless a proportionately large premium over market price of the seller is paid by the purchaser. If the deal is consummated in terms of the market value of both seller's (no premium) and buyer's shares, immediate earnings per share must increase as a result of the merger. Conversely, if the acquiring company has a lower P/E ratio than the company acquired, earnings per share will be decreased unless a proportionately large discount from the market price of the sellers stock is paid by the purchaser. If the deal is consummated in terms of the market value of both seller's

(no discount) and buyer's shares, earnings per share must decrease as a result of the merger.

Many corporations are hesitant to discuss merger possibilities with other corporations which have higher P/E ratios. Furthermore, in many corporate finance texts the necessity of a relatively higher P/E ratio for the acquiring company is stipulated. Folz and Weston do an excellent job in attacking this line of thinking.¹⁶ They maintain that companies are too concerned with the short-term and the main reason one company has a higher P/E ratio than another is because of greater expected future growth. Thus, a company that dilutes immediate earnings of the acquiring company because it has a relatively higher P/E ratio may cause an accretion in future earnings because of its superior growth possibilities. In particular, Folz and Weston list five reasons why unsound combinations may be allowed or sound mergers prevented:

1. Failure to recognize the source of dilution (here used in the sense of a decline in earnings per share or in market price of the common stock).
2. Failure to recognize the difference between short-run and long-run effects on earnings per share and market price per share.

¹⁶Folz and Weston, op. cit., pp. 17-27. Mention of many aspects of earnings dilutions and accretion are also covered in Weston and Brigham, Managerial Finance, and Weston in Alberts and Segall, The Corporate Merger. However, when there are overlaps, the citation will be the Folz and Weston source.

3. Failure to recognize that unequal projected growth rates in earnings affect the comparison between initial dilution and future dilution.
4. Failure to recognize that immediate dilution may be considered as the alternative to 'starting from scratch' and building a new product through internal development.
5. Failure to give adequate recognition to marginal effects of the merger on future earnings.¹⁷

To clarify this argument an example is presented. Assume Vendee Corporation did not acquire Vendor (A), and is now looking at Vendee (B). The comparative data of the two corporations is presented in Table III.

TABLE III
PER SHARE VALUES OF VENDEE AND VENDOR (B) CORPORATION

	Vendee	Vendor (B)
Market price	\$100	\$150
Earning per share	\$ 5	\$ 5
Price/Earnings ratio	20:1	30:1
Dividends per share	\$ 1	\$.75
Book value per share	\$ 50	\$ 50
Shares outstanding	10,000	1,000

Because dividends and book value add nothing to the problem of earnings dilution or accretion in this particular

¹⁷Ibid., p. 17.

example, these considerations are ignored. Also, to simplify the analysis, no premium or discount is applied to the seller shares (only an unrealistically high discount could hinder this analysis.)

Thus, Vendee (B) shareholders will receive 1.5 shares of new Vendee common for every share they surrender, or a total of 1,500 shares. Some 11,150 shares of Vendee common are to be outstanding on this basis. These 11,500 shares represent total earnings of \$55,000; immediately after the merger, earnings per share in Vendee Corporation will be \$4.78. Thus, old shareholders of Vendee Corporation are to be diluted by \$.22 per share. The old Vendor (b) shareholders, however, will have 1.5 shares of Vendee Corporation stock for every old share they owned. Thus, they now hold claim to \$7.17 ($\4.78×1.5) in earnings on 1,000 old shares earning \$5. An alternate explanation is that 1,500 shares of unmerged Vendor (B) would be worth \$3.33 as compared to \$4.78 for the 1,500 shares in the merged corporation.¹⁸ Which company has made the better deal? As indicated by Folz and Weston, this depends on three factors: relative price-earnings ratios, relative size, and relative future rates of growth.¹⁹

¹⁸In either event there is an equal earnings gain of about \$2,174. A slight rounding difference exists.

¹⁹Ibid., p. 24.

Two of the three factors, relative price-earnings ratios and relative size have already been used to compute the initial dilution in earnings per share. The third factor, relative growth rates, must now be taken into consideration in order to determine whether dilution is to take place in the future. Because Vendor (B) had a much higher P/E ratio, this corporation's future earnings are probably expected to grow at a faster rate than those of Vendee Corporation (prior to the merger). In Table IV, a growth rate of twenty per cent is applied to the earnings of Vendor (B)

TABLE IV
TOTAL EARNINGS UNDER DIFFERENTIAL GROWTH RATES
FOR VENDEE AND VENDOR (B) CORPORATION

	Vendee (unmerged) 8% Growth	Vendor B (unmerged) 20% Growth	Vendee (merged with Vendee B)
Year 0	\$ 50,000	\$ 5,000	\$ 55,000
Year 1	54,000	6,000	60,000
Year 2	58,320	7,200	65,520
Year 3	62,986	8,640	71,446
Year 4	68,025	10,369	78,394
Year 5	72,787	12,445	85,230
Year 6	78,610	14,932	93,542
Year 7	84,899	17,918	102,817
Year 8	91,691	21,502	113,193
Year 9	99,026	25,802	124,828
Year 10	106,948	30,962	137,910

Corporation and eight per cent to the earnings of Vendee Corporation (prior to the merger). Any growth rate greater than eight per cent for Vendor (B) Corporation would make this illustration plausible. The relatively large rate was used to capsulize effects. To keep matters comparatively simple no synergy is assumed (the whole is not greater than the sum of the parts).

In order to derive earnings per share of the Vendee Corporation upon a merger (Table V), it is necessary to divide the total earnings figure by 11,150 shares. This can

TABLE V

EARNINGS PER SHARE UNDER DIFFERENTIAL GROWTH RATES
FOR VENDEE AND VENDOR (B) CORPORATION

	(1) Vendee (unmerged)	(2) Vendor B (unmerged)	(3) Vendor (merged with Vendee B)
Year 0	\$ 5.00	\$ 3.33	\$ 4.78
Year 1	5.40	4.00	5.22
Year 2	5.83	4.80	5.70
Year 3	6.29	5.76	6.21
Year 4	6.80	6.91	6.82
Year 5	7.28	8.30	7.41
Year 6	7.86	9.95	8.13
Year 7	8.49	11.95	8.94
Year 8	9.17	14.33	9.84
Year 9	9.90	17.20	10.85
Year 10	10.70	20.64	11.99

be compared with earnings per share for Vendee Corporation shareholders in the future if they hadn't merged. Also a comparison can be made with Vendor (B) Corporation's unmerged earnings per share (assuming the post merger 1,500 shares to keep matters comparable).

In order to determine whether dilution or accretion in earnings per share take place, Column one and Column two, respectively, are subtracted from Column three in Table V. These results are shown in Table VI.

TABLE VI
DILUTION OR ACCRETION IN EARNINGS PER SHARE FOR
VENDEE AND VENDOR (B) CORPORATION

	Vendee (unmerged)	Vendor (B) (unmerged)
Year 0	-\$.22	+\$1.45
Year 1	- .18	+ 1.22
Year 2	- .13	+ .90
Year 3	- .08	+ .45
Year 4	+ .02	- .09
Year 5	+ .13	- .88
Year 6	+ .27	- 1.82
Year 7	+ .45	- 3.01
Year 8	+ .67	- 4.49
Year 9	+ .95	- 6.25
Year 10	+ 1.29	- 8.65

Thus, Vendee does worse than it would have (if it hadn't merged) for the first three years. After that period, Vendee continues to do better for an unlimited period of time because of the merger. Cumulative dilution is wiped out in the seventh year. The seller's pattern is basically the opposite.

Of course, this analysis has been conducted for relative price/earnings per share of two to three, relative sizes of one to ten (measured in earnings) and relative growth rates of five to two. If any one of these three variables change, present and future earnings per share are affected.²⁰ For example, relative earnings per share and relative size can be held constant while varying relative growth rates, and dilution and accretion will take place at different points in time. The same can be said of holding relative size and growth rate constant and varying relative P/E ratios, or holding relative P/E ratios and relative growth rates constant and varying relative size. Folz and Weston demonstrate techniques for developing a range of possible curves in their NAA article.²¹

In a nonsynergistic merger, whatever one party gains in terms of relative claims to earnings subsequent to a merger,

²⁰Ibid., pp. 17-27.

²¹Ibid.

the other party loses.²² This is only true of total earnings and not earnings per share.²³ The basic data is shown in Table VII.

TABLE VII
TOTAL EARNINGS AND RELATIVE CLAIMS OF VENDEE AND
VENDOR (B) CORPORATION

	(1)	(2)	(3)	(4)
	Vendee (unmerged)	Vendor (B) (unmerged)	Old Vendee's Shareholders' Claim to Merged Vendee's Earnings (10 divided by 11.5, times total earnings).	Old Vendor (B)'s Shareholders' Claim to Merged Vendee's Earnings (1.5 divided by 11.5, times total earnings).
Year 0	\$ 50,000	\$ 5,000	\$ 47,826	\$ 7,174
Year 1	54,000	6,000	52,174	7,826
Year 2	58,320	7,200	56,973	8,457
Year 3	62,986	8,640	62,127	9,319
Year 4	68,025	10,369	68,169	10,225
Year 5	72,787	12,443	74,113	11,117
Year 6	78,610	14,932	81,341	12,201
Year 7	84,899	17,918	89,407	13,410
Year 8	91,691	21,502	98,429	14,764
Year 9	99,026	25,802	108,547	16,281
Year 10	106,948	30,962	119,922	17,988

²²Ibid., p. 19.

²³For earnings per share, the complicating factor of the relationship of total earnings to total shares exists.

In order to determine dilution and accretion to earnings for Vendee and Vendor (B), Column one is subtracted from Column three and Column four from Column two in Table VII. The results are presented in Table VIII. Thus, everything one company's gains in earnings, the other company loses.

TABLE VIII

DILUTION OR ACCRETION IN TOTAL EARNINGS FOR VENDEE
AND VENDOR (B) CORPORATION

	Vendee (unmerged)	Vendor (B) (unmerged)
Year 0	-\$ 2,174	+\$ 2,174
Year 1	- 1,826	+ 1,826
Year 2	- 1,257	+ 1,257
Year 3	- 709	+ 709
Year 4	+ 144	- 144
Year 5	+ 1,326	- 1,326
Year 6	+ 2,731	- 2,731
Year 7	+ 4,508	- 4,508
Year 8	+ 6,738	- 6,738
Year 9	+ 9,521	- 9,521
Year 10	+ 12,974	- 12,974

More will be said about future earnings per share, and the appropriate P/E ratios to be applied to these earnings in Chapter VI.

III. SUMMARY

The comprehensive studies of Reilly, Dellenbarger and others indicate the importance of equity values in determining the terms of exchange. Earnings, of course, are related to market values. Dividends and book value (although somewhat related to market value) assume importance only under special circumstances.

Although many firms consider only companies with lower P/E ratios for acquisition, this is often a mistake. Differential growth rates may indeed justify the size of the relative multipliers. A company should look for the best possible candidate and relate the candidate's P/E ratio to its growth prospects.

CHAPTER IV

FORMS OF CONSIDERATION EXCHANGED IN MERGERS AND ACQUISITIONS

The means of payment is a primary consideration in every combination. The plausibility of an entire combination plan may hinge on determining the appropriate consideration.¹ Furthermore, the means of payment is a variable in determining price. A larger sum will generally be paid when cash or debt securities, rather than stocks, are tendered because of the probably immediate tax liability to shareholders in the absorbed corporation. In Chapter VI, market reaction to various forms of consideration is covered.

The basic forms of consideration tendered are discussed in some detail. Common stocks, convertible preferred stocks, convertible debentures, and straight issues with warrants are examined in terms of their relationships to business combinations (rather than in a general framework). The stipulations and rules of the AICPA, SEC and IRS are integrated into the analysis. A special section is also devoted to the strengths and weaknesses of installment purchase and contingency payment plans. Although the majority of the

¹Charles A. Scharf, Techniques for Buying, Selling and Merging Businesses (New York, 1964), p. 54.

in and of itself deter a buyer from making an acquisition. Furthermore, at the particular time of the acquisition, the buyer may not wish to disclose to his competitors information required to be included in the registration statement. In addition, the filing of a registration statement may impose restrictions on the buyers conduct of his business, particularly where a buyer is actively engaged in such activities which may have a substantial effect upon his business.⁶

Of course, there are exemptions to the requirement for filing registration statements. The general provisions for exempted securities⁷ and exempted transactions⁸ under the Securities Act of 1933 are fairly common knowledge to the financial community. However, Rule 133 of 1951,⁹ dealing with mergers and acquisitions, is rather specialized. Although the following discussion of Rule 133 covers all forms of security offerings, it is particularly relevant to common stock.

Rule 133 was deemed necessary by the Securities and Exchange Commission to circumvent the normal interpretation of the term "sale" or "sell" under the 1933 act, which includes every attempt to offer or dispose of a security.¹⁰

⁶Scharf, op. cit., p. 68.

⁷Securities Act of 1933, Section 3.

⁸Ibid., Section 4 (especially 4 (1) dealing with private sales exemption).

⁹Ibid., Rule 133 adopted by the Securities and Exchange Commission, 1951.

¹⁰Ibid., Section 2 (3).

Under Rule 133, no sale is deemed to take place when a plan for merger or consolidation is conducted under the statutes of a state or there is a transfer of assets by the acquiree. In conjunction with these provisions there must be a proper vote by acquiree shareholders and the majority vote must bind the minority stockholders (the two conditions generally prevail in the above mentioned combinations). Even under a Rule 133 merger or acquisition, dissenting stockholders are allowed an appraisal. The first section of Rule 133, abbreviated for presentation, states:

. . . no 'sale,' 'offer,' or 'offer to sell' shall be deemed to be involved so far as the stockholders of a corporation are concerned where, pursuant to statutory provisions in the state of incorporation or provisions contained in the certificate of incorporation, there is submitted to the vote of such stockholders a plan or agreement for a statutory merger or consolidation or a proposal for the transfer of assets of such corporation to another person in consideration of the issuance of securities of such other person or voting stock of a corporation which is in control . . . of such other person, under such circumstances that the vote of a required favorable majority (1) will operate to authorize the proposed transaction so far as concerns the corporation where stockholders are voting . . . and (2) will bind all stockholders of such corporation except to the extent dissenting stockholders may be entitled . . . to receive the appraised or fair value of their holdings.¹¹

If securities are not registered, by virtue of application of Rule 133, the seller's shareholders are limited to the extent of public distribution of shares received.¹²

¹¹Rule 133, op. cit., Section (a).

¹²Ibid., Sections b, c, d, e, and f.

In addition to registration statement requirements for the acquirer, stock exchange listing regulations should be considered for additional or new securities. Furthermore, state laws dealing with additional security issuance should be examined.

II. CONVERTIBLE PREFERRED STOCK AS A MEANS OF PAYMENT

There has been a sharp rise in the use of convertible preferred stock in recent years. Weston and Brigham present a list of mergers from 1955 to 1960 in which analysis reveals convertible preferred stock was used 3.4 per cent of the time in major combinations.¹³ Mergers in which "big board" firms were absorbed between 1961 and 1965 show the following figures (by year) on the use of convertible preferred stock as a significant part of consideration paid.

1961	0.0%
1962	21.1%
1963	31.6%
1964	11.5%
1965	50.0% ¹⁴

¹³Weston and Brigham, op. cit., 668-671.

¹⁴"Mergers and Consolidations," New York Stock Exchange Fact Book (New York, 1962-1966). In all instances cited, other forms of consideration may have been used with convertible preferreds.

An examination of The Wall Street Journals for mid-1967 indicates that the percentage of major mergers in which convertible preferred stock was the key form of consideration tendered was in the area of seventy per cent. In smaller mergers other forms of tender still prevail.

There are many reasons for the rise in popularity of convertible preferred. As mentioned previously, many acquiring companies are hesitant to trade in a bearish market on the basis of their common stock. Furthermore, in 1965 and 1966 a cash shortage has been evident. Thus, acquiring companies that are unwilling to trade on market value and unable to trade cash have switched to convertible preferred stock.

Convertible preferreds also lessen dilution of earnings or accelerate accretion of earnings on a short-term basis. The advantage to the acquiree is that a floor is established on the basis of yield on preferred, but no ceiling is possible because of the conversion privilege (once parity is established with common stock, the convertible preferred moves in direct proportion to the common).

Convertible preferred stock also has other potential advantages. For example, it is a form of non-equity that may be tendered in full and the transaction still remain a "pooling." This is one of the points on which Arthur Wyatt and Robert Holsen were in agreement in the 1963 AICPA study. Wyatt commented:

. . . if convertible preferred were used, and if its other covenants indicated it was a mere substitute for common, one might be able to contend with some justification that the transaction was one of form and that pooling accounting would be appropriate.¹⁵

Holsen, clearly in agreement, said:

Accordingly, the issuance of preferred stock of one company for common stock of another should result in the business combination being treated as a purchase. One exception is when the preferred stock is convertible into common and the terms of its issuance indicate that it is basically only a substitute for common stock; use of such convertible preferred stock should allow the combination to be treated as a pooling of interests.¹⁶

The advantages of possible "pooling" treatment with convertible preferred stock may be quite important. Furthermore, when a voting privilege is attached, convertible preferred may qualify for "tax-free" treatment¹⁷ under reorganization provisions.¹⁸ The one danger in using any form of preferred stock is that it may be termed "306 Preferred." This designation refers to preferred received as a distribution on common and is taxed as ordinary income to the receiver.¹⁹

¹⁵Arthur R. Wyatt, A Critical Study of Accounting for Business Combinations, Accounting Research Study No. 5, for the American Institute of Certified Public Accountants (New York, 1963), p. 101.

¹⁶Ibid., p. 110 (contributed by Holsen).

¹⁷Internal Revenue Code of 1954, Section 354 (a).

¹⁸Ibid., Section 368 (a) (1) (B,C).

¹⁹Ibid., Section 306. This section as well as code provisions related to "Boot" are quite complicated tax problems and will not be examined.

The value of convertible preferred stock can be demonstrated by an example illustrating the positive effect of convertibles on earnings per share. The fact was brought out in Chapter III that short-term dilution in earnings may be justified if the acquired company has considerably greater earnings potential. In this case, however, dilution may be avoided with convertible preferred stock. Assume Company X and Company Y have common stock with the characteristics shown in Table IX.

Company (X) intends to acquire Company (Y), and Company (X) offers to pay Company (Y) its total market value plus twenty per cent or \$120,000 plus \$24,000 totaling \$144,000. This means 3,000 common shares (\$144,000 divided by \$48) are to be distributed to Company (Y). Earnings per share will decrease to \$3.69 (\$48,000 divided by 13,000 shares) for Company (X). This situation may be acceptable in the long run, assuming that Company (Y) has a faster potential growth rate and some synergy is involved in the merger. Nevertheless, this initial dilution may be mitigated or reversed through the issuance of convertible preferred stock.

If half the purchase price is paid in convertible preferred, initial earnings per share on common will be \$4.17²⁰ (\$48,000 divided by 11,500 shares). Of course, the situation

²⁰The theoretical earnings effect on Company (Y) is not analyzed to simplify matters. The nature of their conversion privilege complicates matters.

TABLE IX
PER SHARE VALUES PRIOR TO MERGER

	Company (X)	Company (Y)
Market price	\$48.00	\$60.00
Earnings per share	\$ 4.00	\$ 4.00
Price earnings ratio	12:1	15:1
Dividends per share	\$ 1.00	\$ 1.00
Book value per share	\$20.00	\$30.00
Shares Outstanding	10,000	2,000

is not quite this simple. The dividends on convertible preferred may be different from the dividends on common, and this would affect earnings per share. Furthermore, when and if conversion begins, earnings per share will be affected. Nevertheless, a conversion ratio with some "reach" will stall this eventuality. Moreover, conversion may well not take place unless there is a redemption provision and a call is made. The acquiree stockholders are willing to accept convertible preferred because the market value of their stock will move with common stock values once a direct parity is established.

In light of the many advantages of convertible preferred stock, it is not surprising that companies such as Litton Industries, ITT, Standard Oil Company of California, Newmont

Mining Corporation and Cities Service Company have been using this mode of financing since the early sixties²¹ and a large number of other companies have recently participated in the move.

A similar form of security is the convertible debenture. One further benefit of the convertible debenture is the tax advantage associated with interest payments. Also the convertible debenture, as compared to other forms of debt, is unusually subordinate and may contain few protective provisions. Despite some attractive features, the convertible debenture is not an adequate substitute for convertible preferred stock. Its position in regard to "tax-free" advantages and accounting treatment is potentially much less desirable than convertible preferred stock. Consequently convertible preferred is employed more often than convertible debentures.²² Both forms of security require registration statements with the SEC unless exempted.

It is often alleged that the use of convertible securities lowers the cost of raising equity funds. This allegation, however, is without basis. By assigning conversion rights, common stock may be more difficult to sell in the future. Secondly, conversion may never take place.

²¹John Thackray, "What's An Acquisition Worth," Dun's Review and Modern Industry, LXXXIII (March, 1964), 76.

²²Based on announcements in financial publications and material in The New York Stock Exchange Fact Books (New York, 1962-1966).

III. CASH AND OTHER MEANS OF PAYMENT

Cash is the most prevalent form of consideration offered when all size mergers are considered. For example, of the 1,893 mergers and acquisitions in 1965, some 1,268 (composed predominantly of medium and small size acquirees) involved cash to a substantial extent.²³

The general tightness of the money market in the 1966-1967 period has had somewhat of a negative effect on the use of cash. In periods of credit restraint, banks are less anxious to make funds available for take-overs. Insurance companies and other suppliers of funds are similarly influenced by a tight money market.²⁴ Mishkin mentioned certain overall restrictions on the use of cash for combinations in October, 1966.

Cash tender offers are similarly limited by the cash scarcity and by the current availability of favorable non-risk returns to cash. The need to conserve cash balances within corporations, and the low priority assigned to loans intended for acquisition by lending institutions, both restrict corporate acquisition for cash. High yielding money instruments reduce the near-term attractiveness of consolidation by narrowing the differential between risk-free returns and anticipated returns from merger and acquisition.²⁵

²³"Why Companies Seek Greener Fields," Business Week (March 12, 1966), 59.

²⁴"Roadblocks Slow the Urge to Merge," op. cit., p. 183.

²⁵Mishkin, op. cit., p. 1482.

A major drawback to the use of cash, regardless of credit conditions, is the nonavailability of "pooling" treatment. Where cash tendered is well in excess of book value acquired, the use of "purchase" accounting will be particularly disadvantageous. Of course, if the acquirer is five hundred or a thousand times larger than the acquiree, the net effect on future earnings is not significant because the acquired company will have only a slight impact on the acquiring company's financial statements.

Arthur Wyatt and Robert Holsen accepted the fact that a very small amount of cash in a predominately equity transfer may not violate the rules for "pooling." Of course, as the percentage of cash to equity increases, a presumption of "purchase" may be required. No predetermined percentage can be supported.²⁶ No doubt Holsen's level of acceptance is higher than Wyatt's.

A heavy reliance on cash will normally disallow "tax-free" treatment of a merger under a plan of reorganization.²⁷ Although this is generally considered a drawback because a tax obligation accrues to the acquiree shareholder at the time of consummation, certain advantages may exist for a

²⁶ Wyatt, op. cit., pp. 98-99 and Wyatt, p. 111 (contributed by Holsen).

²⁷ Code of 1954, Section 368 (a) (1) (A,B,C).

taxable combination.²⁸ A taxable merger or acquisition is accorded the normal tax treatment and assets are recorded on the buyer's books at a new tax value rather than the book value carried by the seller. Thus, a much larger base may be established from which to depreciate. Samuel Swartz does an excellent job of isolating the tax effect in his, "Merger Analysis as a Capital Budgeting Problem," article.²⁹ The relevant variables are stepped-up value³⁰ for a taxable merger (purchase price minus goodwill), book value for a "tax-free" merger, and the discount and tax rates of the acquirer company and the acquiree's shareholders. The present value of marginal gain from depreciating stepped-up value rather than book value in a taxable merger is compared with the present value of marginal gain from paying taxes in the future rather than the present by acquiree's shareholders. Stockholders generally demand a higher purchase price when cash is proffered.³¹

²⁸Of course a combination with "tax-free" characteristics may be treated as taxable. In this case, an option is available.

²⁹Samuel Swartz, "Merger Analysis as a Capital Budgeting Problem," published in William W. Alberts and Joel E. Segall, The Corporate Merger (Chicago, 1966), pp. 117-118.

³⁰For this analysis to be meaningful, the available new tax base must be greater than book value.

³¹This assumes capital appreciation in stock value between purchase and sale.

Of course, combinations in which cash is tendered do not normally require registration statements. Nevertheless, Scharf describes a circumstance in which potential problems might arise:

Since the Securities Act of 1933 concerns itself only with the sale of securities, the Securities Act of 1933 poses no problem in an acquisition of a going business if the buyer uses cash to acquire the seller. But, of course, if the buyer buys the stock of the seller for cash, with a view to distributing the stock, or subsequently, proposes to dispose of this stock, the buyer must take into account the provisions of the act, the regulations of the commission, and the whole body of opinion law.³²

Cash may be advantageous to the purchaser from a tax viewpoint and, in most cases, from a SEC registration viewpoint. Potential drawbacks exist in terms of accounting treatment. Furthermore, the seller's shareholders may demand a higher price because of the immediate tax liability.

Other forms of tender in combinations are straight preferred stock, bonds or debentures without convertible privileges and warrants issued in combination with other securities.

Straight voting preferred may qualify for "tax-free" combinations in much the same manner as convertible preferred stock, but it must be voting.

Of importance, however, is the generally restricted use of "pooling" treatment when straight preferred is used. Holsen says:

³²Scharf, op. cit., pp. 67-68.

. . . by its very nature, preferred stock is different from common stock in that the former generally has specific rights in liquidation and a prior position with respect to sharing in the earnings. By accepting preferred stock for the common stock previously held, the preferred shareholders have surrendered a portion of this ownership interests for a preferred position in the combined companies, and the status of the former shareholders in one company does not remain the same after they accept preferred stock of the combined company. Accordingly, the issuance of preferred stock of one company for common stock of another should result in the business combination being treated as a purchase.³³

The only acceptable form of preferred for "pooling" treatment is, of course, that which has conversion privileges (considered to be entirely different for many purposes).

The non-convertible debt obligation generally requires taxable treatment, "purchase" accounting and a registration statement unless specific exemptions are allowed. Most debt forms of payment in combinations are generally convertible issues.

Warrants may be offered as supplements to other forms of issuance³⁴ in mergers and acquisitions in order to make them more attractive. They normally do not change the general status of the security to which they are attached in regard to financial recording and other factors.

³³Wyatt, op. cit., p. 112 (contributed by Holsen).

³⁴Cash as well as straight issues often carry this widely fluctuating add-on.

IV. INSTALLMENT PURCHASES AND CONTINGENCY PAYMENT PLANS

Installment purchase plans involve payment at the time of purchase plus subsequent payments after the merger is consummated. The balance remaining after consummation may be covered by interest-bearing notes. In order to qualify for deferred recognition privileges by the Internal Revenue, the initial payment should not exceed thirty per cent of the purchase price,³⁵ but the remaining amount may be as desired.

The seller will generally demand a larger purchase price under an installment plan than under a straight purchase because of the time value of money. Nevertheless, if the tax advantages are sufficient and the payments after the first year reflect an interest rate not far out of line with the seller's cost of capital, the purchase price under installment or present payment plans may be reasonably close.

An advantage to the purchaser under an installment plan is that he may use the benefits of the combination to help make payments. The buyer, of course, is under obligation to tender payment even though the combination may prove to be uneconomical.

Under a contingency payment plan, the buyer is not under obligation to provide certain remuneration to the

³⁵Code of 1954, Section 453 covers many aspects of installment purchases.

seller unless pre-defined circumstances exist. A contingency payment plan generally becomes necessary when the buyer and seller cannot agree on the probable pattern of future earnings. The buyer may estimate the average earnings of the seller for the next ten years as five million dollars; while the seller maintains that a seven million dollar figure is realistic. Because of the widely divergent viewpoints, a combination may be impossible unless some form of reconciliation is designed. The buyer will generally make an immediate payment based on its appraisal of future earnings. However, the buyer will promise to make future payments if the seller's assessment of earnings materializes.

V. THE NATURE OF PROPERTY ACQUIRED

Whereas the buyer offers stocks, bonds, cash or warrants, the seller gives up either assets or stocks. Stock may be surrendered by individuals acting independently or by the corporation acting in behalf of stockholders (statutory mergers).³⁶

Under a purchase of assets, the acquirer is less amenable to the claims of unsatisfied creditors of the seller than under a statutory merger. However, if liens against

³⁶Prior and subsequent to this section the main concern of this study has been with statutory mergers rather than stock for stock exchanges that were not statutory mergers.

specific assets are outstanding, the purchaser may demand that the seller repay them from the purchase proceeds. The other alternative in handling liens is for the purchaser to assume direct responsibility for these liabilities and adjust the purchase price accordingly. If the purchaser does not assume proper responsibility, newly acquired assets may be subject to prior claims.

Where the purchase price for assets is paid in cash, the buyer is in no way liable for the general obligations of the seller. Nevertheless, the purchaser must be careful to avoid violating the Bulk Sales Acts of the various states. Thus, when inadequate warning is given potential creditors, the purchaser may be liable to the seller's creditors to the extent of assets purchased.³⁷

A purchase of assets for securities is more obligatory. The purchaser is automatically liable to the general creditors of the seller to the extent of assets purchased.³⁸ Of course, "tax-free" treatment is available when the purchase is for voting stock, and this may counterbalance the potentially larger liability.

³⁷Harry G. Guthmann and Herbert E. Dougall, Corporate Financial Policy, 4th ed. (Englewood Cliffs, New Jersey, 1962), p. 554. Also W. J. Grange, Corporation Law for Officers and Directors (New York, 1940), p. 593.

³⁸Ibid.

A purchase of stock, not based on a statutory merger or consolidation, does not relate to this problem. Of course, a statutory merger assumes a fusion of interests and all liabilities are assumed by the acquiring company.

The purchase of stock from individuals rather than a purchase of assets or involvement in a statutory merger also has advantages.³⁹ This less formal approach may be used as a stepping stone to other objectives, such as a statutory merger, forced sell of assets, or holding company control. Smaller companies often realize their vulnerability to take-overs by secretive means and closely watch any large transactions in their securities. A corporation that feels it may soon be taken over by an unknown buyer may strike up a more desired statutory relationship with another corporation.

In describing the mechanics of stock purchases, Weston and Brigham say:

. . . no formal agreement will be necessary with the company whose stock is being purchased. A firm, by buying in the open market, can simply begin to buy up the stock of the company in which it has an interest. The purchasing can proceed gradually, and perhaps without the knowledge of the company whose stock is being bought.⁴⁰

Of course, this is not to imply that most acquisitions are carried out by deceit and conquer. When two or more

³⁹For the company that is to be acquired, these certainly may not be considered advantages.

⁴⁰Weston and Brigham, op. cit., pp. 640-641.

companies eventually combine forces, the synergistic benefits may appear attractive to all parties. One company may welcome the purchase of its stock by another company.

Purchase of assets and purchase of stock from individuals rate equally well in regard to tax treatment in that both may qualify as a "tax-free" exchange. However, as pointed out in Chapter II, the means of payment by the acquiring corporation are more flexible under a purchase of assets than under a purchase of stock. Of course, in either of these two "tax-free" plans the consideration paid must be primarily voting stock. In taxable mergers, the acquiring corporation may tender whatever it prefers.

In regard to stockholders approval, a purchase of assets has stricter requirements. In virtually all states at least a majority of the stockholders of the corporations disposing of assets must approve the sale.⁴¹ The assent of the acquiring corporations shareholders is not required by most states. Their approval may, however, be necessitated by exchange listing agreements which direct corporations to submit proxies to shareholders when significant acquisitions are contemplated (this assumes that additional shares will be issued).⁴² Furthermore, certain state courts have ruled

⁴¹McCarthy, op. cit., p. 240.

⁴²Ibid. Also see New York Stock Exchange Company Manual.

that a "tax-free" stock-for-assets exchange is tantamount to a statutory merger and everyone's vote must be solicited and at least majority approval obtained.⁴³

Purchase of stock from individuals does not require a vote of either corporations' shareholders per se. Other voting requirements are also less likely but should not be excluded from consideration.⁴⁴

VI. SUMMARY

Although many forms of consideration may be proffered to the designated acquiree, a substantial shift in the mid 1960's has been made to convertible preferred stock. This particular security is quite adaptable to business combinations because of its flexibility in accounting and tax treatment and its market performance in both bullish and bearish markets. It has partially replaced common stock in many instances.

Although cash is probably the most prevalent form of tender payment, it has lost some of its popularity in 1966 and 1967 because of the tightened money market conditions.

⁴³Ibid., see Farris V. Glen Alden Corp., 393Pa.427, 143A.2d, 25 (1958).

⁴⁴Ibid., pp. 238-240.

CHAPTER V

EMPIRICAL STUDY OF MARKET PRICE MOVEMENTS

No previous study has actually focused on trading profits relating to mergers and acquisitions. The related works of Dewing, the National Industrial Conference Board, Livermore, Nelson, Booz-Allen and Hamilton, Wright, Kelly, and Merjos were briefly described in Chapter I, and no reiteration is deemed necessary at this point. In all other studies the time variable in market movements was not the key consideration.

I. METHODS OF SELECTING COMPANIES AND DETERMINING TIME PERIODS

Thirty-five mergers were randomly selected from the lists of "Mergers and Consolidations" for 1961 through 1965 in which the absorbed company was delisted from the New York Stock Exchange.¹ All acquiring companies were also on the New York Stock Exchange. For each acquirer and acquiree, a highly comparable nonmerging company was randomly selected and paired. Thus, data on price movements were accumulated for 140 companies.

¹New York Stock Exchange Fact Book, (New York, 1962-1966).

The mergers eligible for selection represented reasonably unanticipated take-overs. In order to isolate the "merger effect" this was a necessary criterion. Thus, slow continuous take-overs were not involved in this sample. The emphasis was on 100 per cent take-over at the time of consummation and little or no ownership prior to that time.

The selection of paired companies is an involved process. The technique is highly adaptable to merger studies and was first used by Kelly in his external vs. internal growth study in order to determine benchmarks against which to measure merging companies.² The procedure used in the present study was to pinpoint a small group of companies comparable to each acquirer and acquiree and then randomly select one from each group. This process was repeated seventy times. The main criteria for comparability were (1) similarity of industry and (2) similarity of quality. Standard and Poor's Industry Classifications and Stock Ratings served as a basis for applying both criteria.³ The Industry Classifications require no explanation but a comment on ratings seems necessary. The Standard and Poor's ratings represent the growth and stability of earnings and dividends over periods

²Eamon Michael Kelly, "The Profitability of Growth through Merger," (Ph.D. dissertation, Columbia University, 1965), abstract.

³Security Owner's Stock Guide by the Standard and Poor's Corporation (New York, 1960-1964).

of eight and fifteen years respectively. After statistical tests are run to determine strength on these two scores, ratings of A+ to C are assigned. The paired companies in this study thus have ratings reasonably comparable to their mates.⁴

Other criteria for eligibility in pairing were similarity in size and sales growth. These, however, were secondary factors compared to industry and rating similarities.

Both merger candidates and potentially paired companies eligible for selection were first checked for conflicting events. Thus if the merging companies were involved in other combinations at approximately the same time as the considered merger, the combination was not eligible for selection. Of course, exceptions could be made when the conflicting merger was somewhat less significant, which was invariably the case when New York Stock Exchange firms were involved. The companies eligible for pairing were also checked for participation in mergers. If they were involved in important combinations at the time when they were considered for inclusion, they were eliminated. Of course, unimportant mergers did not affect the sample. Most large companies are in the process of acquiring some small company at virtually any given moment. This did not present a major problem.

⁴Because ratings change annually, the December issue of Standard and Poor's prior to the year of each merger was the guideline.

Care was taken that companies considered for pairing were not involved in cancelled mergers during the period in question. Similarly, events far out of the range of normal activity were not allowed for any of the involved companies.

The thirty-five randomly selected mergers and the relevant pairings are presented in Appendix A. Each merger is listed by the name of the two companies involved and relevant dates are included. This data is followed by the industrial classification of the acquirer and paired company as well as the names of the companies and their ratings. The acquired and paired company are accorded the same treatment. Thus the first merger consummated on May 1, 1961, involved Midland Ross Corp. and Industrial Rayon Corp. The acquirer, classified in automobile parts, is paired with Sheller Manufacturing Company. Both of their ratings are given as B. The acquiree company, which is in the textile industry (mill products), is paired with Dan River Mills, Inc. Both companies rate B-. The 140 companies included in the study are listed in Appendix A.

In order to determine whether the market price movements of companies engaged in mergers differed significantly from that of the paired companies, data on price movements for all 140 companies was assembled. Furthermore, other relevant financial considerations such as exchange ratios, pre- and post-merger earnings per share, pre- and post-merger P/E ratios, consideration exchanged, "pooling" vs. "purchase"

data and other factors were compiled and are reported in the next chapter.

A problem existed in determining the time dimension in price data collection. Unsubstantiated comments in articles and books implied the importance of considering the pre-announcement period. For example, in his exchange rate determination study, Reilly used market price for an entire year prior to announcement, the most recent quarter before announcement and a month before announcement.⁵ In a similar study Weston and Brigham used market prices as far back as two quarters to determine exchange ratios.⁶ Likewise, Walker and Kirkpatrick went back three months⁷ and McCarthy two months⁸ in their studies of terms of exchange. Of course, none of these studies had anything to do with price movements per se. Each author was merely trying to pick a starting point at which the merger effect would not be felt.

For purposes of this study, a period of nine months prior to announcement to six months after approval was

⁵Frank K. Reilly, "What Determines the Ratio of Exchange in Corporate Mergers?" Financial Analysts Journal, XVIII (November-December, 1962), 47-50.

⁶J. Fred Weston and Eugene F. Brigham, Managerial Finance, 2nd ed. (New York, 1966).

⁷J. B. Walker and Neil Kirkpatrick, "Financing the Acquisition," published in AMA Management Report No. 75, Corporate Growth Through Merger and Acquisition (New York, 1963), p. 90.

⁸George D. McCarthy, Acquisitions and Mergers (New York, 1963), p. 74.

examined.⁹ Thus stock prices for the 140 companies were recorded for nine months prior to announcement, six months prior to announcement, three months prior to announcement, one month prior to announcement, at point of announcement, one month after announcement, two months after announcement, on the date of approval, one month after approval, three months after approval, and six months after approval. Price changes were then examined within various periods of time. Of course, for the acquirees and their paired companies no prices were recorded after merger approval.

A primary problem was to properly determine when the first announcement was made. This is the pivotal point in time and must be accurately determined. For purposes of this study The Wall Street Journal, The Commercial and Financial Chronicle, and a complete set of Announcements of Mergers and Acquisitions by the National Industrial Conference Board were used.

II. TECHNIQUES OF STATISTICAL ANALYSIS

After relevant dates were determined and the price figures were gathered, the price data was put on a comparable basis. Each subsequent stock price was divided by a previous price for the stock and put on an index with a base of 100.

⁹The approval date was used rather than the consummation date because it is more significant and usually closely coincides with the consummation date. The approval date is generally two months or more after announcement.

This is a method similar to that introduced by Keith B. Johnson in his study of stock splits.¹⁰ Thus if the price were $12 \frac{1}{8}$ at three months before announcement and 14 at approval, the index of change would be 114.3. A paired stock might have had a price movement of 84 to 83 and by assigning a base value of 100 to 84, 83 would be equivalent to 98.8. Thus the price movements of stocks in all price ranges may be directly compared. For example, in the pre-announcement period of one month from announcement to the time of announcement, the absolute price changes indicated in Table X took place for the acquirees and their paired companies. X_1 is the merging company (acquiree) and X_2 is the paired company.

Each absolute price change may be converted into relative price changes (indexes) as indicated in Column one and Column two of Table XI. Once again, X_1 is the merging company (acquiree) and X_2 is the paired company.

Although the extent of change may be viewed on comparative terms, a statistical meaning is desired. The question to be considered is whether the acquiree companies and the companies paired with the acquirees come from the same population. Column three and Column four of Table XI were provided in order to run a normal curve test of the significance of the difference between means. Because the companies

¹⁰Keith B. Johnson, "Analysis of the Permanent Price Change Associated with Common Stock Splits," (Ph.D. dissertation, Washington University, 1963), abstract.

TABLE X

ABSOLUTE PRICE CHANGES FOR THE PRE-ANNOUNCEMENT PERIOD OF
ONE MONTH BEFORE ANNOUNCEMENT TO ANNOUNCEMENT

	X ₁		X ₂	
Industrial Rayon-Dan River	19 1/8	19 5/8	13	14 7/8
Bridgeport Brass-Copper Ran.	22 1/8	25 1/8	13 3/8	13 3/4
Spenser Kellogg-Di Giorgio	19 1/2	20 5/8	18	17 5/8
Cream of Wheat-City Prod.	42 1/2	47 1/8	25 3/8	34 1/2
Philco Corp.-Emerson Radio	20 5/8	22 1/4	13 5/8	12 7/8
Firth Carpet-Congoleum N.	8	7 7/8	10 1/4	11 5/8
TXL Oil-Barber Oil	24 3/8	31 1/2	63 1/8	76 1/4
Truax-Traer-Island Creek	44 1/8	43 3/4	31 3/4	30 3/4
Parker Rust Proof-Hanshaw	26 7/8	30	22 3/4	22 3/8
American Chicle-Beech-Nut	51 7/8	65 1/8	30 1/2	33 3/8
Pitt. Met.-Continen. Cop.	17 7/8	22 1/2	6 1/8	5 3/4
Stix Baer and Ful.-Outlet	24 5/8	32 5/8	21	21
Tenn. Corp.-Internat. Min.	37 5/8	46 5/8	37 1/8	42 5/8
Friden-Pitney-Bowes	36 5/8	40 7/8	49 3/8	46 3/4
American Ag.-Amer. Pot.	28	41 1/4	27 1/4	28 3/4
Yale and Towne-Link Belt	26 3/8	29 3/4	49	49 3/8
Vir. Car.-Witco Chem.	59 1/4	75 1/2	39 1/8	37 7/8
Motor Wheel-Amer. Met. P.	21 1/4	23 1/8	17 7/8	19 1/8
Pendleton Tool-Thor Pow.	16 1/8	24 7/8	28 1/8	27
Dubois Chem.-Sun Chem.	18 7/8	20 1/8	9	8 7/8

TABLE X (continued)

	X_1		X_2	
Marlin Rock.-Kelsey Hay.	30 3/8	34 1/4	40 5/8	39 1/8
Bullock's-Mercantile S.	66 1/2	82 1/2	26 3/4	25 3/8
Sealright Os.-Fed. Pap.	22 7/8	29 3/8	33 3/4	33 5/8
Champlin Oil-Ashland Oil	38 1/2	41 1/2	38	37 7/8
Acme Steel-Copperweld S.	20	21 7/8	52	59 1/2
Aldens-United Mer.	32 1/2	33 1/8	20	20 3/8
Smith-Douglas-Pennsalt	50	64	40 7/8	44 1/4
Royal McBee-SCM	13 5/8	14 7/8	18 1/8	15 1/8
Bestwall Gypsum-Ruberoid	33 1/4	37 5/8	30 1/2	31 1/8
Frito-Lay-Duffy-Mott	39 1/2	40 3/4	27 1/4	28 3/8
Baldwin-Lima-Bueyrus Erie	16 3/8	18 3/8	41 3/8	41
Drackett-Wallace and T.	25 3/4	32 7/8	30 3/8	33 3/4
Pacific Cement-Alpha Port.	16 5/8	18	12 7/8	11 7/8
EKCO Prod.-King-Seeley	44 1/2	50 5/8	36 5/8	39 3/8
Towmotor-Koehring	26 1/4	36 1/4	28 1/4	29 5/8

TABLE XI

RELATIVE PRICE CHANGES (INDEXES) FOR THE PRE-ANNOUNCEMENT
PERIOD OF ONE MONTH BEFORE ANNOUNCEMENT TO ANNOUNCEMENT
WITH SUPPLEMENTAL INFORMATION ON DIFFERENCES

	Index X_1	Index X_2	$D=X_1-X_2$	D^2
Industrial Rayon-Dan River	102.9	114.4	-11.5	132.3
Bridgeport Brass-Copper Ran.	113.6	102.8	10.8	116.6
Spenser Kellog-Di Giorgio	106.0	98.0	8.0	64.0
Cream of Wheat-City Prod.	110.9	136.0	-25.1	630.0
Philco Corp.-Emerson Radio	107.6	94.1	13.5	182.2
Firth Carpet-Congoleum N.	98.4	113.9	-15.5	240.2
TXL Oil-Barber Oil	129.2	120.8	8.4	70.6
Truax-Traer-Island Creek	98.3	96.8	1.5	2.3
Parker Rust Proof-Hanshaw	111.6	98.4	13.2	174.2
American Chicle-Beech Nut	125.5	109.9	16.1	259.2
Pitt. Met.-Continen. Cop.	125.9	93.9	32.0	1024.0
Stix Baer and Ful.-Outlet	132.5	100.0	32.5	1056.3
Tenn. Corp.-Internat. Min.	123.9	114.8	9.1	82.8
Friden-Pitney-Bowes	111.6	94.7	16.9	285.6
American Ag.-Amer. Pot.	147.3	105.5	41.8	1747.2
Yale and Towne-Link Belt	112.8	100.8	12.0	144.0
Vir. Cor.-Whitco Chem.	127.4	96.8	30.6	936.4
Motor Wheel-Amer. Met. P.	108.8	107.0	1.8	3.2
Pendleton Tool-Thor Pow.	154.3	96.0	58.3	3398.9

TABLE XI (continued)

	Index X_1	Index X_2	$D=X_1-X_2$	D^2
Dubois Chem.-Sun Chem.	106.6	98.6	8.0	64.0
Marlin Rock.-Kelsey Hay.	112.8	96.3	16.5	272.3
Bullock's-Mercantile S.	124.0	94.9	29.1	846.8
Sealright Os.-Fed. Pop.	128.4	96.3	32.1	1030.4
Champlin Oil-Ashland Oil	107.8	97.7	10.1	102.0
Acme Steel-Copperweld S.	109.4	114.4	- 5.0	25.0
Aldens-United Mer.	101.9	101.9	0.0	0.0
Smith-Douglas-Pennsalt	128.0	108.3	19.7	388.1
Royal McBee-SCM	109.2	83.4	25.8	665.6
Bestwall Gypsum-Ruberoid	113.2	102.0	11.2	125.4
Frito-Lay-Duffy-Mott	103.2	104.1	- 0.0	.8
Baldwin-Lima-Bueyrus Erie	122.1	99.1	23.0	529.0
Drackett-Wallace and T.	127.7	111.1	16.6	275.6
Pacific Cement-Alpha Port.	108.3	92.2	16.1	259.2
EKCO Prod.-King-Seeley	113.8	107.6	5.2	27.0
Towmotor-Koehring	130.5	104.9	<u>25.6</u>	<u>655.4</u>
			487.5	15816.6

in the paired groups are not independent of the companies in the acquiree group, the standard error of the difference between two sample means must be found directly and cannot be assumed to be the square root of the sum of the variances of the mean. If independence were assumed where it did not exist, the null hypothesis would be unduly accepted or rejected.¹¹ This is because the square root of the sum of the variances of the mean would not take into consideration positive or negative correlation between the two sets of data.

The process for directly finding the standard error of the difference between two sample means was to first find D, the difference between each set of paired values. This is shown in Column three of Table XI. The values of D were then squared as shown in Column four of the same table.

To simplify matters the standard deviation of the difference between means is first determined and then divided by the square root of the sample size to find the standard error of the difference between means.

The standard deviation of the difference between means is equal to the square root of the sum of D square divided by the sample size minus the mean of D, squared. The

¹¹Frederick E. Croxton and Dudley J. Cowden, Applied General Statistics, 2nd ed., (Englewood Cliffs, New Jersey, 1955).

formula is $S_D = \sqrt{\frac{\sum D^2}{n} - \left(\frac{\sum D}{n}\right)^2}$. The standard error of the difference between means is equal to $\frac{S_D}{\sqrt{n}}$.

The average difference in means is, of course, equal to the sum of D divided by n and is referred to as $\bar{X}_D$. The null hypothesis was that $\bar{X}_D$ is the mean of a random sample from a population of differences having a mean of zero. Z then is $\equiv \frac{\bar{X}_D - 0}{S_{\bar{X}_D}}$. Throughout this study, the null hypothesis was tested at an .05 level of significance or in other words was accepted when Z fell within plus or minus 1.96 standard deviations of the difference between means. If Z exceeded this value in either direction, the null hypothesis was rejected and the means were assumed to come from separate populations. Of course, this test may be considered at a different level of significance or on a one-tail basis. Because of interest in movements in both directions, the two-tail test was preferred.

For the data presented in Table XI, depicting indexed price changes for the pre-announcement period of one month before announcement to announcement for acquirees, $\bar{X}_D$ is equal to +13.93, S_D is equal to 16.06, $S_{\bar{X}_D}$ is equal to 2.71 and Z approximates +5.14. The hypothesis that potential acquirees, when examined one month before announcement, come from the same population as paired companies may be rejected at a .000001 level of significance. Of course, there are

twenty-two other null hypotheses and most of these are rejected less convincingly or not at all.

The index numbers based on price changes for the other periods are contained in the Appendix B. The relevant time periods are as follows.

Pre-announcement

-9 months to -6 months
-6 months to -3 months
-3 months to -1 month
-1 month to announcement

Post-announcement

announcement to +1 month
+1 month to +2 months
+2 months to approval

Post-approval

approval to +1 month
+1 month to +3 months
+3 months to +6 months

Summary

announcement to approval
-3 months to approval
-3 months to approval +1
-3 months to approval +6

III. RESULTS OF THE TEST

The results of the tests of the significance of the difference between means are presented in Appendix C.

As demonstrated in Appendix C, the only span in time in which the acquirers did significantly better than the paired group was in the pre-announcement period of -9 months to -6 months. Here, the null hypothesis was rejected because of a Z value of +2.06. However, this show of strength was probably not linked to the merger. This indicates that

companies often have a positive market movement before they enter into merger negotiations (this restrictively refers to acquiring companies). For the pre-announcement period of -6 months to -3 months, there was no apparent difference between the two groups with Z being $-.87$.

In the pre-announcement period of -3 months to -1 month, the Z value equaled $+1.70$. Thus, the null hypothesis was accepted. If the test were one-tail or a $.09$ level of significance were used, a significant difference could be assumed. It is in this period of time that the acquiring companies were probably beginning to deal seriously with the acquirees. Although this fact cannot be ascertained from significant price movements of the acquiring companies in terms of the two-tail, $.05$ level of significance test, data to be discussed for the acquirees strongly support this conclusion.

The two-tail, $.05$ level of significance test appears to be discriminating and was used throughout. Thus, all further hypotheses about the acquiring company being statistically different cannot be accepted. This is true for the pre-announcement period of -1 month to announcement, the post-announcement periods of announcement to +1 month, -1 month to +2 months and +2 months to approval, and the post-approval periods of approval to +1 months, +1 month to +3 months, and +3 months to +6 months. This also holds true for the summary periods of announcement to approval, -3 months to

approval, -3 months to approval +1 month, and -3 months to approval +6 months (Appendix C).

These results are quite tenable. Anna Merjos, in her study of thirty companies one month prior to announcement to one month after announcement, said, "with few exceptions the stock of the company to be acquired did better than that of the acquiring company."¹² Of course, Miss Merjos was primarily interested in subsequent broken mergers and her one month period was not a comprehensive measurement of all price changes associated with the mergers. The study was of a descriptive nature.

Although Kelly implied that P/E ratios of the acquiring company may rise over a period of time after merger, no such conclusion is reached in regard to market prices.¹³ Of course Kelly was examining prices over a longer period of time.

Thus from one viewpoint much shorter than this study and one viewpoint much longer, the results compiled are certainly not untenable. They trace a time pattern from nine months before merger to six months after merger and demonstrate that acquiring companies usually appear strong in pre-announcement period -9 months to -6 months, begin

¹²Anna Merjos, "Broken Mergers: A Security Analyst Adds up the Gains and Losses," Barron's, XXXVI (March 21, 1966), 5.

¹³Kelly, loc. cit.

looking for candidates in period -6 months to -3 months, and reach agreements in time span -3 months to -1 month (the latter is based on acquiree information).

The results for the acquiree companies were substantially different. In the period of pre-announcement -9 months to -6 months, the Z value was computed as $+0.49$ and the hypothesis of no difference in means was clearly accepted. In pre-announcement period -6 months to -3 months, a Z value of -2.10 indicates a rejection of the no difference hypothesis in favor of better price movement for companies that were not acquired. This would imply that acquirers were looking for companies whose stock was not moving quite as well as similar companies. Because a premium is usually paid over market value, inflated market values were generally avoided. In the period of pre-announcement -3 months to -1 month, apparently the acquirees were negotiating sales and the news leaked out. The Z value now computed as $+2.54$, and the clearly superior market performance of companies to be acquired was evident. As previously mentioned in the pre-announcement period of -1 month to announcement, a difference of means may be presumed at a $.000001$ level of significance (Z is $+5.14$).

After the announcement, the movement upward continues with post-announcement Z values of $+2.02$ for the announcement to +1 month period, and $+2.05$ for the +1 month to +2 months' period. For the post-announcement period of +2 months to

approval, the Z value is +1.83 and the null hypothesis can only be rejected at a .08 level of significance or on the basis of a one-tail test. The summary periods for the acquirees showed undisputed evidence of difference in means on the upward side. In the summary period of announcement to approval the Z value equaled +4.48. For the summary period of -3 months to approval the Z value was +6.62.

Thus, some positive assertions can be made about the market performances of acquiree companies. This is in accord with the cancelled merger study of Merjos, in which Miss Merjos descriptively showed the very strong movement of acquiree companies prior to the announcement of merger.¹⁴ The differences between this study and Merjos' study have already been pointed out.

Thus while significant differences in means can not be accepted for acquiring companies except at rather high levels of significance, the acquiree companies did perform quite differently in almost all cases. An investor may do well to put his money in a likely acquiree rather than an acquirer once he has reason to believe an announcement and merger may be forthcoming. The real period of prosperity was prior to announcement for the acquiree, especially in the month before announcement, but reasonably good performance continued after the announcement.

¹⁴Merjos, op. cit., pp. 5, 17.

Of course if the merger were cancelled during any of these periods in time, the expected results could well be the reverse. Further consideration of this point is made in Chapter VI.

IV. METHODS OF IDENTIFYING MERGER CANDIDATES

Naturally, there is a problem in identifying merger candidates in the pre-announcement period. This factor makes investing in mergers a difficult process. Nevertheless some advance news is available in various forms. For example, Financial World publishes a list of "take-over" candidates at irregular intervals of time. The firms suggested by Financial World represent general candidates with whom no merger negotiations have been initiated. Thus, the merger impact on market prices has not taken effect. Actual mergers materialize about forty per cent of the time within a reasonable time period. Business Week and The Magazine of Wall Street also suggest merger possibilities on an irregular basis.

The "News of Business Finance" in The Commercial and Financial Chronicle and the "Business and Finance" section of The Wall Street Journal also contain some indications of companies which might be absorbed. Special trade journals such as Electric News, Chemical Week and National Petroleum News are other sources of information.

Firms in the financial community issue unsubstantiated reports about negotiation procedures through their information

services. Also, the investor may be able to anticipate certain take-overs through knowledge of industry patterns. For example, many oil companies absorbed fertilizer producers in the early and mid-sixties. Virtually every company in the fertilizer industry was a candidate for merger.

Of course, the best source of news is from associates or employees of the involved companies. Although this information may only be available to the investor in limited instances, the opportunities for profitable investment may be good.

If the investor has several take-over candidates under observation, he may appropriate his funds among several possibilities and feel reasonably certain some developments will take place. This policy also helps to mitigate the effects of any subsequent cancellations.

V. SUMMARY

Through a process of testing differences of means, evidence was developed which indicated that acquirer companies do not perform differently from similar companies in their industry. Conversely, acquiree companies perform quite differently from their control group when the merger effect takes hold.

Of particular interest was the market movement of the acquirer companies in the pre-announcement period of -9 months to -6 months. Many of these companies outperformed

their competitors and their bullish operations encouraged them to begin looking for merger candidates in the pre-announcement period of -6 months to -3 months. During this period the means of the acquiring companies and the paired group were not significantly different, nor can any difference be established for the remaining period of study at a .05 level of significance.

The acquiree companies showed no significant difference in means from the paired group in the pre-announcement period of -9 months to -6 months. Their performance differed in the following period and was of an inferior nature. Negotiations definitely began in the pre-announcement period of -3 months to -1 month, and rumors rapidly circulated. In the period of -1 month before announcement to announcement, the acquiree companies made their big move and their positive performance continued almost to approval.

CHAPTER VI

CONTINUATION OF THE EMPIRICAL STUDY - CHARACTERISTICS OF THE MERGING COMPANIES

Many of the factors discussed in the first five chapters such as "purchase" vs. "pooling" recording, exchange ratio determination, and market movements are reexamined in this chapter. The purpose of this study is to pinpoint significant relationships regarding theory and empirical evidence.

I. TECHNIQUES OF ANALYSIS

For the thirty-five mergers included in Chapter V, sixteen columns of relevant data are presented in Appendix D. The mergers are listed by number, and subsequent reference to the mergers is by number. A brief explanation of some of the column titles is necessary.

In column one, the index of price change indicates the market movements for the acquirers and acquirees as well as the paired companies, designated as "other" companies. Data on the Dow Jones Industrial Average (DJIA) is also presented. In column three, the market value of consideration paid represents the value of an acquired share¹ multiplied by the exchange ratio. All data represents values three months

¹Common and/or preferred.

prior to announcement (unless exceptions are indicated). In columns five through eight, the exchange ratios were based on the value of market consideration, dividends or earnings of the acquirer exchanged for one common share of the acquiree. For example, if the acquirer had a market value of 100 and the acquiree a value of 50 and the acquirer gave the acquiree $3/5$ ths of a share, the ratio of exchange in terms of market value would be 60 divided by 50 or 1.12. Also if earnings were \$5 for the acquirer and \$3 for the acquiree, there would be no earnings premium or discount.

In column nine, the relative size of P/E ratios represents prices three months before announcement divided by earnings per share for the latest complete year before merger.

In column eleven, the acquirer's post-merger P/E ratio (representing the market value six months after approval divided by the earnings per share of the year of merger) was divided by the acquirer's pre-merger P/E ratio. Columns twelve through sixteen require no further explanation.

One possible problem was the frequent use of convertible preferred stock in developing ratios. Market values received through convertible preferred stock and common stock were not differentiated. Nevertheless, this practice was essential to the development of meaningful ratios, and is frequently used in studies of this nature.

II. THE INTEGRATION OF EMPIRICAL DATA AND THEORY

The price change indexes presented in column one indicate the significant market movements for acquiree companies. Supplemental material on the Dow Jones Industrial Average strengthens the analysis.

The terms of trade (column two) represent the consideration paid for each share of acquiree common stock. The trend to convertible preferred in the mid-sixties was definitely reflected. Also, the cumulative privilege generally accompanied conversion rights.

Convertible preferred was particularly applicable when a large premium was involved. In two-thirds of the cases in which this method of payment was used, the market premium was thirty per cent or larger (column five). As expected, no immediate dilution in earnings per share was evident in the related financial statements. The Cities Service Co.-Tennessee Corp., Continental Oil Co.-American Agricultural Chemical Co., Eaton Manufacturing Co.-Yale and Towne Manufacturing Co., Thompson Ramo Woolridge-Marlin Rockwell Corp., Gamble Skogmo, Inc.-Aldens, Inc., Armour and Company-Baldwin-Lima-Hamilton Corp., Lone Star Cement Corp.-Pacific Cement and Aggregates, Inc., and American Home Products Corp.-EKCO Products Co. combinations were particularly good examples of high premium convertible preferred stock mergers.

Column three and column four are supplements to column five. The exchange ratios in terms of market value (column five) indicated an average premium of approximately twenty-five per cent. This was in accord with the results of McCarthy, Graham, and Weston and Brigham, discussed in Chapter II. There were six mergers with market value premiums in excess of fifty per cent and one with a premium of over one hundred per cent. These results represented less extreme values than that indicated for earnings and dividends exchange ratios.

The extreme cases, in which market value premiums of over fifty per cent or discounts took place, are analyzed for cause.

In merger number two between National Distillers Chemical Corp. and Bridgeport Brass Co. a fifty-eight per cent market value premium was paid. The companies may have been trading on the basis of dividends, as the terms of trade indicated a 1.16 exchange on this basis. Furthermore, National Distillers' P/E ratio grew twenty-one per cent in the year after merger. Perhaps National Distillers was willing to pay a large premium in anticipation of favorable market reaction.

In merger number five between Ford Motor Co. and Philco Corp., a seventeen per cent discount in market value was accepted by the acquiree. This was probably due to the unrealistic 51.1 P/E ratio of Philco, approximately five times

larger than Ford's. The 51.1 P/E ratio was based more on current low earnings than optimistic projections for Philco.

In the merger between Mohasco Industries, Inc. and Firth Carpet Co., listed as merger number six, the seven per cent market discount can be traced to the no dividends policy and negative earnings of Firth Carpet Co.

The seventh merger between Texaco, Inc. and TXL Oil Company had many characteristics indicating a market discount was appropriate, yet there was a fifty-two per cent premium. This premium can probably be traced to the possibility of long-term growth in the oil industry due to vertical integration. TXL Oil Co. is in Crude Oil and Texaco, of course, is integrated.

Dividends appeared to be the most important factor in mergers ten and twelve. Merger ten, between Warner-Lambert Pharmaceuticals Co. and American Chicle Co., indicated a fourteen per cent market discount. The companies may have been more interested in a dividends parity (1.01) than market value equality. The seventy-eight per cent premium in merger twelve between Associated Dry Goods Corp. and Stix Baer and Fuller Co. also allowed for the preservation of dividend payment terms (the ratio was 1.03).

The premium of 137 per cent in merger fifteen between Continental Oil Co. and American Agricultural Chemical Co. was similar to the 125 per cent premium reported by McCarthy in the Aluminum Co. of America-Rome Cable Corp. merger of

March, 1959.² The acquirer apparently saw large benefits in the combination, while the acquiree was hesitant to proceed at almost any price and had to be greatly coaxed. The fifty per cent higher P/E ratio of the acquirer may have also made a psychological difference, though not necessarily a rational one.

The Ingersoll Rand Co.-Pendleton Tool Industries, Inc. combination, numbered nineteen, resulted in a twenty-four per cent market exchange rate discount for Pendleton Tool. Pendleton was in a position of market disfavor and could not command a better price.

In merger twenty-five between Interlake Iron Corp. and Acme Steel Co. the market terms called for a one per cent discount. A higher price was not offered because the agreed upon terms already allowed for a forty per cent dividends premium and a seventeen per cent earnings premium.

Frito-Lay, Inc. accepted a five per cent market value trading discount in their merger with Pepsi Cola, combination number thirty. Under these terms Frito-Lay managed to receive premiums in all other categories.

In the last two mergers, P/E ratios appeared to be important. In merger number thirty-four between American Home Products Corp. and EKCO Products Co., the acquirer had

²George D. McCarthy, Acquisitions and Mergers (New York, 1963), p. 101.

a seventy per cent larger P/E ratio and this probably led to a fifty per cent market premium. In merger number thirty-five, the Caterpillar Tractor-Towmotor Corp. combination, a fifty-two per cent market premium was paid. This may be explained by the ninety per cent larger P/E ratio for Caterpillar Tractor and the necessity of a large market premium to equalize earnings and dividends.

In allowing large premiums because of P/E ratio differentials, the acquirer makes a mistake if, in fact, the difference in ratios is well founded. Many of the companies that received large premiums had substantial upward movements in equity values. A large premium for the acquiree was often an indication of good investment possibilities.

Market value paid is greater than book value surrendered (column six) in many instances and generally by a very substantial margin. As explained in Chapter II, the method of recording ("pooling" or "purchasing") can be of importance in determining earnings per share and market value.

The dividend exchange ratios (column seven) show less of a pattern than market value ratios to coincide with the terms of exchange. This is in accord with the other studies presented in Chapter III. For example, the ratio of exchange could be computed in twenty-nine cases (in six mergers the acquiree did not pay dividends) and in eight of these cases the premium or discount exceeded fifty per cent. Furthermore, in three out of the eight the premium was over one hundred

per cent. Positive dividend terms encourage investment in the acquirees and upward market value movements were in evidence.

The earnings per share exchange ratios (column eight) were computed in twenty cases (in the other fifteen instances negative earnings, preferred stock, or cash complicated the analysis). In seven of these cases, the premium or discount exceeded fifty per cent. In three out of the seven, the premium was in excess of two hundred per cent. These results slightly contradict the findings of Reilly, described in Chapter III, in which he implied earnings more closely paralleled the exchange rate than dividends.

The ratio of earnings per share exchanged was important to acquirers when a large premium was paid. In every merger in which the acquiree was twenty per cent or more of the acquirer in terms of size, a large premium in earnings exchanged was simply not indicated (the largest being seventeen per cent in the Interlake Iron Corp.-Acme Steel Corp. merger).

The P/E ratios of the combining companies were measured in column nine. In nineteen cases the acquirer had a higher ratio, in ten cases the acquiree excelled, in four instances both parties had the same P/E ratios and in two examples the acquiree had negative earnings. Nevertheless, large market value premiums generally enabled the acquiree company to do better than the acquirer in terms of earnings per share

exchanged. The acquiring companies may have relied on optimism about future performance (and hopes for greater post-merger P/E ratios) in rationalizing a trade-off in earnings.

The acquiring companies post-merger earnings per share, on the average, exceeded the pre-merger figure by 11.9 per cent (column ten). Of course, this figure represented a measure of change over a year's period of time. Thus, the merger factor was combined with other elements. Earnings per share on the Dow Jones Industrial Average and on Moody's Industrial compilation, during the 1961 to 1965 period, have grown by thirteen per cent per year (this is the mean of the two indexes). Thus some evidence exists that a company in the first year after merger may not increase its earnings as much as the normal amount. This result may be traced to the market value and earnings per share premiums that are often generously included in the exchange ratios. Most of the previously mentioned studies adhere to this viewpoint³ (although some of their observations were over a different period of time).

Post-merger P/E ratios (column eleven), increased by three per cent on the average. In the indexes there was an average decrease of about seven-tenths per cent for the period in question. Thus, some evidence exists that merging

³Dewing, Kelly and the National Industrial Conference Board. The NICB reports speak more of neutrality. Livermore conclusions are to the contrary.

companies had slightly better P/E positions than the standard. This conclusion is supported by the Kelly study.⁴

Thus, for the absorbing companies, earnings may increase less than the normal amount while P/E ratios improve. Naturally there are many exceptions to this rule, depending on the circumstances of each merger.

Even though earnings per share may not perform well on the average for the first year or even some years thereafter, some shrewd companies take full benefit of differential growth rates and synergy. These are the ones that merge time and time again (Litton, Georgia Pacific, and Ling-Temco-Vought for example).

The relative size factor (column twelve) was discussed under terms of exchange. Where the acquiree was a large percentage of the acquirer, the earnings per share premium was held in check. This is often accomplished through issuing convertible preferred stock.

The relative Standard and Poor ratings (column thirteen) of the acquirer and acquiree provided some significant information. In twenty-seven mergers the acquirers had higher ratings, in five they were the same, and in three instances the acquirees ranked higher. Thus, there was ample evidence that the acquirers were generally superior companies with regard to earnings and dividends performance.

⁴Eamon Michael Kelly, "The Profitability of Growth through Mergers" (Ph.D. dissertation, Columbia University, 1965).

Every merger was checked for the possibility of stockholder dissent (column fourteen). While the value of issues moved briefly downward in response to this news, there was no lasting effect. The threats of anti-trust action were only of a comparatively minor nature and were not presented.

This does not imply, however, that a cancelled merger is unimportant. Because this study deals only with consummated mergers, no primary evidence is presented on broken mergers. The Merjos investigation of thirty broken mergers is the best work in this area.⁵ Her findings are briefly presented. When previously announced mergers are deemed to be untenable, the value of issues (with emphasis on the acquiree) generally go down as much as they went up in anticipation of the coming events. Merjos graphically describes some of the effects.

Word that the marriage plan was off had the expected impact in about two-thirds of the cases under study, the shares sold off, in some cases dramatically. On the day its merger plans with Bobbi Brooks were dropped, Rosenau Brothers slipped a quick 10 per cent versus a fractional decline for the market. Carpenter slumped 20.6 per cent in a virtually unchanged market. Between the day its merger with Aurora Plastics was proposed and the day the plans were dropped, AMT Corp. fell 18.2 per cent; next day it gave up another 16.7 per cent. Allyn and Bacon dropped 20.7 per cent when its plans for a combo with CBS fell through.⁶

⁵Anna Merjos, "Broken Mergers: A Security Analyst Adds up the Gains and Losses," Barron's, XXXVI (March 21, 1966), 5, 17.

⁶Ibid., p. 5.

Many investors buy securities at the midway point of the upward climb and then suffer the full force of decline on a cancelled merger. Investors should be apprehensive of investing in proposed mergers when there is strong evidence of exchange rate problems, anti-trust action, or bearish market movements. The merger plan may be broken prior to public announcement or after announcement, but before approval.

The significance of "purchase" vs. "pooling" accounting (column fifteen) was described in Chapter II. If market value tendered is in excess of book value traded, it is advantageous to record the transaction as a "pooling of interests."

An attempt was made to determine the method of recording for the thirty-five mergers under consideration. The financial services as well as proxy statements and listing applications were used to ascertain whether "pooling of interests" or "purchase" accounting was used. In many financial statements, exact indications were not given. Nevertheless, twenty-seven recordings were clearly "pooling." Of these twenty-seven, twenty-four represented circumstances in which market value was larger than book value. The mergers in which market value exceeded book value by a wide margin generally required the use of "pooling" accounting. One "purchase" was clearly determined.

Evidence to measure the performance of merging and non-merging companies in certain types of markets are presented in column sixteen. Acquiree companies, for the most part, do better in any type market. Acquiring companies do not do significantly better regardless of market conditions. No depression conditions, of course, existed in the period under study.

III. SUMMARY

Some theoretical propositions were reexamined in connection with the empirical data developed in Chapters V and VI.

The ratio analysis indicated that acquiree companies receiving substantial premiums had very strong upward price movements. Market price and dividend premiums appeared to be of primary importance.

The acquirers generally avoided undue set-backs in earnings per share through the issuance of convertible preferred stock. Nevertheless, post-merger earnings per share were slightly down. Of course, there was the reconciling factor of higher P/E ratios.

The danger of investing in potentially broken mergers was discussed in light of the findings of the Merjos study. In response to cancellation, a stock may go down in value as much as it increased in anticipation of merger.

CHAPTER VII

SUMMARY AND CONCLUSIONS

This study has examined the major elements pertaining to the relationship of equity values and mergers. In the first chapter historical material was presented, and the scope of the study was outlined. The next three chapters dealt with financial considerations germane to the study of equity value changes in business combinations, such as financial recording factors, exchange ratio determination, and forms of consideration transferred. Chapter V presented a comprehensive study of price changes in response to the merger stimulus at various points in time and in Chapter VI theoretical material and empirical evidence were integrated. The following observations and conclusions were reached in each chapter.

The method of financial recording can have an important impact on earnings per share and consequently market value for the acquiring company (Chapter II). When market price exceeds book value, "pooling of interests" recording is desirable because the acquired company will be transferred to the acquiree's books at book value. Thus, only the dollar amount of book value will be amortized against subsequent earnings. If the substantially less desirable "purchase" recording were used and the assets were transferred at cost

(generally market value of consideration paid), a much larger amortization against earnings would be necessary. Of course, if book value exceeds the value of consideration paid, the relative desirability of the alternate methods of financial recording are reversed.

Although the AICPA has continually attempted to restrict "pooling" recording to a true fusion of interests, more of the boundaries have been broadened to encompass diverse forms of combinations. The desire for "pooling" may be traced to the relatively frequent occurrence of large premiums in terms of market value paid for book value surrendered.

Valuation and exchange ratio theory were considered in Chapter III. Market price appreciation is often related to the premium or discount stipulated in the terms of exchange. Although relative market value, earnings and book value may carry some weight in determining exchange ratios, market value of consideration exchanged is likely to be the most important variable. The average premium in market value paid is in the twenty per cent range.

An insight into the importance of relative P/E ratios was also presented in Chapter III. The theory that it is generally desirable for the acquiring company to have a higher P/E ratio than the acquired company was reevaluated. According to Folz and Weston differences in P/E ratios may represent differential growth rates and thus be logically justified. One company (the acquiree) may be rated higher

by the market than another (the acquirer) because there is evidence of greater potential growth. An acquiring company should not avoid such a situation, nor should the investor.

The various forms of consideration tendered were considered in Chapter IV. The desirability of an investment may depend on the nature of the consideration transferred. If the acquiree represents a large percentage of the acquirer and a large premium in terms of earnings per share is paid, convertible preferred stock may be used as a means of lessening the immediate impact on earnings per share and perhaps market value.

In determining the proper mode of exchange, many factors must be evaluated. The acquirer and acquiree shareholders must consider the regulations and advice of the American Institute of Certified Public Accountants, the New York Stock Exchange, the Securities and Exchange Commission and the Internal Revenue Service.

Convertible preferred stock with voting privileges appears to satisfy the greatest number of needs in take-overs. Cash lost some of its popularity in 1966 and 1967 due to the tight money market (as well as tax and accounting considerations), but it is still used to a large extent in smaller mergers. Naturally common stock is still exchanged in a wide variety of situations.

Key issues about the timing of market value changes were considered in Chapter V. Thirty-five mergers were randomly

selected and the merging companies were paired with similar firms in their industry. The tests for the significance of the difference in means indicated that companies considered for acquisition behave differently from similarly operated concerns.

In the period of 3 months before announcement to one month before announcement the null hypothesis of no difference between the acquirees and the paired companies may be rejected to an .05 level of significance. The Z value was +2.54 and this clearly falls outside of the two-tail acceptance range of plus or minus 1.96. This is the period in which the effect of the merger becomes significant. The positive movement is even more evident in the period of one month before announcement to announcement. Z equaled +5.14 and the hypothesis of no difference may be rejected at a .000001 level of significance. The Z values for announcement to +1 month, +1 month to +2 months and +2 months to approval were +2.02, +2.05, and +1.83 respectively. For the continuous period of announcement to approval the Z factor was +4.48, and for the entire time span of 3 months before announcement to approval, Z equaled +6.62. Before the merger effect takes hold the potential acquirees move from a posture of no identity in pre-announcement period -9 months to -6 months ($Z = +.49$) to one of potential candidacy for negotiation in the time span of -6 months to -3 months before announcement ($Z = -2.10$). It appears that acquiring

companies like to consider firms with weak market movements for possible negotiations.

The merger effect was not statistically significant for the acquirers. The Z value never exceeded 1.96 in either direction or even 1.64 (if the one-tail test were stipulated) in the period of 3 months before announcement to 6 months after merger. In the pre-announcement period of -9 months to -6 months the acquirers did show positive movement with a Z factor of +2.06. However, this is attributed to the prosperity that is generally necessary to encourage companies to think about future acquisitions. In the pre-announcement period of -6 months to -3 months the Z value was non-significant and this indicates a period of indefinite action.

Thus, acquirers have a non-related show of strength in the pre-announcement period of -9 months to -6 months, while acquirees show no significant pattern. In the pre-announcement period of -6 months to -3 months the potential acquirees have a significant loss in market value (making them attractive partners for merging), and the acquirers remain constant. In the pre-announcement period of -3 months to -1 month, the merger effect takes hold. It changes the acquirees significantly, especially before announcement but even after announcement, and leaves the acquirers statistically unmoved. The acquirers generally give up a large premium and this often cancels the impact of the merger. Of course, some acquirers do better than others and this encourages many companies to enter the merger market.

Chapter VI integrates material presented in the first five chapters. The thirty-five mergers in the empirical study were reexamined for characteristics outlined in earlier discussions. For example, market exchange ratios indicated an average premium of about twenty to twenty-five per cent. When the consideration tendered by the acquirers was relatively generous, the acquired companies exhibited a good price movement. Empirical evidence indicated that when large premiums were transferred, the acquirer may issue convertible preferred to avoid negative effects on earnings per share.

Post-merger earnings per share of the acquirer did not increase as rapidly as the norm (see Chapter VI). However, there was a tendency for P/E ratios to increase slightly in response to a business combination. These factors appear to counterbalance one another in terms of significant market price changes.

Many instances of large scale differentials between market value paid and book value surrendered were presented in Chapter VI. Thus "pooling" accounting is often used to avoid harmful effects on earnings per share and price movement.

The presence of rumored stockholder dissent did not have a permanently negative effect on price movements. Any drop in price was short-lived and quickly overcome when the news of trouble passed. However, when a plan for merger is

actually cancelled for any reason the results may be different. All increases in the price of the stock, starting from the time the merger plan was first considered, are likely to be wiped out in a short period of time.

In the final analysis an investor might consider these points. The best time to invest in a merger is before announcement (if this is possible) because the merger effect on the market price of the acquiree's stock takes hold at about three months before announcement. Because the seller normally receives a significant price boost from a merger, available funds should generally be invested in stock of the acquiree rather than the acquirer. The positive price movement of the acquiree may continue almost up to approval. Potential candidates for merger are suggested in various financial publications. A comprehensive study of industry patterns may also suggest definite possibilities. Of course, a key danger to the investor is a broken merger, which will almost immediately wipe out all advances related to merger plans. Nevertheless, a prudent investor may sometimes be able to avoid broken mergers through wise investigation before commitment of funds.

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A P P E N D I C E S

APPENDIX A

MERGERS AND PAIRED COMPANIES SELECTED FOR ANALYSIS

1. Midland Ross Corp. - Industrial Rayon Corp.

Announcement 2/23/61; Approval 4/28/61; Con. 5/1/61

Automobiles (Automobile Parts)

Midland Ross Corp.	B
Sheller Manufacturing Corp.	B

Textiles (Mill Products)

Industrial Rayon Corp.	B-
Dan River Mills, Inc.	B-

2. National Distillers and Chemical Corp. - Bridgeport Brass

Announcement 1/16/61; Approval 6/14/61; Con. 7/1/61

Chemicals (Miscellaneous)

National Distillers and Chemical Corp.	B+
Reichhold Chemicals, Inc.	B+

Metals (Copper and Products)

Bridgeport Brass Co.	B+
Copper Range Co.	B+

3. Textron, Inc. - Spenser Kellogg and Son, Inc.

Announcement 5/25/61; Approval 7/26/61; Con. 7/28/61

Electronics (General)

Textron, Inc.	B
Raytheon Co.	B

Food Products (Vegetable Oils)

Spenser Kellogg and Sons, Inc.	B
Di Giorgio Fruit Co.	B

APPENDIX A (continued)

4. National Biscuit Co. - Cream of Wheat Corp. (The)

Announcement 4/12/61; Approval 8/9/61; Con. 8/9/61

Food Products (Bakery Products)

National Biscuit Co.	A
Sunshine Biscuit Co.	A

Food Products (Dairy Products)

Cream of Wheat Corp. (The)	B+
City Products Corp.	B+

5. Ford Motor Co. - Philco Corp.

Announcement 9/14/61; Approval 11/29/61; Con. 12/11/61

Automobiles (Passenger Cars)

Ford Motor Co.	B+
Chrysler Corp.	B

Electrical Products (Radio and Television)

Philco Corp.	B
Emerson Radio and Phonograph	B-

6. Mohasco Industries, Inc. - Firth Carpet Co.

Announcement 8/24/61; Approval 1/26/62; Con. 1/31/62

Household Furnishings (Floor Coverings)

Mohasco Industries, Inc.	B-
Bigelow-Sanford, Inc.	B-

Household Furnishings (Floor Coverings)

Firth Carpet Co.	B-
Congoleum-Nairn, Inc.	B-

APPENDIX A (continued)

7. Texaco, Inc. - TXL Oil Corp.

Announcement 2/6/62; Approval 4/19/62; Con. 4/19/62

Oil (Integrated Companies)

Texaco, Inc.	A+
Shell Oil Co.	A+

Oil (Crude Producers)

TXL Oil Co.	B+
Barber Oil Co.	B

8. Consolidation Coal Co. - Truax-Traer Co.

Announcement 1/23/62; Approval 4/20/62; Con. 4/30/62

Coal and Coke

Consolidation Coal Co.	A-
Koppers Co., Inc.	B+

Coke and Coal

Truax-Traer Co.	B
Island Creek Coal	B

9. Hooker Chemical Corp. - Parker Rust Proof Co.

Announcement 10/18/61; Approval 3/22/62; Con. 5/30/62

Chemicals (Diversified Products)

Hooker Chemical Corp.	A-
Stauffer Chemical Corp.	A-

Chemicals (Miscellaneous)

Parker Rust Proof Co.	B+
Harshaw Chemical Co.	B+

APPENDIX A (continued)

10. Warner Lambert Pharmaceutical Co. - American Chicle Co.

Announcement 7/25/62; Approval 10/1/62; Con. 10/2/62

Drugs (Drugs and Cosmetics)

Warner Lambert Pharmaceutical Co.	A
Sterling Drug, Inc.	A

Confectionary (Gum and Candy)

American Chicle Co.	A+
Beech-Nut Live Savers, Inc.	A

11. Air Reduction Co. - Pittsburgh Metallurgical Co.

Announcement 8/15/62; Approval 10/30/62; Con. 10/31/62

Chemicals (Industrial Gases)

Air Reduction Co.	A-
Chemetron Corp.	B+

Steel and Iron

Pittsburgh Metallurgical Co.	B
Continental Copper and Steel Ind., Inc.	B

12. Associated Dry Goods Corp. - Stix Baer and Fuller Co.

Announcement 8/6/62; Approval 2/20/63; Con. 3/4/63

Retail Trade (Department Stores)

Associated Dry Goods Corp.	A-
Gimble Brother, Inc.	A-

Retail Trade (Department Stores)

Stix Baer and Fuller Co.	B+
Outlet Co.	B+

APPENDIX A (continued)

13. Cities Service Co. - Tennessee Corp.

Announcement 11/23/62; Approval 3/20/63; Con. 3/30/63

Oil (Integrated Companies)

Cities Service Co.	A-
Sun Oil Co.	A

Chemicals (Fertilizers)

Tennessee Corp.	A
International Minerals and Chem. Corp.	B+

14. Singer Manufacturing Co. - Friden, Inc.

Announcement 7/17/63; Approval 10/14/63; Con. 10/14/63

Electrical Products (Home Appliances)

Singer Manufacturing Co.	B+
Whirlpool Corp.	B+

Office Equipment (Miscellaneous)

Friden, Inc.	B+
Pitney Bowes, Inc.	A

15. Continental Oil Co. - American Agricultural Chemical Co.

Announcement 4/24/63; Approval 9/11/63; Con. 10/21/63

Oil (Integrated Companies)

Continental Oil Co.	A
Marathon Oil Co.	A

Chemicals (Fertilizers)

American Agricultural Chemical Co.	B+
American Potash and Chemical Corp.	B+

APPENDIX A (continued)

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16. Eaton Manufacturing Co. - Yale and Towne Manufacturing
 Announcement 3/29/63; Approval 10/11/63; Con. 10/11/63
 Automobiles (Auto Parts)
Eaton Manufacturing Co.	A-
Federal Mogul-Bower Bearings, Inc.	A-
Machinery (Construction and Material Handling)	
Yale and Towne Manufacturing Co.	B+
Link-Belt Co.	B+
17. Socony Mobil Oil Co. - Virginia Carolina Chemical Corp.
 Announcement 8/12/63; Approval 11/21/63; Con. 11/29/63
 Oil (Integrated)
Socony Mobil Oil Co.	A
Standard Oil Company of Indiana	A
Chemicals (Miscellaneous)	
Virginia Carolina Chemical Corp.	B-
Witco Chemical Co., Inc.	B+
18. Goodyear Tire and Rubber Co. - Motor Wheel Corp.
 Announcement 8/28/63; Approval 1/16/64; Con. 1/17/64
 Tires and Rubber (Diversified)
Goodyear Tire and Rubber Co.	A-
Goodrich (B. F.) Co.	A-
Automobiles (Auto Parts)	
Motor Wheel Corp.	B-
American Metal Products Co.	B

APPENDIX A (continued)

19. Ingersoll-Rand Co. - Pendleton Tool Industries, Inc.

Announcement 1/9/64; Approval 2/28/64; Con. 2/28/64

Machinery (Industrial)

Ingersoll Rand Co.	A-
Babcock and Wilcox Co.	A-

Household Furnishings (Hardware and Tools)

Pendleton Tool Industries, Inc.	B+
Thor Power Tool Co.	B

20. Grace (W. R.) and Co. - Dubois Chemical, Inc.

Announcement 8/2/63; Approval 5/4/64; Con. 5/5/64

Chemicals (Diversified Producers)

Grace (W. R.) and Co.	A-
Allied Chemical Corp.	A-

Chemicals (Miscellaneous)

Dubois Chemical, Inc.	B+
Sun Chemical Corp.	B

21. Thompson Ramo Woolridge, Inc. - Marlin Rockwell Corp.

Announcement 1/9/64; Approval 4/29/64; Con. 6/23/64

Specialized Parts and Electronics

Thompson Ramo Woolridge, Inc.	A
Bendix Corp.	A

Automobiles (Auto Parts)

Marlin Rockwell Corp.	B+
Kelsey-Hayes Co.	B+

APPENDIX A (continued)

22. Federated Department Stores - Bullock's, Inc.

Announcement 3/25/64; Approval 7/20/64; Con. 8/29/64

Retail Trade (Department Stores)

Federated Department Stores	A
Penney (J. C.) Co.	A

Retail Trade (Department Stores)

Bullock's, Inc.	A
Mercantile Stores Co., Inc.	A-

23. Phillips Petroleum Co. - Sealright Oswego Falls Corp.

Announcement 7/7/64; Approval 9/30/64; Con. 10/15/64

Oil (Integrated Companies)

Phillips Petroleum Co.	A+
Gulf Oil Co.	A

Containers (Paper)

Sealright Oswego Falls Corp.	A-
Federal Paper Board Co.	B+

24. Celanese Corp. of America - Champlin Oil and Refining

Announcement 8/18/64; Approval 10/29/64; Con. 10/29/64

Chemicals (Diversified Producers)

Celanese Corp. of America	B+
Olin Mathieson, Inc.	B+

Oil (Integrated Companies)

Champlin Oil and Refining Co.	B
Ashland Oil and Refining Co.	B+

APPENDIX A (continued)

25. Interlake Iron Corp. - Acme Steel Co.

Announcement 9/22/64; Approval 12/18/64; Con. 12/22/64

Steel and Iron (Iron and Products)

Interlake Iron Corp.	B+
Cleveland Cliffs Iron Co.	B+

Steel and Iron (Other Integrated Companies)

Acme Steel Co.	B-
Copperweld Steel Co.	B

26. Gamble Skogmo, Inc. - Aldens, Inc.

Announcement 8/6/64; Approval 12/14/64; Con. 12/31/64

Retail (Miscellaneous)

Gamble Skogmo, Inc.	B+
White Stores, Inc.	B

Retail (Miscellaneous)

Aldens, Inc.	A-
United Merchants and Manufacturers	B+

27. Borden Co. - Smith Douglas Co., Inc.

Announcement 8/14/64; Approval 12/10/64; Con. 12/31/64

Food Products (Dairy Products)

Borden Co.	A+
National Dairy Products	A+

Chemicals (Fertilizers)

Smith Douglas, Inc.	B+
Pennsalt Chemicals Co.	B+

APPENDIX A (continued)

28. Litton Industries, Inc. - Royal McBee Corp.

Announcement 5/11/64; Approval 12/14/64; Con. 2/28/65

Electronics and Office Equipment (Bus. Machines)

Litton Industries, Inc.	B+
Burroughs Corp.	B+

Office Equipment (Bus. Machines)

Royal McBee Corp.	B
SCM Corp.	B

29. Georgia Pacific Corp. - Bestwall Gypsum Co.

Announcement 1/8/65; Approval 4/29/65; Con. 5/1/65

Construction (Lumber and Products)

Georgia Pacific Corp.	A
U. S. Plywood Corp.	A-

Construction (Wallboard, Roofing, etc.)

Bestwall Gypsum Co.	B+
Ruberoid Co.	B+

30. Pepsi Cola Co. - Frito-Lay, Inc.

Announcement 2/8/65; Approval 6/18/65; Con. 6/30/65

Beverages (Soft Drinks)

Pepsi Cola Co.	A-
Canada Dry Corp.	A-

Food Products (Miscellaneous)

Frito-Lay, Inc.	B+
Duffy-Mott Co., Inc.	B

APPENDIX A (continued)

31. Armour and Co. - Baldwin-Lima-Hamilton Corp.

Announcement 4/2/65; Approval 6/14/65; Con. 7/2/65

Food Products (Meat Packing)

Armour and Co. B+

Swift and Co. B+

Machinery (Construction and Material
Handling)

Baldwin-Lima-Hamilton Corp. B

Bucyrus-Erie Co. B

32. Bristol-Myers Co. - Drackett Co.

Announcement 3/22/65; Approval 7/7/65; Con. 8/2/65

Drugs and Cosmetics (Cosmetics and Toiletries)

Bristol Myers Co. A+

Colgate Palmolive, Inc. A-

Chemicals (Miscellaneous)

Drackett Co. B+

Wallace and Tiernan, Inc. A-

33. Lone Star Cement Corp. - Pacific Cement and Aggregates

Announcement 7/1/65; Approval 8/1/65; Con. 8/31/65

Building (Cement)

Lone Star Cement Corp. A-

Ideal Cement Co. A-

Building (Cement)

Pacific Cement and Aggregates, Inc. B+

Alpha Portland Cement B+

APPENDIX A (continued)

34. American Home Products Corp. - EKCO Products Co.

Announcement 7/19/65; Approval 9/30/65; Con. 9/30/65

Drugs and Cosmetics

American Home Products Corp. A+

Upjohn Co. A+

Home Furnishings (Hardware and Tools)

EKCO Products Co. B+

King-Seeley Thermos Co. A-

35. Caterpillar Tractor Co. - Towmotor Corp.

Announcement 7/26/65; Approval 11/9/65; Con. 11/9/65

Machinery (Construction and Material
Handling)

Caterpillar Tractor Co. A

Allis-Chalmers Manufacturing Co. B+

Machinery (Construction and Material
Handling)

Towmotor Corp. B+

Koehring Corp. B+

APPENDIX B

RELATIVE PRICE CHANGES (INDEXES) FOR PERIODS FROM
NINE MONTHS BEFORE ANNOUNCEMENT TO SIX MONTHS AFTER
ANNOUNCEMENT WITH SUPPLEMENTAL INFORMATION ON DIFFERENCES

ACQUIRERS (and paired companies)

No.		Pre-Announcement -9 months to -6 months			
		Index X_1	Index X_2	$D=X_1-X_2$	D^2
a	Midland Ross-Sheller Manuf.	104.7	94.6	10.1	102.0
b	Nat. Distillers-Reichhold C.	90.1	101.6	-11.5	132.3
c	Textron, Inc.-Raytheon Co.	103.2	94.3	8.9	79.2
d	National Bis.-Sunshine Bis.	103.4	108.1	- 4.7	22.1
e	Ford Motor-Chrysler Corp.	114.9	102.1	12.8	163.8
f	Mohasco-Bigelow Sanford	141.5	113.1	28.4	806.6
g	Texaco, Inc.-Shell Oil Co.	109.8	97.4	12.4	153.8
h	Consolidat. Coal-Kopper Co.	110.0	108.2	1.8	3.5
i	Hooker Chem.-Stauffer Chem.	101.7	94.3	7.4	54.8
j	Warner Lambert-Sterling D.	105.6	86.0	19.6	384.2
k	Air Reduction-Chemetron	109.7	104.8	4.9	24.0
l	Asso. Dry Goods-Gimbel Bros.	102.7	99.7	3.0	9.0
m	Cities Serv.-Sun Oil Co.	91.3	92.1	- .8	.6
n	Singer Manuf.-Whirlpool	118.4	128.1	- 9.7	94.1
o	Continen. Oil-Marathon Oil	99.2	100.0	- .8	.6
p	Eaton Manuf.-Federal Mogul	99.6	106.3	- 6.7	44.9
q	Socony-Std. Oil Co. of Ind.	119.4	123.7	- 4.3	18.5
r	Goodyear Tire-Goodrich Co.	100.0	105.6	- 5.6	31.4
s	Ingersoll R.-Babcock and W.	106.7	108.0	- 1.3	1.7
t	Grace (W.R.)-Allied Chem.	124.5	117.8	6.7	44.9
u	Thompson R.W.-Bendix Corp.	102.3	97.6	4.7	22.1
v	Fed. Depart. S.-Penney Co.	108.7	104.4	4.3	18.5
w	Phillips Pet.-Gulf Oil	88.7	96.2	- 7.5	56.3
x	Celanese Corp.-Olin Math.	112.6	105.5	7.1	50.4
y	Interlake Iron-Cleveland C.	115.4	117.6	- 2.2	4.8
z	Gamble Skogmo-White Stores	93.9	102.7	- 8.8	77.4
aa	Borden Co.-Nat. Dairy Prod.	107.6	106.0	1.6	2.6
bb	Litton Ind.-Burroughs Corp.	112.3	79.7	32.6	1062.8
cc	Georgia Pacif.-U.S. Plywood	100.2	91.1	9.1	82.8
dd	Pepsi Cola-Canada Dry	111.4	96.7	14.7	216.1
ee	Armour and Co.-Swift	95.0	99.1	- 4.1	16.8
ff	Bristol-Myers-Colgate Pal.	102.0	98.7	3.3	10.9
gg	Lone Star Cement-Ideal C.	94.7	97.7	- 3.0	9.0
hh	Amer. Home P.-Upjohn Co.	105.1	110.0	- 4.9	24.0
ii	Caterpillar T.-Allis Chalm.	106.5	103.3	3.2	10.2
				120.7	3836.7

APPENDIX B (continued)

ACQUIRERS
(and paired companies)

No.	Pre-Announcement -6 months to -3 months				Pre-Announcement -3 months to -1 month				
	Index X ₁	Index X ₂	D=X ₁ -X ₂	D ²	Index X ₁	Index X ₂	D=X ₁ -X ₂	D ²	
a	93.3	97.1	- 3.8	14.4	99.8	99.3	.5	.3	
b	95.0	83.0	12.0	144.0	95.7	94.4	.7	.5	
c	124.0	112.4	11.6	134.6	103.4	99.0	4.4	19.4	
d	112.8	107.1	5.7	32.5	109.3	105.4	3.9	15.2	
e	117.5	102.7	14.8	219.0	106.4	119.7	-13.3	176.9	
f	95.7	116.7	-21.0	441.0	90.9	96.9	- 6.0	36.0	
g	96.0	95.3	.7	.5	101.2	95.1	6.1	37.2	
h	117.1	95.7	21.4	458.0	96.1	91.3	4.8	23.4	
i	97.0	96.4	.6	.4	114.0	96.7	17.3	299.3	
j	104.1	104.5	- .4	.2	88.6	66.4	22.2	492.8	
k	80.5	84.7	- 4.2	17.6	90.1	88.0	2.1	4.1	
l	99.0	100.6	- 1.6	2.6	83.4	84.1	- .7	.5	
m	95.0	98.1	- 3.1	9.6	92.9	99.7	- 6.8	46.2	
n	106.3	120.9	-14.6	213.2	112.1	103.3	8.8	77.4	
o	105.5	117.0	-11.5	132.3	118.0	105.6	12.4	153.8	
p	108.8	114.8	- 6.0	36.0	104.8	104.2	.6	.4	
q	105.0	110.0	- 5.0	25.0	106.5	103.7	2.8	7.8	
r	108.0	108.5	- .5	.3	109.1	94.1	15.0	225.0	
s	99.0	90.4	8.6	74.0	97.8	101.5	- 3.7	13.7	
t	106.4	112.1	- 5.7	32.5	104.8	93.6	11.2	125.4	
u	95.1	100.5	- 5.4	29.2	93.7	94.2	- .5	.3	
v	102.1	101.1	1.0	1.0	106.7	99.4	7.3	53.3	
w	104.1	120.2	-16.1	259.2	95.1	102.0	- 6.9	47.6	
x	115.1	90.6	24.5	600.3	103.1	110.0	- 6.9	47.6	
y	106.8	106.5	.3	.1	99.6	103.7	- 4.1	16.8	
z	113.9	121.6	- 7.7	59.3	104.9	110.0	- 5.1	26.0	
aa	104.1	115.8	-11.7	136.9	102.9	103.7	- 2.8	7.8	
bb	86.7	91.0	- 4.3	18.5	100.9	99.5	1.4	2.0	
cc	102.8	116.5	-13.7	187.7	101.6	109.8	- 8.2	67.2	
dd	100.0	107.5	- 7.5	56.3	102.1	90.6	11.5	132.2	
ee	106.3	108.2	- 1.9	3.6	98.8	108.2	- 9.4	88.4	
ff	102.1	107.2	- 5.1	26.0	110.4	101.8	8.6	74.0	
gg	105.0	98.8	6.2	38.4	93.4	92.9	.5	.3	
hh	102.2	119.2	-17.0	289.0	97.5	95.3	2.2	4.8	
ii	113.5	105.9	7.4	54.8	89.2	78.3	10.9	118.8	
			-53.0	3748.0				80.8	2442.4

APPENDIX B (continued)

ACQUIRERS
(and paired companies)

No.	<u>Pre-Announcement</u> <u>-1 to month to announcement</u>				<u>Post-Announcement</u> <u>announcement to +1 month</u>			
	Index X_1	Index X_2	$D=X_1-X_2$	D^2	Index X_1	Index X_2	$D=X_1-X_2$	D^2
a	101.9	98.5	3.4	11.6	98.3	115.9	-17.6	309.8
b	104.5	109.2	- 4.7	11.6	104.8	103.6	1.2	1.4
c	100.0	105.1	- 5.1	26.0	100.0	99.0	1.0	1.0
d	102.5	101.9	.6	.4	99.2	95.8	3.4	11.6
e	105.5	109.2	- 3.7	13.7	98.3	107.8	- 9.5	90.3
f	113.8	118.0	- 4.2	17.7	86.8	97.9	-11.1	123.2
g	104.8	99.7	5.1	26.0	100.0	101.3	- 1.3	1.7
h	105.0	103.7	1.3	1.7	106.5	101.8	4.7	22.1
i	98.5	97.1	1.4	2.0	98.2	100.0	- 1.8	3.2
j	112.8	118.3	- 5.5	30.3	100.6	101.5	- .9	.8
k	106.0	97.9	8.1	65.6	98.4	101.4	- 3.0	9.0
l	96.0	88.0	8.0	64.0	96.1	102.0	- 5.9	34.8
m	114.4	99.7	14.7	216.1	107.3	96.4	10.9	118.8
n	98.5	89.9	8.6	74.0	103.8	112.7	- 8.9	79.2
o	100.0	105.1	- 5.1	26.0	103.8	101.0	2.8	7.8
p	101.0	97.5	3.5	12.3	102.8	109.7	- 6.9	47.6
q	99.6	107.3	- 7.7	59.3	103.8	99.8	4.0	16.0
r	97.4	112.2	-14.8	219.0	103.3	98.4	4.9	24.0
s	104.9	105.3	- 0.4	.2	104.0	98.6	5.4	29.2
t	96.5	104.7	-8.2	67.2	107.0	100.3	6.7	44.9
u	95.3	102.5	- 7.2	51.8	102.9	95.5	7.4	54.8
v	108.4	112.7	- 4.3	18.5	98.2	103.9	- 5.7	32.5
w	108.0	100.0	8.0	64.0	101.9	100.9	1.0	1.0
x	95.6	94.2	1.4	2.0	97.4	100.0	- 2.6	6.8
y	106.1	103.6	2.5	6.3	102.4	104.6	- 2.2	4.8
z	101.4	105.8	- 4.4	19.5	98.9	98.2	.7	.5
aa	99.7	99.7	---	---	103.9	96.0	7.9	62.4
bb	90.4	103.3	-12.9	166.4	91.9	96.2	- 4.3	18.5
cc	102.4	95.8	6.6	43.6	107.6	105.0	2.6	6.8
dd	112.6	106.5	6.1	37.2	106.5	101.4	5.1	26.0
ee	86.7	91.8	- 5.1	26.0	99.7	95.2	4.5	20.3
ff	101.3	107.1	- 5.8	33.6	102.7	97.0	5.7	32.5
gg	94.2	95.5	- 1.3	1.7	97.3	100.7	- 3.4	11.6
hh	101.3	104.1	- 2.8	7.8	99.3	101.5	- 2.2	4.8
ii	94.3	110.3	-16.0	256.0	110.6	105.3	5.3	28.1
			-39.9	2442.4			- 2.1	1287.6

APPENDIX B (continued)

ACQUIRERS
(and paired companies)

No.	Post-Announcement +1 month to +2 months				Post-Announcement +2 months to approval			
	Index X_1	Index X_2	$D=X_1-X_2$	D^2	Index X_1	Index X_2	$D=X_1-X_2$	D^2
a	97.8	90.2	7.6	57.8	94.3	99.3	- 5.0	25.0
b	105.0	107.6	- 2.6	6.8	100.4	87.6	12.8	163.8
c	98.6	97.4	1.2	1.4	100.0	105.0	- 5.0	25.8
d	96.7	97.7	- 1.0	1.0	102.0	99.4	2.6	6.8
e	108.6	99.1	9.5	90.3	98.7	88.3	10.4	108.2
f	100.0	104.3	- 4.3	18.5	100.0	128.3	-23.8	566.4
g	95.7	96.1	- .4	.2	---	---	---	---
h	92.0	100.6	- 8.6	74.0	92.4	101.1	- 8.7	75.7
i	101.9	91.5	10.4	108.2	97.6	94.6	3.0	9.0
j	86.4	94.6	- 8.2	67.2	96.1	97.6	- 1.5	2.3
k	96.4	95.2	1.2	1.4	96.5	97.1	- .6	.0
l	100.6	101.9	- 1.3	1.7	118.3	110.5	7.8	60.8
m	102.4	106.3	- 3.9	15.2	108.1	105.7	2.4	5.8
n	109.3	108.9	.4	.2	94.2	90.6	3.6	13.0
o	100.0	107.7	- 7.7	59.3	106.1	103.8	2.3	5.3
p	99.0	109.5	-10.5	110.3	99.3	104.8	- 5.5	30.3
q	100.1	97.5	2.6	6.8	87.5	92.2	- 4.7	22.1
r	109.6	105.9	3.7	13.7	100.9	98.0	2.9	8.4
s	107.2	105.5	1.7	2.9	---	---	---	---
t	95.2	102.0	- 6.8	46.2	120.3	105.9	14.4	207.4
u	113.4	96.9	16.5	272.3	96.8	94.6	2.2	4.8
v	103.0	96.9	6.1	37.1	101.3	115.1	-13.8	190.4
w	101.9	101.9	0.0	---	98.4	100.6	- 2.2	4.8
x	103.6	99.1	4.5	20.3	107.6	97.0	10.6	112.4
y	97.6	95.4	2.2	4.8	105.3	91.6	13.7	187.7
z	106.9	94.1	12.8	163.8	97.6	98.7	- 1.1	1.2
aa	103.1	105.1	- 2.0	4.0	99.5	96.6	2.9	8.4
bb	105.7	119.6	-13.9	193.2	118.9	91.1	27.8	772.8
cc	103.8	103.6	.2	.0	100.2	96.0	4.2	17.6
dd	106.1	111.0	- 4.9	24.0	97.4	89.1	8.3	68.9
ee	92.8	94.5	- 1.7	2.9	92.8	95.6	- 2.8	7.8
ff	103.7	94.1	9.6	92.2	93.8	97.0	- 3.2	10.2
gg	---	---	---	---	---	---	---	---
hh	106.0	98.7	7.3	53.3	104.0	97.9	6.1	37.2
ii	109.3	116.1	- 6.8	46.3	103.2	112.0	- 8.8	77.4
			12.9	1597.1			56.3	2836.9

APPENDIX B (continued)

ACQUIRERS
(and paired companies)

No.	<u>Post-Approval</u> <u>approval to +1 month</u>				<u>Post-Approval</u> <u>+1 month to +3 months</u>			
	Index X_1	Index X_2	$D=X_1-X_2$	D^2	Index X_1	Index X_2	$D=X_1-X_2$	D^2
a	108.6	100.7	7.9	62.4	95.7	102.9	- 7.2	51.8
b	95.7	100.0	- 4.3	18.5	99.5	92.0	7.5	56.2
c	90.5	104.8	-14.3	204.5	96.3	86.6	9.7	94.1
d	95.8	105.6	- 9.8	96.0	111.3	108.6	2.7	7.3
e	101.9	106.2	- 4.3	18.5	91.4	109.9	-18.5	342.3
f	110.1	108.2	1.9	3.6	87.4	98.5	-11.1	123.2
g	100.7	97.0	3.7	13.7	93.8	84.5	9.3	84.5
h	101.6	92.8	8.8	77.4	85.3	86.7	- 1.4	2.0
i	90.0	100.6	-10.6	112.4	86.9	82.9	4.0	16.0
j	106.1	102.6	3.5	12.3	121.2	118.0	3.2	10.2
k	115.4	114.9	.5	.2	100.7	106.5	- 5.8	33.6
l	100.3	101.7	- 1.4	2.0	107.3	103.5	3.8	14.4
m	103.8	108.4	- 4.6	21.2	101.3	97.3	4.0	16.0
n	103.3	111.4	- 8.1	65.6	111.9	114.6	- 2.7	7.3
o	94.8	97.2	- 2.4	5.8	90.3	97.6	- 7.3	53.3
p	98.3	94.3	4.0	16.0	108.4	100.8	7.6	57.8
q	111.5	109.9	1.6	2.6	102.1	100.4	1.7	2.9
r	98.3	94.5	3.8	14.4	102.1	111.3	- 9.2	84.6
s	103.0	110.1	- 7.1	50.4	101.2	94.2	7.0	49.0
t	103.7	97.7	6.0	36.0	100.4	100.0	.4	.2
u	102.3	100.8	1.5	2.3	103.0	102.0	1.0	1.0
v	104.1	96.0	8.1	65.6	105.4	107.7	- 2.3	5.3
w	98.4	100.6	- 2.2	4.8	100.5	98.1	2.4	5.8
x	109.2	99.0	10.2	104.0	106.4	107.3	- .9	.8
y	107.4	102.1	5.3	28.1	109.0	112.5	- 3.5	12.3
z	104.8	98.7	6.1	37.2	98.0	114.2	-16.2	262.4
aa	102.2	106.1	- 3.9	15.2	106.8	102.2	4.6	21.2
bb	106.5	114.9	- 8.4	70.6	109.7	126.3	-16.6	275.6
cc	96.3	93.8	2.5	6.3	92.0	95.8	- 3.8	14.4
dd	108.0	94.2	13.8	190.4	99.8	105.0	- 5.2	27.0
ee	93.9	96.5	- 2.6	6.8	111.0	104.2	6.8	46.2
ff	107.8	86.7	21.1	445.2	108.6	105.7	2.9	8.4
gg	98.6	100.0	- 1.4	2.0	97.2	106.0	- 8.8	77.4
hh	99.3	101.5	- 2.2	4.8	109.2	105.1	4.1	16.8
ii	104.4	115.4	-11.0	121.0	91.9	99.6	- 7.7	59.3
			11.7	1937.6			-45.5	1942.7

APPENDIX B (continued)

ACQUIRERS
(and paired companies)

No.	<u>Post-Approval</u> <u>+3 months to +6 months</u>				<u>Summary</u> <u>announcement to approval</u>			
	Index X_1	Index X_2	$D=X_1-X_2$	D^2	Index X_1	Index X_2	$D=X_1-X_2$	D^2
a	102.0	102.8	- .8	.7	90.8	103.8	-13.0	169.0
b	99.5	86.4	13.1	171.6	110.6	97.6	13.0	169.0
c	115.8	113.3	2.5	6.3	98.6	100.6	- 2.0	4.0
d	99.6	86.5	13.1	171.6	97.9	93.0	4.9	24.0
e	76.9	78.9	- 2.0	4.0	112.1	81.8	30.3	918.1
f	92.1	75.3	16.8	282.2	86.6	126.4	-39.6	1568.2
g	105.1	99.4	5.7	32.5	95.6	97.3	- 1.7	2.9
h	91.7	105.7	-14.0	196.0	90.6	103.6	-13.0	169.0
i	92.8	96.2	- 3.4	11.6	97.6	86.6	11.0	121.0
j	113.2	100.2	13.0	169.0	85.5	93.8	-10.3	106.1
k	100.7	103.7	- 3.0	9.0	91.5	93.7	- 2.2	4.8
l	93.9	100.0	- 6.1	37.2	114.4	114.8	- .4	.2
m	101.9	119.5	-17.6	310.0	119.0	101.4	17.6	309.8
n	101.9	112.3	-10.4	108.2	106.9	111.2	- 4.3	18.5
o	128.1	122.6	5.5	30.3	109.6	112.8	- 3.2	10.2
p	112.5	106.5	6.0	36.0	101.0	122.8	-21.8	475.2
q	108.0	123.5	-15.5	240.3	91.0	89.7	1.3	1.7
r	100.3	95.7	4.6	21.2	114.2	102.1	12.1	146.4
s	94.6	117.7	-23.1	533.6	103.7	99.1	4.6	21.2
t	101.6	104.5	- 2.9	8.4	122.0	108.3	13.7	187.7
u	114.0	98.1	15.9	252.8	111.2	87.6	23.6	557.0
v	103.7	110.7	- 7.0	49.0	102.6	116.0	-13.4	180.0
w	103.8	92.1	11.7	136.9	101.9	104.9	- 3.0	9.0
x	112.8	111.1	1.7	2.9	100.9	99.1	1.8	3.2
y	94.4	106.5	-12.1	146.4	105.3	88.4	16.9	285.6
z	85.9	92.1	- 6.2	38.4	103.2	97.5	7.5	56.2
aa	100.9	101.6	- .7	.5	106.2	97.5	8.7	75.7
bb	100.7	94.0	6.7	44.9	115.5	103.7	11.8	139.2
cc	103.9	119.3	-15.4	237.2	111.9	104.4	7.5	56.2
dd	94.0	93.8	.2	.4	109.6	100.4	9.2	84.6
ee	105.6	103.0	2.6	6.8	85.8	86.1	- .3	.1
ff	112.6	94.6	18.0	324.0	99.8	89.9	9.9	98.0
gg	108.7	101.3	7.4	54.8	97.3	100.7	- 3.4	11.6
hh	89.5	99.7	-10.2	104.0	109.5	98.1	11.4	127.0
ii	86.1	100.0	-13.9	193.2	124.7	136.8	-12.1	146.4
			-19.8	3971.0			-73.1	6256.4

APPENDIX B (continued)

ACQUIRERS
(and paired companies)

No.	<u>Summary</u> <u>-3 months to approval</u>				<u>Summary</u> <u>-3 months to approval +1</u>			
	Index X_1	Index X_2	$D=X_1-X_2$	D^2	Index X_1	Index X_1	$D=X_1-X_2$	D^2
a	92.3	101.5	- 9.2	84.9	100.2	103.0	- 2.8	7.8
b	110.6	100.6	10.0	100.0	105.8	100.6	5.2	27.0
c	101.9	104.8	- 2.9	8.4	92.3	109.7	-17.4	302.8
d	109.6	99.9	9.7	94.0	105.0	105.5	- .5	.0
e	125.8	106.7	19.1	364.8	128.2	113.6	14.6	213.2
f	89.8	140.0	-50.2	2520.0	98.9	151.5	-52.6	2766.8
g	101.4	92.3	9.1	82.8	102.1	89.5	12.6	158.8
h	91.4	98.0	- 6.6	43.6	92.8	91.0	1.8	3.2
i	109.6	81.3	28.3	800.9	98.6	81.8	16.8	282.0
j	83.5	73.6	9.9	98.0	88.6	75.5	13.1	171.6
k	87.4	80.7	6.7	44.9	100.9	92.7	8.2	67.2
l	91.6	85.0	6.6	43.6	91.8	86.4	5.4	29.2
m	126.4	100.8	25.6	655.4	131.2	109.3	21.9	479.6
n	117.9	103.2	14.7	216.1	121.8	115.1	6.7	44.9
o	129.1	125.3	3.8	14.4	122.4	121.8	.4	.0
p	107.0	124.8	-17.8	316.8	105.1	117.7	-12.7	161.3
q	96.6	99.8	- 3.2	10.2	107.6	109.7	- 2.1	4.4
r	121.4	107.8	13.6	184.9	118.5	102.0	16.5	272.3
s	106.3	105.8	.5	.0	109.4	116.5	- 7.1	50.4
t	123.4	106.1	17.3	299.3	127.9	103.7	24.2	585.6
u	99.3	85.7	13.6	185.0	101.6	85.4	16.2	262.4
v	118.6	130.0	-11.4	129.9	123.4	124.8	- 1.4	2.0
w	104.6	103.3	1.3	1.7	102.9	103.9	1.0	1.0
x	99.5	102.7	- 3.2	10.2	107.0	99.7	7.3	53.3
y	111.2	97.4	13.8	190.4	119.4	99.4	20.0	400.0
z	109.9	111.3	- 1.4	2.0	115.2	109.9	5.3	28.1
aa	109.0	102.7	6.3	39.7	111.4	109.0	2.4	5.8
bb	105.3	106.5	- 1.2	1.4	112.2	122.4	-10.2	104.0
cc	116.5	109.9	6.6	43.6	112.2	103.1	9.1	82.8
dd	126.3	96.9	29.4	864.4	136.3	91.3	45.0	2025.0
ee	73.6	85.5	-11.9	141.6	69.0	82.5	-13.5	182.3
ff	111.9	96.5	15.4	237.2	120.6	83.8	36.8	1354.2
gg	85.7	89.3	- 3.6	12.9	84.5	89.3	- 4.8	15.8
hh	109.3	97.4	11.9	141.6	109.5	106.0	3.5	12.3
ii	104.9	118.2	-13.3	176.9	109.4	136.4	-25.0	625.0
			<u>138.3</u>	<u>8161.5</u>			<u>141.9</u>	<u>10782.1</u>

APPENDIX B (continued)

ACQUIRERS
(and paired companies)

No.	<u>Summary</u> <u>-3 months to +6 months</u>			
	Index X_1	Index X_2	$D = X_1 - X_2$	D^2
a	97.8	108.1	-10.3	106.1
b	104.8	78.8	26.0	676.0
c	102.9	105.7	- 2.8	7.8
d	116.4	96.2	20.2	408.0
e	90.1	98.5	- 8.4	70.6
f	79.5	112.3	-32.8	1075.8
g	103.2	75.3	27.9	778.4
h	72.6	83.4	-10.8	116.6
i	79.5	62.8	16.7	278.9
j	121.6	89.3	32.3	1043.3
k	102.2	102.4	- 0.2	.0
l	93.3	89.3	4.0	16.0
m	135.5	127.0	8.5	72.3
n	138.8	148.1	- 9.3	86.5
o	141.6	145.7	- 4.1	16.8
p	128.2	126.4	1.8	3.2
q	118.7	136.0	-17.3	299.3
r	122.1	108.6	13.5	182.2
s	104.7	129.1	-24.4	595.4
t	130.5	108.3	22.2	492.8
u	119.9	85.4	34.5	1190.3
v	135.0	148.8	-13.8	190.4
w	107.3	93.9	13.4	179.6
x	128.4	118.8	9.6	92.2
y	122.8	119.1	3.7	13.7
z	97.0	115.6	-18.6	346.0
aa	120.0	113.1	6.9	47.6
bb	124.0	146.4	-22.4	501.8
cc	107.2	117.8	-10.6	112.4
dd	128.0	89.9	38.1	1451.6
ee	81.0	88.5	- 7.5	56.3
ff	147.6	83.9	63.7	4057.7
gg	89.3	95.9	- 6.6	43.6
hh	107.0	111.0	- 4.0	16.0
ii	86.5	135.8	-49.3	2430.5
			89.8	17055.7

APPENDIX B (continued)

ACQUIREES
(and paired companies)

No.		Pre-Announcement -9 months to -6 months			
		Index X_1	Index X_2	$D = X_1 - X_2$	D^2
A	Industrial Rayon-Dan River	94.9	94.6	0.3	.9
B	Bridgeport Brass-Copper Ran.	68.1	88.5	-20.4	416.2
C	Spenser Kellog-Di Giorgio	90.0	103.9	-13.9	193.2
D	Cream of Wheat-City Prod.	97.9	95.5	2.4	5.8
E	Philco Corp.-Emerson Radio	114.3	116.7	- 2.4	5.8
F	Firth Carpet-Congoleum N.	109.3	113.6	- 4.3	18.5
G	TXL Oil-Barber Oil	93.4	90.1	3.3	10.9
H	Truax-Traer-Island Creek	115.2	101.4	13.8	190.4
I	Parker Rust Proof-Hanshaw	108.7	96.9	11.8	139.2
J	American Chicle-Beech-Nut	86.2	85.7	0.5	.3
K	Pitt. Met.-Continen. Cop.	107.1	104.6	2.5	6.3
L	Stix Baer and Ful.-Outlet	92.8	101.1	- 8.3	68.9
M	Tenn. Corp.-Internat. Min.	83.8	84.0	- 0.2	.0
N	Friden-Pitney-Bowes	114.6	116.7	- 2.1	4.4
O	American Ag.-Amer. Pot.	100.0	87.3	12.7	161.3
P	Yale and Towne-Link Belt	101.2	100.9	0.3	.0
Q	Vir. Cor.-Whitco Chem.	136.4	118.0	18.4	338.6
R	Motor Wheel-Amer. Met. P.	106.1	106.4	- .3	.0
S	Pendleton Tool-Thor Pow.	104.6	98.8	5.6	31.4
T	Dubois Chem.-Sun Chem.	121.6	109.6	12.0	144.0
U	Marlin Rock.-Kelsey Hay.	102.6	111.6	9.0	81.0
V	Bullock's-Mercantile S.	105.4	108.9	- 3.5	12.3
W	Sealright Os.-Fed. Pop.	88.0	108.7	-20.7	428.5
X	Champlin Oil-Ashland Oil	103.0	120.0	-17.0	289.0
Y	Acme Steel-Copperweld S.	125.5	119.0	6.0	36.0
Z	Aldens-United Mer.	100.0	100.7	- 0.7	.5
AA	Smith-Douglas-Pennsalt	120.9	109.7	11.2	125.4
BB	Royal McBee-SCM	118.9	111.5	7.4	20.3
CC	Bestwall Gypsum-Ruberoid	93.8	100.4	- 6.6	43.6
DD	Frito-Lay-Duffy-Mott	95.8	97.7	- 1.9	3.6
EE	Baldwin-Lima-Bueyrus Erie	100.0	99.3	0.7	.5
FF	Drackett-Wallace and T.	99.0	103.6	- 4.6	21.2
GG	Pacific Cement-Alpha Port.	104.2	96.4	7.8	62.4
HH	EKCO Prod.-King-Seeley	109.1	114.1	- 5.0	25.0
II	Towmotor-Koehring	115.2	102.1	13.1	171.6
				26.9	3048.2

APPENDIX B (continued)

ACQUIREES
(and paired companies)

No.		<u>Pre-Announcement</u> <u>-9 months to -6 months</u>			
		Index X_1	Index X_2	$D=X_1-X_2$	D^2
A	Industrial Rayon-Dan River	94.9	94.6	0.3	.9
B	Bridgeport Brass-Copper Ran.	68.1	88.5	-20.4	416.2
C	Spenser Kellogg-Di Giorgio	90.0	103.9	-13.9	193.2
D	Cream of Wheat-City Prod.	97.9	95.5	2.4	5.8
E	Philco Corp.-Emerson Radio	114.3	116.7	- 2.4	5.8
F	Firth Carpet-Congoleum N.	109.3	113.6	- 4.3	18.5
G	TXL Oil-Barber Oil	93.4	90.1	3.3	10.9
H	Truax-Traer-Island Creek	115.2	101.4	13.8	190.4
I	Parker Rust Proof-Hanshaw	108.7	96.9	11.8	139.2
J	American Chicle-Beech-Nut	86.2	85.7	0.5	.3
K	Pitt. Met.-Continen. Cop.	107.1	104.6	2.5	6.3
L	Stix Baer and Ful.-Outlet	92.8	101.1	- 8.3	68.9
M	Tenn. Corp.-Internat. Min.	83.8	84.0	- 0.2	.0
N	Friden-Pitney-Bowes	114.6	116.7	- 2.1	4.4
O	American Ag.-Amer. Pot.	100.0	87.3	12.7	161.3
P	Yale and Towne-Link Belt	101.2	100.9	0.3	.0
Q	Vir. Cor.-Whitco Chem.	136.4	118.0	18.4	338.6
R	Motor Wheel-Amer. Met. P.	106.1	106.4	- .3	.0
S	Pendleton Tool-Thor Pow.	104.6	98.8	5.6	31.4
T	Dubois Chem.-Sun Chem.	121.6	109.6	12.0	144.0
U	Marlin Rock.-Kelsey Hay.	102.6	111.6	9.0	81.0
V	Bullock's-Mercantile S.	105.4	108.9	- 3.5	12.3
W	Sealright Os.-Fed. Pop.	88.0	108.7	-20.7	428.5
X	Champlin Oil-Ashland Oil	103.0	120.0	-17.0	289.0
Y	Acme Steel-Copperweld S.	125.5	119.0	6.0	36.0
Z	Aldens-United Mer.	100.0	100.7	- 0.7	.5
AA	Smith-Douglas-Pennsalt	120.9	109.7	11.2	125.4
BB	Royal McBee-SCM	118.9	111.5	7.4	20.3
CC	Bestwall Gypsum-Ruberoid	93.8	100.4	- 6.6	43.6
DD	Frito-Lay-Duffy-Mott	95.8	97.7	- 1.9	3.6
EE	Baldwin-Lima-Bueyrus Erie	100.0	99.3	0.7	.5
FF	Drackett-Wallace and T.	99.0	103.6	- 4.6	21.2
GG	Pacific Cement-Alpha Port.	104.2	96.4	7.8	62.4
HH	EKCO Prod.-King-Seeley	109.1	114.1	- 5.0	25.0
II	Towmotor-Koehring	115.2	102.1	13.1	171.6
				26.9	3048.2

APPENDIX B (continued)

ACQUIREES
(and paired companies)

No.	<u>Pre-Announcement</u> <u>-6 months to -3 months</u>				<u>Pre-Announcement</u> <u>-3 months to -1 month</u>			
	Index X_1	Index X_2	$D=X_1-X_2$	D^2	Index X_1	Index X_2	$D=X_1-X_2$	D^2
A	114.0	97.2	16.8	282.2	104.1	101.0	3.1	9.6
B	73.4	87.0	-13.6	185.0	100.0	93.8	6.2	38.4
C	113.6	108.4	5.2	27.0	116.9	101.4	15.5	240.3
D	104.8	108.2	- 3.4	11.6	115.9	101.6	14.3	204.5
E	115.0	108.0	7.0	49.0	86.1	90.4	- 4.3	18.5
F	106.4	104.0	2.0	4.0	101.6	105.1	- 3.5	12.3
G	107.7	106.9	.8	.6	127.5	106.0	21.5	462.3
H	111.9	96.2	15.7	246.5	104.1	125.7	-21.6	466.6
I	92.0	101.1	- 9.1	82.8	103.9	96.8	7.1	50.4
J	109.0	100.0	9.0	81.0	63.4	86.5	-23.1	533.6
K	77.9	85.3	- 7.4	54.8	81.3	84.5	- 3.2	10.2
L	88.0	96.3	- 8.3	68.9	96.1	92.8	3.3	10.9
M	82.0	94.9	-12.9	166.4	100.0	84.1	15.9	252.8
N	93.2	110.0	-16.8	282.2	125.2	102.6	22.6	510.8
O	106.3	121.5	-15.2	231.0	120.4	89.7	30.7	942.5
P	111.7	106.9	5.2	27.0	115.9	104.8	11.1	123.2
Q	87.8	118.2	-30.4	924.2	107.5	112.2	- 4.7	22.1
R	115.7	118.9	- 3.2	10.2	104.9	91.1	13.8	190.4
S	100.0	93.1	6.9	47.6	94.9	97.4	- 2.5	6.3
T	101.4	98.8	2.6	6.8	105.6	99.1	6.5	42.3
U	100.8	102.2	- 1.4	2.0	100.4	100.0	.4	.2
V	100.5	104.3	- 3.8	14.4	96.7	99.1	- 2.4	5.8
W	93.4	94.9	- 1.5	2.3	92.0	96.4	- 4.4	19.4
X	98.6	119.6	-21.0	441.0	112.8	93.8	19.0	361.0
Y	95.3	109.1	-13.8	190.4	97.6	101.7	- 4.1	16.8
Z	113.1	104.0	9.1	82.8	120.4	102.6	17.8	316.8
AA	98.5	94.5	4.0	16.0	99.0	95.9	3.1	9.6
BB	109.8	130.8	-21.0	441.0	107.9	103.6	4.3	18.5
CC	96.0	93.3	2.7	7.3	92.0	97.2	- 5.2	27.0
DD	102.5	100.0	2.5	6.3	96.0	101.9	- 5.9	34.8
EE	99.1	103.7	- 4.6	21.2	115.9	106.1	9.8	96.0
FF	99.5	124.1	-24.6	605.2	105.1	98.4	6.7	44.9
GG	102.4	105.6	- 3.2	10.2	104.7	90.4	13.7	187.7
HH	112.6	115.4	- 2.8	7.8	105.0	98.0	7.0	49.0
II	107.0	115.0	- 8.0	64.0	86.1	84.3	1.8	3.2
			-136.5	4700.7			170.3	5338.7

APPENDIX B (continued)

ACQUIREES
(and paired companies)

No.	<u>Pre-Announcement</u> <u>-1 month to announcement</u>				<u>Post-Announcement</u> <u>announcement to +1 month</u>			
	Index X_1	Index X_2	$D=X_1-X_2$	D^2	Index X_1	Index X_2	$D=X_1-X_2$	D^2
A	102.9	114.4	-11.5	132.3	92.1	101.7	- 9.5	90.3
B	113.6	102.8	10.8	116.6	134.8	117.3	17.5	306.3
C	106.0	98.0	8.0	64.0	105.2	89.4	15.8	249.6
D	110.9	136.0	-25.1	630.0	97.0	85.4	11.6	134.6
E	107.6	94.1	13.5	182.2	98.8	107.8	- 9.0	81.0
F	98.4	113.9	-15.5	240.2	100.0	94.2	5.8	33.6
G	129.2	120.8	8.4	70.6	107.1	95.3	11.8	139.2
H	98.3	96.8	1.5	2.3	101.1	100.0	1.0	1.0
I	111.6	98.4	13.2	174.2	100.0	102.2	- 2.2	4.8
J	125.5	109.4	16.1	259.2	103.6	100.0	3.6	13.0
K	125.9	93.9	32.0	1024.0	98.9	95.7	3.2	10.2
L	132.5	100.0	32.5	1056.3	99.2	98.8	.4	.2
M	123.9	114.8	9.1	82.8	101.9	97.7	4.2	17.6
N	111.6	94.7	16.9	285.6	104.6	109.4	- 4.8	23.0
O	147.3	105.5	41.8	1747.2	107.9	105.7	2.2	4.8
P	112.8	100.8	12.0	144.0	110.4	104.3	- 3.9	15.2
Q	127.4	96.8	30.6	936.4	101.1	100.0	1.1	1.2
R	108.8	107.0	1.8	3.2	104.9	103.3	1.6	2.6
S	154.3	96.0	58.3	3398.9	109.0	101.4	7.6	57.8
T	106.6	98.6	8.0	64.0	110.0	101.4	8.6	74.0
U	112.8	96.3	16.5	272.3	103.3	97.8	5.5	30.2
V	124.0	94.9	29.1	846.8	97.1	107.4	-10.3	106.1
W	128.4	96.3	32.1	1030.4	103.0	100.0	3.0	9.0
X	107.8	97.7	10.1	102.0	101.8	101.7	.1	.0
Y	109.4	114.4	- 5.0	25.0	98.8	101.9	- 3.1	9.6
Z	101.9	101.9	0.0	.0	104.9	103.7	1.2	1.4
AA	128.0	108.3	19.7	388.1	103.3	94.9	8.4	70.6
BB	109.2	83.4	25.8	665.6	90.8	101.7	-10.9	118.8
CC	113.2	102.0	11.2	125.4	100.7	106.8	- 6.1	37.2
DD	103.2	104.1	- 0.9	.8	108.6	96.9	11.7	136.9
EE	122.1	99.1	23.0	529.0	102.7	111.0	- 8.3	68.9
FF	127.7	111.1	16.6	275.6	100.4	99.3	1.1	1.2
GG	108.3	92.2	16.1	259.2	104.2	94.7	9.5	90.3
HH	113.8	107.6	5.2	27.0	109.4	98.7	10.7	114.5
II	130.5	104.9	25.6	655.4	109.3	99.0	10.3	106.1
			487.5	15816.6			89.4	2160.8

APPENDIX B (continued)

ACQUIREES
(and paired companies)

No.	<u>Post-Announcement</u> <u>+1 month to +2 months</u>				<u>Post-Announcement</u> <u>+2 months to approval</u>			
	Index X_1	Index X_2	$D=X_1-X_2$	D^2	Index X_1	Index X_2	$D=X_1-X_2$	D^2
A	105.5	93.4	12.1	146.4	103.3	100.9	2.4	5.8
B	103.3	97.2	6.1	37.2	110.0	118.4	- 8.4	70.6
C	97.1	99.2	- 2.1	4.4	102.4	100.8	1.6	2.6
D	102.6	101.4	0.8	.6	102.4	95.8	6.6	43.6
E	103.7	99.1	4.6	21.2	106.1	98.2	7.9	62.4
F	100.0	89.8	10.2	104.0	84.1	119.0	-34.9	1218.0
G	102.7	99.2	3.5	12.3	---	---	---	---
H	87.9	90.0	- 2.1	4.4	98.1	93.2	4.9	24.0
I	104.6	96.2	8.4	70.6	103.2	108.0	- 4.8	23.0
J	89.6	90.6	- 1.0	1.0	99.0	102.5	- 3.5	12.3
K	97.2	100.0	- 2.8	7.8	96.5	81.8	14.7	216.1
L	97.7	100.0	- 2.3	5.3	129.2	103.0	26.2	686.4
M	103.7	105.1	- 1.4	2.0	101.8	102.9	- 1.1	1.2
N	105.8	95.4	10.4	108.2	98.6	94.4	4.2	17.6
O	101.4	88.9	12.5	156.3	103.6	121.3	-17.7	313.3
P	100.8	102.4	- 1.6	2.6	106.6	105.7	.9	.8
Q	92.5	100.6	- 8.1	65.6	107.1	105.4	1.7	2.9
R	108.8	93.7	15.1	228.0	108.1	96.6	11.5	132.3
S	84.3	100.9	-16.6	275.6	---	---	---	---
T	94.4	98.6	- 4.2	17.6	130.5	119.7	10.8	116.6
U	95.4	103.3	- 7.9	62.4	115.6	91.8	23.8	566.4
V	102.0	93.1	8.9	79.2	108.6	112.8	- 4.2	17.6
W	103.7	98.1	5.6	31.4	99.2	100.4	- 1.2	1.4
X	105.3	102.6	2.7	7.3	103.1	98.4	4.7	22.1
Y	96.0	92.2	3.8	14.4	106.6	96.6	10.0	100.0
Z	105.8	105.9	- 0.1	.0	97.6	113.4	-15.8	249.7
AA	104.2	104.2	.0	.0	100.2	96.6	3.6	13.0
BB	105.6	95.9	9.7	94.1	116.7	122.0	- 5.3	28.1
CC	109.2	101.1	8.1	65.6	106.0	85.5	20.5	420.2
DD	107.7	108.2	- 0.5	.3	98.7	84.0	14.7	216.1
EE	91.4	90.4	1.0	1.0	103.6	90.8	12.8	163.8
FF	104.0	103.3	0.7	.5	100.0	90.3	9.7	94.0
GG	---	---	---	---	---	---	---	---
HH	106.1	101.6	4.5	20.2	106.4	92.4	14.0	196.0
II	111.0	110.2	0.8	.6	109.1	100.0	9.1	82.8
			78.8	1648.1			119.4	5120.7

APPENDIX B (continued)

ACQUIREES
(and paired companies)

No.	<u>Summary</u> <u>announcement to approval</u>				<u>Summary</u> <u>-3 months to approval</u>			
	Index X_1	Index X_2	$D=X_1-X_2$	D^2	Index X_1	Index X_2	$D=X_1-X_2$	D^2
A	122.4	93.8	28.6	818.0	107.5	110.7	- 3.2	10.2
B	153.2	134.5	18.7	350.0	174.0	129.8	44.2	1953.6
C	104.8	89.4	15.4	237.1	130.0	88.7	41.3	1705.7
D	101.9	82.2	19.7	388.1	102.9	123.4	-20.5	420.3
E	107.9	104.9	3.0	9.0	100.0	89.3	10.7	114.5
F	84.8	100.6	-15.8	249.6	84.1	120.5	-36.4	1325.0
G	109.7	107.4	2.5	6.3	181.0	134.0	47.0	2209.0
H	87.1	83.7	3.4	11.6	90.0	102.0	-12.0	144.0
I	107.9	106.1	1.8	3.2	125.1	101.0	24.1	580.0
J	91.9	92.9	- 1.0	1.0	73.1	87.9	-14.8	219.0
K	92.8	78.3	14.5	210.0	94.9	62.1	32.8	1075.8
L	125.3	101.8	23.5	552.3	159.3	94.5	65.0	4225.0
M	107.5	105.6	1.9	3.6	133.2	102.0	31.2	973.4
N	109.2	98.4	10.8	116.6	152.6	95.6	57.0	3249.0
O	113.3	113.9	- .6	.4	201.1	107.8	93.3	8704.9
P	108.0	112.9	- 4.9	24.0	141.2	119.3	21.9	479.6
Q	100.2	108.9	- 8.7	76.7	137.2	118.3	18.9	357.2
R	123.2	93.5	29.7	882.1	140.7	91.9	48.8	2381.4
S	91.9	102.3	-10.4	108.2	134.6	95.7	38.9	1513.2
T	135.4	119.7	15.7	246.5	152.4	107.6	44.8	2007.0
U	113.9	92.6	21.3	453.7	128.9	89.2	39.7	1576.1
V	107.6	112.8	- 5.2	27.0	129.1	106.1	23.0	529.0
W	105.9	98.5	7.4	54.8	125.1	94.6	30.5	930.3
X	110.5	102.6	7.9	62.4	134.4	96.0	38.4	1474.6
Y	101.1	90.8	10.3	106.1	107.9	105.6	2.3	5.3
Z	108.3	109.8	- 1.5	2.3	132.9	130.1	2.8	7.8
AA	107.8	95.5	12.3	151.3	136.6	99.1	37.5	1406.3
BB	111.8	119.0	- 7.2	51.8	131.7	102.9	28.8	829.4
CC	116.6	92.4	24.2	585.6	121.5	91.6	29.9	894.0
DD	115.3	88.1	27.2	739.8	114.3	93.5	20.8	432.6
EE	97.3	92.7	4.6	21.2	126.5	97.4	29.1	846.8
FF	104.6	92.6	12.0	144.0	140.3	101.2	39.1	1528.8
GG	104.2	93.7	10.5	110.2	118.1	78.9	39.2	1536.6
HH	123.5	92.7	30.8	948.6	147.5	97.7	49.8	2480.0
II	132.4	113.5	18.9	357.2	158.7	100.4	58.3	3398.9
			321.3	8110.3			1002.2	51524.3

APPENDIX C

RESULTS OF THE SIGNIFICANCE OF THE DIFFERENCE BETWEEN MEANS TEST

ACQUIRERS

Pre-Announcement

-9 months to -6 months

$$\bar{X}_D = +120.7 \quad \bar{X}_D^2 = 3836.7 \quad n = 35$$

$$\bar{X}_D = +3.45$$

$$\bar{X}_{D-0} = +3.45$$

$$S_D = 9.88$$

$$S_{\bar{X}_D} = 1.67$$

$$Z \cong \frac{\bar{X}_{D-0}}{S_{\bar{X}_D}} = +2.06$$

-6 months to -3 months

$$\bar{X}_D = -53.0 \quad \bar{X}_D^2 = 3748.0 \quad n = 35$$

$$\bar{X}_D = -1.51$$

$$\bar{X}_{D-0} = -1.51$$

$$S_D = 10.24$$

$$S_{\bar{X}_D} = 1.73$$

$$Z \cong \frac{\bar{X}_{D-0}}{S_{\bar{X}_D}} = -.87$$

-3 months to -1 month

$$\bar{X}_D = +80.8 \quad \bar{X}_D^2 = 2442.4 \quad n = 35$$

$$\bar{X}_D = +2.31$$

$$\bar{X}_{D-0} = +2.31$$

$$S_D = 8.03$$

$$S_{\bar{X}_D} = 1.36$$

$$Z \cong \frac{\bar{X}_{D-0}}{S_{\bar{X}_D}} = +1.70$$

-1 month to announcement

$$\bar{X}_D = -39.9 \quad \bar{X}_D^2 = 2442.4 \quad n = 35$$

$$\bar{X}_D = -1.14$$

$$\bar{X}_{D-0} = -1.14$$

$$S_D = 8.21$$

$$S_{\bar{X}_D} = 1.39$$

$$Z \cong \frac{\bar{X}_{D-0}}{S_{\bar{X}_D}} = -.82$$

APPENDIX C (continued)

Post-Announcementannouncement to +1 month

$$\sum D = -2.1 \quad \sum D^2 = 1287.6 \quad n = 35$$

$$\bar{X}_D = -.06$$

$$\bar{X}_{D-0} = -.06$$

$$S_D = 6.04$$

$$S_{\bar{X}_D} = 1.02$$

$$Z \cong \frac{\bar{X}_{D-0}}{S_{\bar{X}_D}} = -.058$$

+1 month to +2 months

$$\sum D = +12.9 \quad \sum D^2 = 1597.1 \quad n = 34$$

$$\bar{X}_D = +.379$$

$$\bar{X}_{D-0} = +.379$$

$$S_D = 5.7$$

$$S_{\bar{X}_D} = .96$$

$$Z \cong \frac{.379}{.96} = \frac{\bar{X}_{D-0}}{S_{\bar{X}_D}} = +.39$$

+2 months to approval

$$\sum D = +51.3 \quad \sum D^2 = 2836.9 \quad n = 32$$

$$\bar{X}_D = +1.60$$

$$\bar{X}_{D-0} = +1.60$$

$$S_D = 9.28$$

$$S_{\bar{X}_D} = 1.57$$

$$Z \cong \frac{\bar{X}_{D-0}}{S_{\bar{X}_D}} = +1.02$$

APPENDIX C (continued)

Post-Approvalapproval to +1 month

$$\sum D = +11.7 \quad \sum D^2 = 1937.7 \quad n = 35$$

$$\bar{X}_D = +33.4$$

$$\bar{X}_{D-0} = +33.4$$

$$S_D = 7.43$$

$$S_{\bar{X}_D} = 1.51$$

$$Z \cong \frac{\bar{X}_{D-0}}{S_{\bar{X}_D}} = +.22$$

+1 month to +3 months

$$\sum D = -45.5 \quad \sum D^2 = 1942.7 \quad n = 35$$

$$\bar{X}_D = -1.30$$

$$\bar{X}_{D-0} = -1.30$$

$$S_D = 7.26$$

$$S_{\bar{X}_D} = 1.22$$

$$Z \cong \frac{\bar{X}_{D-0}}{S_{\bar{X}_D}} = -1.06$$

+3 months to +6 months

$$\sum D = -19.8 \quad \sum D^2 = 3971.0 \quad n = 35$$

$$\bar{X}_D = -.57$$

$$\bar{X}_{D-0} = -.57$$

$$S_D = 10.64$$

$$S_{\bar{X}_D} = 1.80$$

$$Z \cong \frac{\bar{X}_{D-0}}{S_{\bar{X}_D}} = -.32$$

APPENDIX C (continued)

Summaryannouncement to approval

$$\bar{x}_D = +73.1 \quad \bar{s}_D^2 = 6256.4 \quad n = 35$$

$$\bar{x}_D = +2.09$$

$$\bar{x}_{D-0} = +2.09$$

$$S_D = 13.21$$

$$S_{\bar{x}_D} = 2.23$$

$$Z \cong \frac{\bar{x}_{D-0}}{S_{\bar{x}_D}} = +.94$$

-3 months to approval

$$\bar{x}_D = +138.3 \quad \bar{s}_D^2 = 8161.5 \quad n = 35$$

$$\bar{x}_D = +3.95$$

$$\bar{x}_{D-0} = +3.95$$

$$S_D = 14.75$$

$$S_{\bar{x}_D} = 2.49$$

$$Z \cong \frac{\bar{x}_{D-0}}{S_{\bar{x}_D}} = +1.59$$

-3 months to approval +1 month

$$\bar{x}_D = +141.9 \quad \bar{s}_D^2 = 10782.1 \quad n = 35$$

$$\bar{x}_D = +4.05$$

$$\bar{x}_{D-0} = +4.05$$

$$S_D = 17.08$$

$$S_{\bar{x}_D} = 2.89$$

$$Z \cong \frac{\bar{x}_{D-0}}{S_{\bar{x}_D}} = +1.40$$

-3 months to approval +6 months

$$\bar{x}_D = +122.4 \quad \bar{s}_D^2 = 16822.6 \quad n = 35$$

$$\bar{x}_D = +3.50$$

$$\bar{x}_{D-0} = +3.50$$

$$S_D = 21.64$$

$$S_{\bar{x}_D} = 3.74$$

$$Z \cong \frac{\bar{x}_{D-0}}{S_{\bar{x}_D}} = +.94$$

APPENDIX C (continued)

ACQUIREES

Pre-Announcement-9 months to -6 months

$$\Sigma D = +26.9 \quad \Sigma D^2 = 3048.2 \quad n = 35$$

$$\bar{X}_D = +.77$$

$$\bar{X}_{D-0} = +.77$$

$$S_D = 9.3$$

$$S_{\bar{X}_D} = 1.57$$

$$Z \cong \frac{\bar{X}_{D-0}}{S_{\bar{X}_D}} = +.49$$

-6 months to -3 months

$$\Sigma D = -136.5 \quad \Sigma D^2 = 4700.7 \quad n = 35$$

$$\bar{X}_D = -3.90$$

$$\bar{X}_{D-0} = -3.90$$

$$S_D = 11.01$$

$$S_{\bar{X}_D} = 1.86$$

$$Z \cong \frac{\bar{X}_{D-0}}{S_{\bar{X}_D}} = -2.10$$

-3 months to -1 month

$$\Sigma D = -170.3 \quad \Sigma D^2 = 5338.7 \quad n = 35$$

$$\bar{X}_D = +4.87$$

$$\bar{X}_{D-0} = +4.87$$

$$S_D = 11.35$$

$$S_{\bar{X}_D} = 1.92$$

$$Z \cong \frac{\bar{X}_{D-0}}{S_{\bar{X}_D}} = +2.54$$

-1 month to announcement

$$\Sigma D = +487.5 \quad \Sigma D^2 = 1581.6 \quad n = 35$$

$$\bar{X}_D = +13.93$$

$$\bar{X}_{D-0} = +13.93$$

$$S_D = 16.06$$

$$S_{\bar{X}_D} = 2.71$$

$$Z \cong \frac{\bar{X}_{D-0}}{S_{\bar{X}_D}} = +5.14$$

APPENDIX C (continued)

Post-Announcementannouncement to +1 month

$$\Sigma D = +89.4 \quad \Sigma D^2 = 2160.8 \quad n = 35$$

$$\bar{X}_D = +2.55$$

$$\bar{X}_{D-0} = +2.55$$

$$S_D = 7.43$$

$$S_{\bar{X}_D} = 1.26$$

$$Z \cong \frac{\bar{X}_{D-0} - \bar{X}_D}{S_{\bar{X}_D}} = +2.02$$

+1 month to +2 months

$$\Sigma D = +78.8 \quad \Sigma D^2 = +1648.1 \quad n = 34$$

$$\bar{X}_D = +2.32$$

$$\bar{X}_{D-0} = +2.32$$

$$S_D = 6.59$$

$$S_{\bar{X}_D} = 1.13$$

$$Z \cong \frac{\bar{X}_{D-0} - \bar{X}_D}{S_{\bar{X}_D}} = +2.05$$

+2 months to approval

$$\Sigma D = +119.4 \quad \Sigma D^2 = 5120.7 \quad n = 32$$

$$\bar{X}_D = +3.73$$

$$\bar{X}_{D-0} = +3.73$$

$$S_D = 12.09$$

$$S_{\bar{X}_D} = 2.04$$

$$Z \cong \frac{\bar{X}_{D-0} - \bar{X}_D}{S_{\bar{X}_D}} = +1.83$$

APPENDIX C (continued)

Summaryannouncement to approval

$$\Sigma D = +321.3 \quad \Sigma D^2 = 8110.3 \quad n = 35$$

$$\bar{X}_D = +9.18$$

$$\bar{X}_{D-0} = +9.18$$

$$S_D = 12.14$$

$$S_{\bar{X}_D} = 2.05$$

$$Z \cong \frac{\bar{X}_{D-0}}{S_{\bar{X}_D}} = +4.48$$

-3 months to approval

$$\Sigma D = +1002.2 \quad \Sigma D^2 = 51524.3 \quad n = 35$$

$$\bar{X}_D = +28.63$$

$$\bar{X}_{D-0} = +28.63$$

$$S_D = 25.54$$

$$S_{\bar{X}_D} = 4.31$$

$$Z \cong \frac{\bar{X}_{D-0}}{S_{\bar{X}_D}} = +6.62$$

APPENDIX D
CHARACTERISTICS OF COMPANIES IN THE EMPIRICAL STUDY

No.	Mergers	Index of Price Change 3 months before Announcement to Approval	
		Acquirer (1)	Acquiree
1	Midland Ross Corp.-Industrial Rayon Corp.	92.3 Other 101.5 DJIA 121.2	107.5 110.7
2	National Distillers and Chemical Corp.-Bridgeport Brass	110.6 Other 100.6 DJIA 117.3	174.0 129.8
3	Textron, Inc.-Spencer Kellogg and Son, Inc.	101.9 Other 104.8 DJIA 105.9	130.0 88.7
4	National Biscuit Co.-Cream of Wheat Corp. (The)	109.6 Other 99.9 DJIA 114.2	102.9 123.4
5	Ford Motor Co.-Philco Corp.	125.8 Other 106.7 DJIA 104.5	100.0 89.3
6	Mohasco Industries, Inc.-Firth Carpet Co.	89.9 Other 140.0 DJIA 100.0	84.1 120.5

APPENDIX D (continued)

No.	Terms of Trade-Consideration Paid by Acquirer for a Share of Acquiree Common Stock (2)	Market Value of Consideration Paid (3)	Market Value of Consideration Surrendered (4)
1	2/5ths of a share of common stock	\$20.8	\$18.375
2	1 35/100ths shares of common stock	35.1	22.125
3	6/7ths of a share of common stock	22.2	16.625
4	6/10ths of a share of common stock	44.3	36.625
5	2/9ths of a share of common stock	19.9	24.000
6	2/3rds of a share of common stock	7.3	7.875

APPENDIX D (continued)

No.	Ratio of Market Value Consideration Paid to Market Value Consideration Surrendered per Common Share (5)	Ratio of Market Value Paid to Book Value Surrendered per Common Share (6)	Ratio of Dividends Paid to Dividends Surrendered per Common Share (7)
1	1.13	.59	no dividends surrendered
2	1.59	.88	1.16
3	1.33	.59	1.34
4	1.21	4.12	.53
5	.83	.81	no dividends surrendered
6	.93	.48	no dividends surrendered

APPENDIX D (continued)

No.	Ratio of Earnings Paid to Earning Surrendered per Common Share	Relative Size of P/E Ratios <u>Acquirer</u> <u>Acquiree</u>	<u>Acquirer</u> <u>Post-Merger E.P.S.</u> <u>Pre-Merger E.P.S.</u>	<u>Acquirer</u> <u>Post-Merger P/E Ratio</u> <u>Pre-Merger P/E Ratio</u>
	(8)	(9)	(10)	(11)
1	negative earnings surrendered	negative P/E ratio	.73	1.34
2	1.57	1.0	.87	1.21
3	3.02	.4	.70	1.27
4	1.08	1.1	.97	1.21
5	3.66	.2	.96	.95
6	negative earnings surrendered	negative P/E ratio	1.72	.46

APPENDIX D (continued)

No.	Relative Size of Companies (Mkt. Value) <u>Acquiree</u> <u>Acquirer</u> (12)	Relative S & P Rankings			Evidence of Substantial Stockholder Dissent	
		Acquirer Higher (x)	Acquiree Higher (y)	The Same (z)	Acquirer	Acquiree
		(13)			(14)	
1	.96	X			No	Yes
2	.13	Z			No	No
3	.17	Z			No	No
4	.05	X			No	No
5	.02	X			No	No
6	.12	Z			No	Yes

APPENDIX D (continued)

No.	Pooling or Purchase Accounting (15)	Positive or Negative Movement of DJIA (16)
1	Pooling	Pos.
2	Pooling	Pos.
3	Purchase	Pos.
4	Pooling	Pos.
5	not definitely stated	Pos.
6	not definitely stated	Pos.

APPENDIX D (continued)

No.	Mergers	Index of Price Change	
		3 months before Announcement to Approval Acquirer	Acquiree (1)
7	Texaco, Inc.-TXL Oil Corp.	101.4 Other 92.3 DJIA	181.0 134.0 94.8
8	Consolidated Coal Co.-Truax-Traer Co.	91.4 Other 98.0 DJIA	90.0 102.0 99.3
9	Hooker Chemical Corp.-Parker Rust Proof Co.	109.6 Other 81.3 DJIA	125.0 101.0 104.7
10	Warner Lambert Pharmaceuticals Co.-American Chicle Co.	83.5 Other 73.6 DJIA	73.1 87.9 83.7
11	Air Reduction Co.-Pittsburgh Metallurgical Co.	87.4 Other 80.7 DJIA	94.9 62.1 104.1
12	Associated Cry Goods Corp.-Stix Baer and Fuller Co.	91.6 Other 85.0 DJIA	159.5 94.5 104.1
13	Cities Service Co.-Tennessee Corp.	126.4 Other 100.8 DJIA	133.2 102.0 109.9

APPENDIX D (continued)

No.	Terms of Trade-Consideration Paid by Acquirer for a Share of Acquiree Common Stock (2)	Market Value of Consideration Paid (3)	Market Value of Consideration Surrendered (4)
7	7/11ths of a share of capital stock	\$29.0	\$19.125
8	1 share of common stock	42.0	44.375
9	3/4ths of a share of common stock and 1/20th of a share of cumulative and preferred stock Sec. C.	32.3	25.875
10	12/100ths of a share of \$4.00 cum. conv. prd. stk. and 2.7 shares of common stock	70.6	81.875
11	43/100ths of a share of common stock	24.0	22.000
12	7/8ths of a share of common stock	45.5	25.625
13	9/10ths of a share of 2.25 cumu- lative preferred stock	54.0	37.625

APPENDIX D (continued)

No.	Ratio of Market Value Consideration Paid to Market Value Consideration Surrendered per Common Share (5)	Ratio of Market Value Paid to Book Value Surrendered per Common Share (6)	Ratio of Dividends Paid to Dividends Surrendered per Common Share (7)
7	1.52	4.54	no dividends surrendered
8	.95	2.11	.88
9	1.25	3.32	.50
10	.86	4.02	1.01
11	1.09	1.85	1.08
12	1.78	1.26	1.03
13	1.44	2.72	1.45

APPENDIX D (continued)

No.	Ratio of Earnings Paid to Earning Surrendered per Common Share	Relative Size of P/E Ratios <u>Acquirer</u> <u>Acquiree</u>	<u>Acquirer</u> <u>Post-Merger E.P.S.</u> <u>Pre-Merger E.P.S.</u>	<u>Acquirer</u> <u>Post-Merger P/E Ratio</u> <u>Pre Merger P/E Ratio</u>
	(8)	(9)	(10)	(11)
7	4.33	.4	1.09	.93
8	.96	1.0	1.09	.67
9	preferred stock involved	1.7	1.14	.70
10	preferred stock involved	.8	1.10	1.10
11	1.88	.6	1.12	.91
12	1.79	1.0	1.08	.86
13	preferred stock involved	.7	1.13	1.20

APPENDIX D (continued)

No.	Relative Size of Companies (Mkt. Value) <u>Acquiree</u> <u>Acquirer</u> (12)	Relative S & P Rankings			Evidence of Substantial Stockholder Dissent	
		Acquirer Higher (x)	Acquiree Higher (y)	The Same (z)	Acquirer	Acquiree
				(13)		(14)
7	.02			X	No	No
8	.17			X	No	No
9	.08			X	No	No
10	.212			Y	No	No
11	.11			X	No	No
12	.08			X	No	No
13	.28			Y	No	No

APPENDIX D (continued)

No.	Pooling or Purchase Accounting (15)	Positive or Negative Movement of DJIA (16)
7	Pooling	Neg.
8	Pooling	Neg.
9	Pooling	Pos.
10	Pooling	Neg.
11	Pooling	Pos.
12	not definitely stated	Pos.
13	not definitely stated	Pos.

APPENDIX D (continued)

No.	Mergers	Index of Price Change 3 months before Announcement to Approval	
		Acquirer	Acquiree (1)
14	Singer Manufacturing Co.-Friden, Inc.	117.9 Other 103.2 DJIA 110.1	152.6 95.6
15	Continental Oil Co.-American Agricultural Chemical Co.	129.1 Other 125.3 DJIA 108.9	201.1 107.8
16	Eaton Manufacturing Co.-Yale and Towne Manufacturing	107.0 Other 124.8 DJIA 113.9	141.2 119.3
17	Socony Mobil Oil Co.-Virginia Carolina Chemical Co.	96.6 Other 99.8 DJIA 104.3	137.2 118.3
18	Goodyear Tire and Rubber Co.-Motor Wheel Corp.	121.4 Other 107.8 DJIA 108.1	140.7 91.9
19	Ingersall Rand Co.-Pendleton Tool Industries, Inc.	106.3 Other 105.8 DJIA 108.2	134.6 95.7
20	Grace (W. R.) and Co.-Dubois Chemical, Inc.	123.4 Other 106.1 DJIA 114.2	152.4 107.6

APPENDIX D (continued)

No.	Terms of Trade-Consideration Paid by Acquirer for a Share of Acquiree Common Stock (2)	Market Value of Consideration Paid (3)	Market Value of Consideration Surrendered (4)
14	4/7ths of a share of capital stock	\$39.2	\$29.250
15	1 share of \$2 cumulative conv. preferred stock	55.0	23.250
16	3/4ths of a share of common stock and 1/4th of a share of 4 3/4% cumulative convertible preferred stock	32.3	22.750
17	1 2/10ths shares of capital stock	78.6	55.125
18	2/3rds of a share of common stock	23.5	20.250
19	1/3rd of a share of common stock	13.0	17.000
20	51/100ths of a share of common stock	22.4	17.875

APPENDIX D (continued)

No.	Ratio of Market Value Consideration Paid to Market Value Consideration Surrendered per Common Share	Ratio of Market Value Paid to Book Value Surrendered per Common Share	Ratio of Dividends Paid to Dividends Surrendered per Common Share
	(5)	(6)	(7)
14	1.34	2.92	2.43
15	2.37	2.05	2.00
16	1.42	1.04	1.65
17	1.43	2.00	no dividends surrendered
18	1.16	.80	1.68
19	.76	.69	.83
20	1.25	5.17	.85

APPENDIX D (continued)

No.	Ratio of Earnings Paid to Earning Surrendered per Common Share	Relative Size of P/E Ratios <u>Acquirer</u> <u>Acquiree</u>	<u>Acquirer</u> <u>Post-Merger E.P.S.</u> <u>Pre-Merger E.P.S.</u>	<u>Acquirer</u> <u>Post-Merger P/E Ratio</u> <u>Pre-Merger P/E Ratio</u>
	(8)	(9)	(10)	(11)
14	1.29	1.0	1.14	1.21
15	preferred stock involved	1.5	1.20	1.18
16	preferred stock involved	1.1	1.20	1.07
17	1.18	1.2	1.09	1.08
18	1.41	.8	1.21	1.01
19	.46	1.7	1.12	.94
20	1.03	1.2	1.13	1.15

APPENDIX D (continued)

No.	Relative Size of Companies (Mkt. Value) Acquiree Acquirer (12)	Relative S & P Rankings Acquirer Higher (x) Acquiree Higher (y) The Same (z) (13)	Evidence of Substantial Stockholder Dissent Acquirer Acquiree (14)	
14	.19	Z	No	Yes
15	.04	X	No	No
16	.30	X	No	No
17	.01	X	No	No
18	.01	X	No	No
19	.02	X	No	No
20	.09	X	No	Yes

APPENDIX D (continued)

No.	Pooling or Purchase Accounting (15)	Positive or Negative Movement of DJIA (16)
14	Pooling	Pos.
15	Pooling	Pos.
16	Pooling	Pos.
17	Pooling	Pos.
18	not definitely stated	Pos.
19	Pooling	Pos.
20	Pooling	Pos.

APPENDIX D (continued)

No.	Mergers	Index of Price Change 3 months before Announcement to Approval	
		Acquirer (1)	Acquiree
21	Thompson Ramo Woolridge-Marlin Rockwell Corp.	99.3 Other 85.7 DJIA 110.9	128.9 89.2
22	Federated Department Stores-Bullocks', Inc.	118.6 Other 130.0 DJIA 112.2	129.1 106.1
23	Phillips Petroleum Co.-Sealright Oswego Falls Corp.	104.6 Other 103.3 DJIA 106.4	125.1 94.6
24	Celanese Corp. of America-Champlin Oil and Refining Co.	99.5 Other 102.7 DJIA 106.2	134.4 96.0
25	Interlake Iron Corp.-Acme Steel Corp.	111.2 Other 97.4 DJIA 104.9	107.9 105.6
26	Gamble Skogmo, Inc.-Aldens, Inc.	109.9 Other 111.3 DJIA 103.9	132.9 130.1
27	Borden Co.-Smith Douglas Co., Inc.	109.0 Other 102.7 DJIA 104.7	136.6 99.1
28	Litton Industries, Inc.-Royal McBee Corp.	105.3 Other 106.5 DJIA 111.2	131.7 102.9

APPENDIX D (continued)

No.	Terms of Trade-Consideration Paid by Acquirer for a Share of Acquiree Common Stock (2)	Market Value of Consideration Paid (3)	Market Value of Consideration Surrendered (4)
21	1/4th of a share of common stock and 1/4th of a share of cumulative preferred stock	\$39.5	\$30.250
22	1 4/10ths shares of common stock	76.1	68.750
23	6/10ths of a share of common stock	30.7	24.875
24	2/3rds of a share of common stock	46.4	34.125
25	7/10ths of a share of common stock	20.3	20.500
26	1 share of 1.60 convertible preferred stock	38.6	27.000
27	9/10ths of a share of capital stock and 0.12 cash	63.9	50.500
28	.16875 of a share of \$3 cum. con. ser. A preferred stock	15.4	12.625

APPENDIX D (continued)

No.	Ratio of Market Value Consideration Paid to Market Value Consideration Surrendered per Common Share (5)	Ratio of Market Value Paid to Book Value Surrendered per Common Share (6)	Ratio of Dividends Paid to Dividends Surrendered per Common Share (7)
21	1.31	1.79	1.18
22	1.11	2.42	1.14
23	1.23	1.23	1.00
24	1.36	2.10	.76
25	.99	.83	1.40
26	1.43	1.96	1.60
27	1.26	2.31	1.37
28	1.22	.71	no dividends surrendered

APPENDIX D (continued)

No.	Ratio of Earnings Paid to Earning Surrendered per Common Share	Relative Size of P/E Ratios <u>Acquirer</u> <u>Acquiree</u>	<u>Acquirer</u> Post-Merger E.P.S. Pre-Merger E.P.S.	<u>Acquirer</u> Post-Merger P/E Ratio Pre-Merger P/E Ratio
	(8)	(9)	(10)	(11)
21	preferred stock involved	1.2	1.26	.95
22	.98	1.1	1.23	1.06
23	.84	1.5	1.10	.98
24	.89	1.5	1.30	.99
25	1.17	.9	1.10	1.11
26	preferred stock involved	1.2	1.42	.68
27	cash involved	1.4	1.14	1.06
28	preferred stock involved	2.1	1.24	1.00

APPENDIX D (continued)

No.	Relative Size of Companies (Mkt. Value) <u>Acquiree</u> <u>Acquirer</u> (12)	Relative S & P Rankings			Evidence of Substantial Stockholder Dissent	
		Acquirer Higher (x)	Acquiree Higher (y)	The Same (z)	Acquirer	Acquiree
		(13)			(14)	
21	.21	X			No	No
22	.19	Z			No	Yes
23	.02	X			No	No
24	.24	X			No	No
25	.76	X			No	No
26	.60	Y			No	No
27	.07	X			No	No
28	.03	X			No	No

APPENDIX D (continued)

No.	Pooling or Purchase Accounting (15)	Positive or Negative Movement of DJIA (16)
21	Pooling	Pos.
22	Pooling	Pos.
23	Pooling	Pos.
24	Pooling	Pos.
25	Pooling	Pos.
26	Pooling	Pos.
27	Pooling	Pos.
28	not definitely stated	Pos.

APPENDIX D (continued)

No.	Mergers	Index of Price Change	
		3 months before Announcement to Acquirer	Approval Acquiree (1)
29	Georgia Pacific Corp.-Bestwall Gypsum Co.	116.5 Other 109.9 DJIA	121.5 91.6 105.0
30	Pepsi Cola Co.-Frito-Lay, Inc.	126.3 Other 96.9 DJIA	114.0 93.5 100.5
31	Armour and Company-Baldwin-Lima-Hamilton Corp.	73.6 Other 85.5 DJIA	126.5 97.4 99.5
32	Bristol-Myers Co.-Drackett Co.	119.9 Other 96.5 DJIA	140.3 101.2 100.4
33	Lone Star Cement Corp.-Pacific Cement and Aggregates	85.7 Other 89.3 DJIA	118.1 78.9 99.0
34	American Home Products Corp.-EKCO Products Co.	109.3 Other 97.4 DJIA	147.5 97.7 102.0
35	Caterpillar Tractor Co.-Towmotor Corp.	104.9 Other 118.0 DJIA	158.7 100.4 103.8

APPENDIX D (continued)

No.	Terms of Trade-Consideration Paid by Acquirer for a Share of Acquiree Common Stock (2)	Market Value of Consideration Paid (3)	Market Value of Consideration Surrendered (4)
29	1 share of a \$1.64 convertible preferred stock	\$42.8	\$36.125
30	2/3rds of a share of capital stock	39.1	41.125
31	13/100ths of a share of \$4.75 cumulative preferred stock and 1/6th of a share of common stock	20.8	14.125
32	46/100ths of a share of common stock	30.9	24.500
33	2.25/10ths of a share of \$4.50 cumulative convertible Series A preferred stock	20.8	15.875
34	1 share of \$2 convertible pre- ferred stock	63.4	42.375
35	1 share of common stock	46.4	30.500

APPENDIX D (continued)

No.	Ratio of Market Value Consideration Paid to Market Value Consideration Surrendered per Common Share (5)	Ratio of Market Value Paid to Book Value Surrendered per Common Share (6)	Ratio of Dividends Paid to Dividends Surrendered per Common Share (7)
29	1.18	1.92	1.37
30	.95	4.09	1.11
31	1.47	.80	2.23
32	1.26	8.54	1.23
33	1.31	1.31	1.68
34	1.50	3.89	1.43
35	1.52	3.04	1.00

APPENDIX D (continued)

No.	Ratio of Earnings Paid to Earning Surrendered per Common Share	Relative Size of P/E Ratios <u>Acquirer</u> <u>Acquiree</u>	<u>Acquirer</u> <u>Post-Merger E.P.S.</u> <u>Pre-Merger E.P.S.</u>	<u>Acquirer</u> <u>Post-Merger P/E Ratio</u> <u>Pre-Merger P/E Ratio</u>
	(8)	(9)	(10)	(11)
29	preferred stock involved	1.4	1.08	1.00
30	1.06	.9	1.15	1.12
31	preferred stock involved	.4	.69	1.90
32	.87	1.4	1.21	1.22
33	preferred stock involved	1.3	1.04	.86
34	preferred stock involved	1.7	1.17	1.09
35	.82	1.9	1.24	.70

APPENDIX D (continued)

No.	Relative Size of Companies (Mkt. Value) Acquiree Acquirer (12)	Relative S & P Rankings			Evidence of Substantial Stockholder Dissent	
		Acquirer Higher (x) Acquiree Higher (y) The Same (z) (13)			Acquirer	Acquiree (14)
29	.12	X			No	No
30	.47	X			No	No
31	.20	X			No	Yes
32	.15	X			No	No
33	.37	X			No	No
34	.07	X			No	No
35	.02	X			No	No

APPENDIX D (continued)

No.	Pooling or Purchase Accounting (15)	Positive or Negative Movement of DJIA (16)
29	Pooling	Pos.
30	Pooling	Pos.
31	not definitely stated	Neg.
32	Pooling	Pos.
33	Pooling	Neg.
34	Pooling	Pos.
35	Pooling	Pos.

VITA

Stanley Byron Block was born in Corpus Christi, Texas on October 4, 1939. He was graduated from W. B. Ray High School in Corpus Christi in June, 1957 and attended the University of Texas where he received a Bachelor of Business Administration degree in June, 1961. His major field of study was Finance, and he placed in the upper quarter of his class.

He resumed his education at Cornell University in September, 1962 and was awarded a Master of Business Administration degree in June, 1964. His primary fields were Business Operations and Finance, and he ranked in the top quarter of his class. Since that time, he has attended Louisiana State University pursuing a Doctor of Philosophy Degree in Business Finance.

The writer has been employed by the Department of Business Finance and Statistics at Louisiana State University from 1965 through 1967. He also served as a Financial Analyst for Texas Instruments, Inc. in the summer of 1965. The writer plans to pursue a career in college teaching.

EXAMINATION AND THESIS REPORT

Candidate: Stanley Byron Block

Major Field: Business Finance

Title of Thesis: THE EFFECT OF MERGERS AND ACQUISITIONS ON THE MARKET
VALUE OF COMMON STOCK

Approved:

Donald E. Vaughn
Major Professor and Chairman

Max Goodrich
Dean of the Graduate School

EXAMINING COMMITTEE:

Roger L. Buford

L. G. Morrison

Lee Richardson

Don E. Woodland

Date of Examination:

August 8, 1967