

THE PORTFOLIO CONCEPT AND SYSTEMATIC  
RISK: AN ANALYSIS OF DIVESTITURES

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Bachelor of Arts

Tulane University

1973

Submitted to the Faculty of the Graduate College  
of the Oklahoma State University  
in partial fulfillment of the requirements  
for the Degree of  
MASTER OF BUSINESS ADMINISTRATION  
May, 1981

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Date of Degree: May, 1981

Institution: Oklahoma State University Location: Stillwater, Oklahoma

Title of Study: Risk and Divestiture

Pages of Study: 51

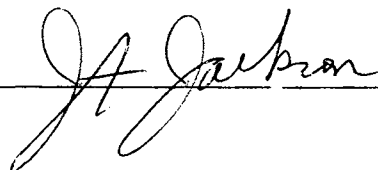
Candidate for Degree of Master  
of Business Administration

Major Field: Finance/Management

Scope of Study: This study is concerned with the divestiture of divisions or subsidiaries of corporations. The various types of divestitures are identified with the possible reasons for their use. The three merger waves witnessed by the U.S. economy are reviewed with their relationship to the use of divestitures by conglomerates. Additionally the recent increase in the frequency of divestitures is discussed along with the change in the economic environment attributed as the cause of this increase. The purpose of this report is to examine one of corporate management's intentions for a divestment; namely, the improvement of financial performance. This improvement can result from the reduction of investor risk. The beta coefficient, as a measure of systematic risk, was obtained for the divesting company, the acquiring company, and the divested unit for a sample of 30 divestitures. A paired-comparison analysis was done to test the hypothesis that risk reduction serves as a motive for divestiture. Specifically the hypothesis could be accepted if the beta of divesting firms were observed as significantly greater than divested units. Also, if the divested units' betas were greater than the acquiring firms', then the second hypothesis that the motive for the purchase of the unit is other than risk reduction could be accepted.

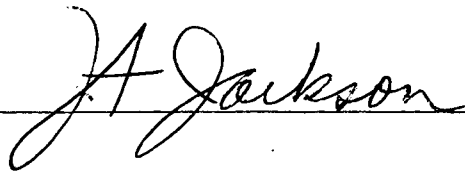
Findings of Study: It was found in this sample of divestitures that the betas of the divesting firms were not significantly different from the divested unit betas, while the divested unit betas were found to be significantly greater than the acquiring firm betas at the .0058 level of significance. Also, the betas of divesting firms were significantly greater than the betas of acquiring firms. Therefore, it is concluded that systematic risk does not play a major role as a motive for divestiture in the case of the divesting corporations. The acquiring corporations, in purchasing divested units with greater risk, is construed as being motivated by the expectation of increased earnings.

ADVISER'S APPROVAL \_\_\_\_\_

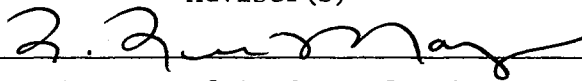


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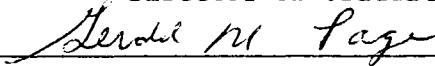
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## PREFACE

This study is concerned with the divestiture of divisions, product lines and subsidiaries of U.S. corporations. The various types and methods of divestiture are discussed along with the numerous reasons corporate managers give for divestitures. The problems of empirical research specific to the divestiture phenomenon are illustrated with special emphasis on the loss of financial performance information of the divested unit once it is sold. The primary objective of this study is to examine the possibility that reduction of systematic risk can serve as a major motive for divestitures through the analysis of beta coefficient values obtained for the divesting firms, selling firms and divested units involved in a sample of 30 divestitures covering a period of 1952 through 1978.

The author wishes to express his appreciation to his major adviser, Dr. James F. Jackson for his guidance, patience and assistance throughout this study.

A note of thanks is also given to Mrs. Irene Larson for the excellence of the final copy of this report.

And finally, a special thanks for my parents, Mr. and Mrs. Jon B. Wagner for their continuous support and encouragement throughout my education.

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## CHAPTER I

### INTRODUCTION

#### Definitions of Divestment

As with many terms in the world of business, divestitures can represent many different forms of activity. A divestiture may involve an entire division or subsidiary of a parent firm or a product line or service that may or may not comprise a complete business with facilities that are separate and distinct from those utilized in the other company operations.

Some of the more inventive forms of divestitures are spin-offs, split-offs and split-ups: The spin-off is a distribution by a parent corporation of the stock of a subsidiary to the shareholders of the parent where the shareholders now hold stock in both the parent and the subsidiary; the split-off is the exchange by the parent of stock of a subsidiary for the stock of the parent which is technically a repurchase of the parent's stock; and the split-up is the distribution by the parent of the stock of all its subsidiaries which is technically a liquidation.

Divestment, as considered in this paper, is the process of eliminating a portion of the enterprise and the subsequent use of the resources which are freed for some other purpose. A divestment takes place when there is a disposal of company assets or entire divisions or subsidiaries, as well as the discontinuance of an activity which has

which had been associated with those assets. Thus divestment occurs when there is a complete cessation of a part of the enterprise and the disposition of some, or all, of the facilities connected with it by sale or transfer. Divestment may concern a manufacturing operation, a marketing activity, or a research function, as well as the facilities and personnel attached to it. It is neither the sale of the entire company nor the shutting down or closing of all or a portion of a company. Following the divestment, the divesting company continues as a distinct, viable business entity.

#### The Divestment Process

The forms and manner of payment for divestitures are as diverse as in the mergers and acquisitions area which is limited only by a few government regulations and managements' imagination. The spin-off, split-off, and split-up, mentioned above, are facilitated by the exchange of stock between parties but divestitures may also be classified as a sale of assets. There are advantages to either manner of transaction which are too numerous to be covered adequately here. The instruments used for payment have involved cash, notes, common and preferred stock, an exchange of assets, and any combination of these instruments.

The purchasers of divested divisions or subsidiaries are also quite diverse. Although most divestments are sold to other corporations, management of the divested unit often are the purchasers through what is termed a "management buyout" which is usually financed by the selling corporation. Even the employees can get into the act through the government-subsidized Employee Stock Ownership Trust plan. The purchasers may also include more than one corporation through a joint venture or



consortium. For example, Kennecott Copper Incorporated sold its Peabody Coal subsidiary for \$1.2 billion to a group of seven corporations consisting of mining concerns, an insurance firm, and even an Australian holding company.<sup>1</sup>

The price of a divestment can be quite large as well as the possible capital gains or losses from the sale to the divesting firm as witnessed by the sale of the Texas Pacific Oil subsidiary of Seagram Company Limited to Sun Oil Company for \$2.3 billion which was more than eight times the price Seagram originally paid for it.<sup>2</sup>

Many government agencies can involve themselves in divestments. This usually occurs because of the possible anticompetitive/antitrust ramifications of a divestment concerning the acquiring firm. But the government itself may be the initiator of the sale by the use of forced divestiture. The agencies involved consist of the Antitrust Division of the Justice Department, the Securities and Exchange Commission, and the Federal Trade Commission.

#### Acquisitions and Divestments

Historically, corporate use of acquisitions has played an important role in the development of the divestment option because in one sense, the relation between divestment and acquisition is direct and obvious: nearly every divestment is an acquisition for someone else. Additionally, many companies today are divesting and acquiring divisions or subsidiaries simultaneously, for example, the Signal Companies divested themselves of Signal Oil and Gas, Inc., in 1974 and immediately purchased controlling interest in Universal Oil Products, Inc.<sup>3</sup>

While acquisition and divestiture share certain characteristics,

their differences are both numerous and crucial, and they require different approaches, different kinds of information, different methods of analysis, and different management practices.

Moreover, they are negotiated in a completely different psychological atmosphere. For one thing, unlike an acquisition, a divestiture can immediately hurt. It can hurt financially because the divesting company may be penalizing its income statement to strengthen its balance sheet, which is usually less visible to the investing public. It hurts emotionally, because it is always possible that a divestiture can reflect a mistake in judgment or incompetence on somebody's part.

Second, a divestiture decision is one of the least reversible decisions management can make. An acquiring company, on the other hand, has at least some time and space for maneuver, and can take variety of actions that will enhance the future profitability of an acquisition. Divestiture is the antithesis of an expansion move and is a way out of a problem.

Third, the risks and rewards in a divestiture are different. A purchaser of a division usually takes a risk in the expectation that he can get more out of his purchase than he paid for it. Some of the sellers, on the other hand, may want to reduce operating losses, reduce implicit opportunity losses, reduce investment requirements, or reduce their risk. Additionally, the degree of uncertainty in valuation differs because the acquiring corporation must only decide the value of a prospective acquisition to himself, whereas the divestor must decide not only the value to himself but the value to someone else as well.

Acquisitions are intimately related with divestitures in many ways. A corporation may be forced by the government under the auspices of

antitrust to divest itself of some business before acquiring another one. This was the case when International Telephone and Telegraph Incorporated indicated its plans to acquire Hartford Fire Insurance Company. The Justice Department agreed to allow the acquisition only if ITT would divest itself of a number of its existing operations including Avis-Rent-A-Car System and Automatic Canteen Company.<sup>4</sup>

A divestment may be the result of a preconceived plan to acquire a business and then later divest itself of those activities not wanted or needed, either because they are duplicated in the buying firm or they are not related to the major line of business. It is understandable that a firm would pursue an acquisition policy of acquiring only those segments of another firm which it actually intends to make a permanent addition to its own business. But this may not always be possible since quite often the seller wishes to unload a "package" including all its unwanted activities, and will sell only on this basis.<sup>5</sup> Sometimes the need for divestment of a portion of an acquisition is recognized at the time of acquisition and immediate steps are taken to divest, but often, the unwanted activity is passed along as part of the acquisition and left to flounder until new management steps in. Such was the case when PepsiCo, Inc., acquired Frito-Lay, Inc., which had a small condiment operation that was unrelated to both distribution systems. This unit was divested only after several years of mediocre performance.<sup>6</sup>

Corporate directors sometimes divest segments of their own companies or parts of an acquired business to finance specific acquisitions. Lovejoy illustrates how one management accomplished this.

Company A agreed to pay \$5,800,000 to acquire Company B. A 10% down payment was made at the time of the purchase, with the rest to be paid over a number of years. Retirement of

this debt was assisted by nonrecurring profits of over \$1,000,000 from the sale of Company A of Company B's inventory; about \$400,000 in cash obtained through the sale by A of part B's plant, property, and equipment; and a \$600,000 tax loss as an offset to Company A's profits.

What has been occurring recently is an increase in divestitures of businesses which had been obtained originally by a company as part of an ambitious acquisition program. Quite often such companies end up acquiring a collection of unrelated, unprofitable products and businesses for which too high a price is paid. Later, it is frequently necessary to devote a major portion of the company resources to rehabilitate these acquisitions. In some cases, these rehabilitation efforts are unsuccessful and, in the end, divestment becomes the only possible solution to the problem. Some firms, especially the so-called "conglomerates", find that they have expanded too fast and in too many directions at once, and thus have overextended their managerial and financial resources. In the process of implementing a program of mergers and acquisitions, it is easy to gather a portfolio of businesses which are unrelated or possess weak managements. The job of assimilating these operations can result in massive problems. Frequently, the assimilation can be facilitated when the less promising ventures are divested, so that major effort can be devoted to those with the greatest promise.

In many acquisitions the divested unit's management team will stay with the unit or be assimilated into the buying firm's organization. Boyle's research emphasizes this point by showing that top management of the acquired unit stayed on indefinitely in 51 percent of the acquisitions studied.<sup>8</sup> This results in having key positions in a subsidiary filled by people who were outsiders and not recruited in the usual manner. This could lead to eventual divestment of the unit because of incompatible

managements as Bing states:

In far more cases than the participants realize or are ever willing to admit, the reasons for a subsidiary's difficulties, failures, and eventual sale are personality clashes and communication problems between subsidiary management and the management of the parent company.<sup>9</sup>

Several empirical tests have shown that firms that have grown by use of acquisitions use significantly more amount of leverage than any other type firm.<sup>10</sup> In many cases divestment has been used as a strategy to reduce this high debt level. Ling-Tempco-Vought, Inc., has divested a vast amount of its subsidiaries in the past to reduce debt that was costing over one million dollars a week. Westinghouse sold many of its business units, including the well-documented sale of its appliance business to White Consolidated Industries, to lower its debt from 1.1 billion dollars to 453 million dollars.

Although there is a vast array of reasons that corporations may purport for their divestitures, the objective here is to present an introduction to many of the possible relationships between acquisitions and divestitures. The literature review will delineate further these relationships, such as a possible causal relation between the two phenomena. Although the subject of this study is divestments, it is impossible to cover this subject without taking note of the area of acquisitions.

#### Lack of Divestment Information and Literature

Although there has been a proliferation of empirical research and general literature about acquisitions and mergers, relatively little has been written about the related field of divestitures. This dearth of information is curious when one considers the emotional content and ethical questions involved in divestitures as well as the ramifications it

holds for management.

The major reason that mergers and acquisitions have received so much attention is the continuing interest by legislators in the economic concentration of industries that may be correlated to merger activity. This raises the issues of monopoly and the legislature's antitrust activities.

But before more empirical research can be done on the divestiture phenomenon some significant informational barriers have to be overcome. The first informational barrier is management's concern for secrecy during the pre-divestment and post-divestment periods. Hayes and Lovejoy<sup>11</sup> give several reasons for this secrecy, but the main reasons involve the negative effects that this information can have on distributors, stockholders, and employees, as well as the aid that divestment information can give to competitors. Also, the aura of failure that has surrounded divestment proceedings in the past have made top management reluctant to talk about their divestment activity. Sometimes the top men in the division being sold are unaware that their unit is being considered for divestment.

The second barrier is the absence of meaningful financial data on a divestment candidate, be it product line, corporate division, or even subsidiary. Boyle devotes an entire chapter of his study to this information loss from conglomerate expansion.<sup>12</sup> His study reveals the economic implications of the loss of financial information of businesses that have been acquired by conglomerate firms. These corporations' financial statements leave outsiders with little indication of how divisions and individual product markets are performing.

Once a division or subsidiary has been divested or acquired, it is

almost impossible for corporate outsiders to get any useful information concerning rates of return, individual balance sheet and income figures, or even the transaction price, if the parent corporations are not willing to disclose. The very information most needed for empirical research in its most detailed form is practically eliminated by the transaction itself.

The implications of the loss of financial performance information of corporate divisions and subsidiaries are evident if the assumption for an efficiently functioning capital market is that resources will be allocated to their most efficient use. For the market to allocate resources among competing uses, accurate and timely information concerning these uses must be available to the market participants. Without this information, investors are unable to make rational decisions and management incompetence goes undetected. Additionally, free competition is abated because possible entrants do not have the detailed information needed to decide if it will be profitable to enter specific sectors of industries.

The only known empirical study that was able to cultivate any financial information from large, conglomerate corporations about their individual product lines and divisions was a study by Stanley Boyle.<sup>13</sup> This was possible only because Boyle was commissioned by the Federal Trade Commission which required the nine corporations to cooperate with him. Boyle's focus was on conglomerate performance and not divestitures.

The lack of empirical research on the divestiture phenomenon holds the same implications as the lack of performance information with one exception: It is assumed that management has enough internal financial performance information to make rational resource allocation decisions,

the point is that they do not make this information available to outsiders. The lack of empirical research inhibits the ability to compare management performance and market performance.

### Purpose of Study

It is intended that this empirical study will add to the much needed body of information and research on divestitures. Specifically, this study intends to develop information about the parties involved in a divestiture: the acquiring firm, selling firm, and divested division or subsidiary. Through the analysis of market rates of return of the three entities, it is possible to see if there are any strategies common to all selling firms in the process of divestment as well as strategies common to all acquiring firms. Also it is possible to compare strategies of acquiring firms and selling firms involved in the divestments. The strategies in question are portfolio management and financial management. These strategies will be discussed later in the concept of the study.

### Summary

The next chapter will review the literature on the subject of divestitures and areas related to divestitures. Chapter three will discuss the concept of the study, methodology, and analysis of the data. Chapter four will cover the findings of the research and conclusions drawn from these findings.



## END NOTES

<sup>1</sup>"Corporate Selloff", Mergers and Acquisitions, Vol. 12, (Fall 1977), p. 48.

<sup>2</sup>"Wall Street's New Fashion", Time, August 25, 1980, p. 61.

<sup>3</sup>Julie Connelly, "Why Corporate Divestitures Are Becoming Respectable", Institutional Investor, Vol. 10, (March 1976), p. 40.

<sup>4</sup>L. Vignola, Strategic Divestment, New York: AMACOM, 1974, p. 40.

<sup>5</sup>F. A. Lovejoy, Divestment for Profit, New York: Financial Executive Research Foundation, 1971, p. 203.

<sup>6</sup>Vignola, p. 12.

<sup>7</sup>Lovejoy, p. 204.

<sup>8</sup>Stanley E. Boyle and P. W. Jaynes, Conglomerate Merger Performance: An Empirical Analysis of Nine Corporations, Bureau of Economics, Federal Trade Commission, Washington, D.C.: U.S. Government Printing Office, 1972, p. 196.

<sup>9</sup>Gordon Bing, Corporate Divestment, Houston: Gulf Publishing Co., 1978, p. 95.

<sup>10</sup>S. K. Mansinghka and J. Fred Weston, "Tests of the Efficiency Performance of Conglomerate Firms", Journal of Finance, September 1971, p. 927  
R. W. Melicher and D. F. Rush, "The Performance of Conglomerate Firms: Recent Risk and Return Experience", Journal of Finance, May 1973, p. 387.

<sup>11</sup>Robert H. Hayes, "New Emphasis on Divestment Opportunities", Harvard Business Review, Vol. 50 (July 1972), pp. 55-64; Lovejoy, p. 108.

<sup>12</sup>Boyle and Janes, pp. 105-130.

<sup>13</sup>Ibid.

## CHAPTER II

### LITERATURE REVIEW

#### Introduction

Some of the causes of a recent increase in the frequency of divestitures is discussed in this chapter, such as, the changes in peculiarities of the tax laws and corporate financial reporting requirements of the Securities and Exchange Commission. Other economic and structural changes are reviewed as possible causes of the recent increase in divestitures.

The divestment phenomenon will be reviewed in its historical perspective as it relates to the three merger waves witnessed by the U.S. economy.

But the major point that will be brought out in this chapter is that a change in managerial philosophy has gradually occurred. Numerous corporations have engaged in seemingly frenzied merger activity starting in the late 1950s and continuing into the 1980s. But corporate management has now become more cautious about its ability to manage a disarray of somewhat unrelated business activities. The portfolio concept is now being applied more and more to corporations by management as a constant performance review of subunits of the corporation. The goal of this is to better refine the organization in the interrelatedness of these subunits. Divestiture has now lost its stigma as a show of failure and is now seen as a viable method of improving the portfolio

of divisions, subsidiaries, and product lines.

### Merger Waves and Divestitures

As already noted, there are many possible relationships between acquisitions and divestitures. Many authors purport that there may even be a causal relation between them as the merger/acquisition boom of the late 1960s frequently has been cited as the ultimate cause of heavy divestment activity of the 1970-1980 period.<sup>1</sup> These authors generally agree that in the 1960s, moderate liquidity, high price-earnings ratios, liberal accounting rules, and a buoyant economy and stock market have been the major factors of increased merger activities in the 1960s.<sup>2</sup> Hayes states this increased divestment activity represents a "merger aftermarket", which is the market in those operating units or divisions which are part of an acquired company but do not fit the strategy and structure of the acquiring company.<sup>3</sup> Duhaime and Patton state that the "frenzied" merger/acquisition activity of the late 1960s resulted in poor analysis of acquisition candidates, which is the cause of heavy divestments in the 1970s.<sup>4</sup>

It has been well established that the U.S. economy has witnessed three periods of increasing merger activity or merger "waves".<sup>5</sup> If increased merger activity is thought to cause a period of increased divestment or merger aftermarket, then it may be plausible that each merger wave in history has been followed by a divestment wave. Therefore, at this point each merger wave will be briefly discussed with a look at their relations to divestitures. Most of this historical review is from Samuel Reid's book on mergers and the economy.<sup>6</sup>

### The First Merger Wave

The first merger wave centered around the period 1898-1902. This event has been referred to by many as a "classical era in economic development." The action in this movement was extensive and rapid since this was the shortest major merger wave on record. During this five-year wave there were 2,653 reported mergers, with 1,208 mergers reported in 1899 alone. Reid states that "there were 318 important industrial consolidations in existence in 1903, of the total, 236 had been formed since the beginning of 1898."<sup>7</sup> Most students of this period agree that it was the classical era of consolidations. Consolidations in this context means an amalgamation or fusion of two or more firms into a new firm with a different capital structure. It is generally considered the consolidation or "many-at-once" form of merger occurred more often than the acquisition which is a "one-at-a-time" form of merger where generally a larger firm absorbs a smaller firm and the larger firm retains its identity. During this period, consolidations dominated the merger activity of all but one of the two-digit industries. Since many of these consolidations were comprehensive in nature, encompassing large numbers of firms in the same industry, it is reasonable to conclude that the majority of mergers were horizontal.<sup>8</sup>

A horizontal merger is considered one involving firms which are engaged principally in the same industry whether or not in the same geographic location. The motive for the majority of these consolidations was attaining monopolies within industries. Moody studies 92 large industrial mergers of this period and found that 78 of these mergers controlled 50 percent or more of the output of their industry, and 26 controlled 80 percent or more.<sup>9</sup> It is interesting to note that most

literature on this era agrees that the outside professional promoter played a dominant role in initiation and consummation of the merger.<sup>10</sup> Although management has always been involved in the merger activity, this first era saw most of the aggressive actions being taken by promoters motivated by personal gain resulting from the consummated merger.

In contrast to the current situation, in which stock ownership is diverse, during this first period, individuals possessed large blocks of stock as well as a high percentage of ownership of a firm. The major forces lending to increased merger activity in this first and all subsequent merger waves was an increase in speculation in asset values, excessive demand for securities lending to increased stock prices and a prosperous economy.

Reid summarizes the factors peculiar only to the first merger wave which enhanced merger formation.

The leading factors . . . appeared to be the newly achieved development of a broad and strong capital market, and the existence of institutions which enabled organizers of mergers to use this market. The favorable business conditions made practicable larger units of business enterprise. This in turn permitted the centralization in one corporate structure, of control of a large part of an industry . . .<sup>11</sup>

The movement reached a peak in 1901 with the formation of the billion dollar United States Steel Corporation and ended with a sharp depression of 1903 consisting of a collapse of the stock market and a decline in business conditions.

A review of the literature concerning the resulting success or failure of these consolidations after the merge wave subsided is rather inconclusive. Dewing<sup>12</sup> and Weston<sup>13</sup> conclude that the majority of these mergers were unsuccessful while Livermore<sup>14</sup> and Nelson<sup>15</sup> conclude that there were an almost equal number of gainers and losers.

The only divestiture of note resulting from this merger wave was the celebrated forced divestiture of Standard Oil of New Jersey, which led to the distribution of shares of its 33 subsidiaries in 1911.

Although business enterprises did decline in value or were totally liquidated or sold outright following this merger wave, it is theorized that no trend of divestitures of any magnitude followed this wave for the following reasons:

(1) Since most mergers were in the form of consolidations rather than acquisitions, this deterred divestment of subsidiaries because business units were difficult if not impossible to separate for the parent.

(2) The merger wave was so dramatic and short that many large firms, which were the result of consolidations, were still trying to determine their existing capacity rather than divest themselves of capacity. They were still in the midst of reorganization and digestion of the consolidated units and were not capable of divestment analysis.

(3) Since most mergers were of the horizontal form, a divestment could result in the increase of direct competition.

(4) The newly developed capital and security markets would penalize any parent firm of a divestiture as a sign of failure. Since there was a considerable amount of concentration of stock ownership and corporate control to a few holders, they would surely react negatively to any efforts of divestiture.

(5) Management of the merging firms took a subservient role to that of the professional promoters in bringing the two firms together in the consummation of the mergers. This left management

with little analytical experience needed to initiate divestment activity. Additionally, there were no outsiders promoting divestitures as they had mergers.

### The Second Merger Wave

Although there was an increase in merger activity in the early 1920s, the real thrust took place in the period 1924-1929. There were 5,846 mergers from 1925 to 1931, with a peak reached in 1929 when 1,245 mergers were recorded. This is more than twice as many reported mergers during the turn-of-the-century wave. There is a particular lack of data on this second wave which makes it a difficult one to measure but the literature does reveal that the majority of the mergers were of the one-at-a-time acquisition form.<sup>16</sup> Since acquisition replaced the consolidation form, the average size of the merger was most likely smaller than during the first wave, meaning a less spectacular wave. The second wave witnessed the increased use of vertical and circular types of merger and the resulting decline of the horizontal. In this context, circular merger involves product extension; that is, it provides a firm with nonsimilar products or services that utilize the same distribution channels. The motive for most mergers in this period was to achieve or to preserve existing oligopoly positions in many industries.<sup>17</sup>

In this period, the professional promoters of the first wave were replaced by investment bankers as the major protagonists of merger activity, as Reid emphasizes

. . . that as many as nine out of the ten mergers of the second wave had the investment banker at the core. But management assumed a larger role in the promotion, relative to their role during the first wave, because the acquisition is relatively less complicated to consummate than the consolidation.<sup>18</sup>

The banker's incentive was that by taking an active part in the working out of the combination, often by assuming the role of the actual promoter, the banker entitled himself to receive a substantial stock interest in the new company in reward for his services. He also received benefits from profits on the sale of securities for the new company.

As in the first wave, favorable business conditions existed in this second wave: Rising security prices and wholesale prices, favorable capital market and a prosperous business atmosphere. During this prolonged prosperity, acquiring firms were also expanding by internal growth methods, and thus new investment spending was taking place simultaneously with the formation of mergers.

This extensive merger wave was followed by the most severe depression in American history. This immediate change of state took most of the merging firms by surprise and left little time for the sometimes slow process of divestment. Indeed, it is quite plausible that the market for divestitures had completely dried up as most firms were struggling to keep plants open rather than finding a bargain-priced divestment from another competitor.

#### The Current Merger Wave

The current merger wave started around 1955 and has continued at a high rate of activity since then with no end yet in sight. This wave has already surpassed the combined numbers of mergers in both previous waves as well as the financial magnitudes involved in both waves. The acquisition form of merger is still more dominant than the now almost nonexistent consolidation, but the most striking characteristic of the



current wave is that acquisitions have been much more of the conglomerate variety. The conglomerate form of acquisition is where the firm switches from single to multiple products and acquires firms with no apparent similarities in production or marketing activities. A marked change from the previous merger episodes is that the principle promotion efforts have been generated by the managers of the acquiring firms rather than the outsiders of the two previous waves.<sup>19</sup> Not only has management taken the leading role, but many firms have established an aggressive attitude of seeking out acquisition candidates. An illustration of this is that out of 93 acquisition-oriented firms studied by Ansoff, et al.,<sup>20</sup> 70 percent pursued opportunities of acquisition and of the candidates whose acquisitions were consummated, 69 percent of the initial contacts were made directly by the acquiring firms and not by an intermediary.

Firms have begun to establish acquisition departments within their organizations and law firms and investment bankers have developed specialized staffs to aid firms in their search, analysis and consummation of acquisitions and mergers.

#### Current Increase in Divestitures

On the heels of this current merger wave is a rapid increase in divestitures of divisions and subsidiaries. Divestitures of divisions or subsidiaries have risen from under 700 in 1968 to 1,400 in 1970, and to over 1,900 in 1971.<sup>21</sup> Prior to this, divestment frequency was quite low. Vignola indicates that divestment frequency was below 100 per year in the late 1950s and rose to 150 per year range by the mid-1960s.<sup>22</sup>

Actually, divestitures are a part of the merger wave and have become

more representative of the acquisitions of the 1970s, as more firms are buying portions of companies rather than whole firms. For example, 41 percent of mergers in 1971 consisted of divestments which is up from 16 percent in 1970.<sup>23</sup>

What are the reasons for this increase in divestment activity? Is it the simple fact that corporate management has finally faced the realization that they have acquired some loser subsidiaries in the midst of the merger boom of the 1960s and have no choice but to divest these units and take a capital loss? Although this is true in many cases, it does not explain all divestitures as Connelly<sup>24</sup> and Vignola<sup>25</sup> point out, that numerous corporations have sold profitable as well as unprofitable units.

#### Reasons for Increased Rate of Divestitures

Corporations divest themselves of subunits for numerous reasons, and many times for more than one reason. Forced divestitures, the need to reduce corporate debt, management incompatibility, and divestiture to finance an acquisition have already been mentioned. But recent developments in the corporate environment have been construed by several authors as reasons for the increased divestment of unprofitable as well as profitable divisions.

On such large and lasting transactions such as divestitures, the consequences of tax effects are very important. The decision to retain or divest often hinges on tax gains or losses. Tax considerations may dictate the method of implementing a decision to divest, as well as serve as a major factor in determining the correct timing of the decision.<sup>26</sup> For these reasons, changes in the tax regulations may have a direct

effect on the divestment situation. Hershman points out that the Tax Reform Act of 1969 provided an incentive to divest by allowing a tax-loss carryback of up to three years to be applied to previous capital gains if losses are realized on the sale of a division. Additionally, the government promised the tax rebate within 90 days of a company's filing for it.<sup>27</sup>

Bentley and Wines discuss the Tax Reform Act of 1976 concerning the ability of an acquiring company to utilize the tax benefits of net operating losses of the acquired subsidiary.<sup>28</sup> They conclude, that for the most part, the changes due to the Act are unfavorable to acquiring firms wanting to use the operating losses. However, there are a few benefits that serve as incentives to acquire unprofitable units and are therefore favorable to divestment activity: The Act increased from three to five years the period of time than an operating loss of an acquired subsidiary could be applied to the acquiring firm's taxable income generated in the future. Additionally, the 1976 Act eliminated the requirement that the acquiring firm must continue operating the acquired subsidiary in the same trade or business as before acquisition to enable the acquiring firm to utilize the benefits of tax-loss carryovers. This change in the federal tax regulation lends more mobility to the assets of the divested unit and gives flexibility to the acquiring firm.

These tax effects are important aids because the common situation for divestiture is still a firm with an unprofitable subsidiary. Research by Duhaime and Patton shows that "elimination of an unprofitable unit" is the primary reason for divestments of 60 large industrial firms.<sup>29</sup>

Another change in the external environment brought about by the

government is the Securities and Exchange Commission's change in corporate reporting requirements. Since 1971, the SEC has required that diversified firms report sales and profits for each "line of business" accounting for more than ten percent of total sales and profits. These data must be provided in the company's Form 10-K reports to the SEC.<sup>30</sup> Although no study has focused primarily on the effects of line-of-business reporting, former SEC Chairman Manuel Cohen summarizes the possibilities by observing that this type of information

. . . serves a number of purposes. It not only informs the investor or his adviser, but also serves as an important control on corporate managers by requiring them to justify the results of their stewardship. There may be diversified companies which are maintaining low profit or money-losing operations for reasons which would not be persuasive to stockholders or financial analysts, and requiring separate disclosure might well result in the improvement or elimination of the substandard operation to the ultimate benefit of the stockholders and the economy generally.<sup>31</sup>

Boyle identifies the weaknesses and lack of uniformity in the SEC's line-of-business reporting requirements; however, he does note that corporations are voluntarily moving towards more divisional reporting.<sup>32</sup>

Hecht also emphasizes that the corporations that made these types of disclosures prior to 1971 reported that it produced a better working relationship between management and security analysts.<sup>33</sup>

Although the SEC's change in required reports has several loopholes, it is a step in the right direction for providing meaningful information to the investing public. The effect that these disclosures have on the divestment situation is by highlighting for the investing public, sub-optimal performance of divisions or product groups. This tends to force management to be more solicitous in decisions to retain an ailing subunit.

The new rise in interest rates in the money and capital markets have

increased the cost of capital to the point where divestiture may be the cheapest source of working capital.<sup>34</sup>

Bradley and Korn (100 p. 52) discuss the recent availability of foreign capital seeking direct investment in the United States as greatly enhancing the bargaining position of divestors because it enlarges the market of acquiring firms.<sup>35</sup> Connelly also brings out this point and offers such examples as the Matsushita Corporation acquiring Motorola Corporation's Quasar Color Television division.<sup>36</sup>

Several authors cite a combination of general economic conditions that have led to the increase in divestments. Hayes credits inflation as pressuring management into divestitures by its effects on declining profit margins and price/earnings ratios.<sup>37</sup> Bradley and Kern also discuss inflation as a factor that allows acquiring firms to offer prices for divestment candidates with premiums of up to 60 percent over market value because of the negative effect inflation has on the investing public compared to the acquiring company management.<sup>38</sup>

However, a majority of the literature does not credit the recent increase in divestitures directly to external environmental factors as to a change in managerial philosophy or strategy. Hershman points out that the phenomena of increasing divestments marks an end to a management theme she calls "supermanager" and signals the birth of the new concept of "assets management".<sup>39</sup> Connelly agrees with Hershman that the old concept of the manager as a problem-solver who, through the use of financial control and systems management, could succeed with any enterprise, has come under recent attack.<sup>40</sup> Connelly believes as does Hayes that now the general view is that a good manager realizes his limits and stays with the industries in which he is competent.<sup>41</sup>

Several authors add that the change in philosophy favoring divestment is enhanced by a change in management personnel that have no vested interest to defend when the possibility of divestment of a prior acquisition is raised. Therefore, they tend to view the divestment situation more objectively. Also, new management may feel a need to demonstrate affirmative action by ridding the firm of prior management errors through divestiture.<sup>42</sup> It is interesting to note that a study of three divestment case histories found that in all three cases, a change in top management was required before the firms could divest themselves of chronically unprofitable businesses.<sup>43</sup>

#### New Management Concept

The new management concept has been referred to as assets management or portfolio management whereby, as Hershman states,

. . . carries maximizing return on investment to the extreme. It holds that a division, a product group, subsidiary are all subject to the same financial scrutiny and the same buy-or-sell decision making that governs the formation of an investment portfolio.<sup>44</sup>

Lovejoy further delineates this portfolio approach as a strategy where products or activities

. . . should be 'turned or rolled over' whenever it is in the company's long-run interest of attaining overall objectives. Managements holding this view see their mission as that of continuously reviewing the portfolio and, when and where necessary, disposing of old assets and investing the proceeds<sup>45</sup> in new ventures which will maximize company profit and growth.

Another indication of the increased use of portfolio management is the consideration of "fit", whereby a collection of product groups, divisions or subsidiaries are considered in light of their complimentary characteristics and advantageous interrelatedness. Several authors cite this strategy of fit as an important factor in divestment programs.<sup>46</sup>

Duhaime and Patton found that "fit with other product lines or corporate goals" was the most commonly used criteria for strategic evaluation of divestment candidates.<sup>47</sup>

This concept of portfolio management is an important consideration in the present study and will be discussed later more thoroughly.

#### Managerial View of Divestment Process

It is important to note how divestitures were viewed and handled in the past in comparison to the present. Up to 1972, many authors noted a dearth of objective analysis concerned with the divestment situation. Porter noted that in the three case histories of divestments, none of the firms analyzed any quantitative data until the decisions to divest had effectively been made.<sup>48</sup> Hayes also notes little attempt at careful analysis or even application of a company's normal capital budgeting process to a divestment proposal.<sup>49</sup>

Vignola notes that the results of his 1973 survey questionnaire indicates that firms have not considered divestments important enough to make specific assignments of responsibility for this activity. Also, Vignola concludes that most respondents consider divestment as a reality only at the point where no other viable alternatives exist.<sup>50</sup>

Hayes, Lovejoy, and Porter note a general lack of experience or specific skills needed for an effective divestment program.<sup>51</sup>

Recent studies have reported a more favorable attitude of divestment by management and a shift to the use of divestment as a positive strategy. Duhaime and Patton in their more recent study found that the majority of large firms have assigned specific individuals with divestment responsibility and some have even evolved divestment departments.

Their study concludes that firms are now using more objective, quantitative analysis in divestment situations and have shifted from "defensively-motivated" divestment programs characterized by financial distress and "last ditch efforts" to "aggressively-motivated" programs focused on proactive, strategically-oriented divestments aimed at maximizing firm wealth.<sup>52</sup>

All three authors of the only books written specifically on divestment programs and procedures promote the "normalizing" of the divestment process.<sup>53</sup> Normalizing divestment means that this activity should be considered an integral part of the managerial process and a regular corporate activity equal in normalcy to that of production, marketing, selling, or planning and acquiring. Duhaime and Patton conclude that a significant number of firms are moving in this direction.

Recently academicians have recognized managements' needs for more careful financial analysis and well-planned programs for effective, positive divestment strategies. To this end, Alberts and McTaggart have recently authored the first scholarly presentation devoted entirely to the financial analysis that companies should use to determine whether divestment of a division is or is not warranted.<sup>55</sup>

With the new controversy over possible monopoly in the petroleum industry, the government has spawned recent studies on the implications of implementing forced divestitures of portions of the large oil firms. This controversy has stimulated new interest in the divestiture phenomenon resulting in more articles and studies in the forced divestiture.<sup>56</sup>

With the change in management strategy and the recognition of the need for skills and knowledge specific to the divestment situation, it is expected that more empirical and theoretical research will be forthcoming along with more publications in the applied area of divestitures.



## END NOTES

<sup>1</sup>Irene M. Duhaime and G. Richard Patton, "Selling Off", Wharton Magazine (Winter 1980), p. 44; Lovejoy, p. 35; Hayes, p. 56.

<sup>2</sup>Samuel M. Reid, Mergers, Managers and the Economy, (New York 1968), p. 102.

<sup>3</sup>Hayes, p. 59.

<sup>4</sup>Duhaime and Patton, p. 44.

<sup>5</sup>Reid, p. 28.

<sup>6</sup>Ibid, pp. 30-95.

<sup>7</sup>Ibid, p. 38.

<sup>8</sup>Ibid, p. 39.

<sup>9</sup>J. Moody, The Truth About the Trusts: A Description and Analysis of the American Trust Movement, (New York 1964), p. 467.

<sup>10</sup>Reid, p. 40.

<sup>11</sup>Ibid, p. 49.

<sup>12</sup>S. A. Dewing, "A Statistical Test of the Success of Consolidations", Quarterly Journal of Economics, Vol. 36 (November 1921), p. 85.

<sup>13</sup>J. Fred Weston, The Role of Mergers in the Growth of Large Firms, (California 1953), p. 22.

<sup>14</sup>S. Livermore, "The Success of Industrial Mergers", Quarterly Journal of Economics, Vol. 50 (November 1935), p. 46.

<sup>15</sup>Robert L. Nelson, Merger Movements in American Industry: 1895-1956 (New Jersey 1959), p. 25.

<sup>16</sup>Reid, p. 56.

<sup>17</sup>Ibid, p. 58.

<sup>18</sup>Ibid, p. 59

<sup>19</sup>Ibid, p. 86.

<sup>20</sup>H. I. Ansoff, et al., Acquisition Behavior of U.S. Manufacturing Firms, 1946-1965 (Nashville 1971), p. 105.

- <sup>21</sup>Hayes, p. 59.
- <sup>22</sup>Vignola, p. 3.
- <sup>23</sup>Lovejoy, p. VII.
- <sup>24</sup>Connelly, p. 78.
- <sup>25</sup>Vignola, p. 85.
- <sup>26</sup>Lovejoy, p. 213.
- <sup>27</sup>Arlene Hershman, "The Age of Un-Merger", Duns Review, Vo. 95 (June 1970), p. 30.
- <sup>28</sup>William R. Benley and William R. Wines, "Are Tax Loss Carryovers Worth Anything Today?", Mergers and Acquisitions (Spring 1978), p. 18.
- <sup>29</sup>Duhaime and Patton, p. 46.
- <sup>30</sup>Boyle and Jaynes, p. 169
- <sup>31</sup>Lovejoy, p. 224.
- <sup>32</sup>Boyle and Jaynes, p. 15.
- <sup>33</sup>Charles J. Hecht, "Product Line Sales and Profit Reporting--An SEC View", Mergers and Acquisitions, Vol. 4 (March-April 1969), p. 14.
- <sup>34</sup>Hershman, p. 31.
- <sup>35</sup>J. W. Bradley and D. H. Korn, "Bargains in Valuation Disparities: Corporate Acquirer Versus Passive Investor", Sloan Management Review, Vol. 20 (Winter 1979), p. 52.
- <sup>36</sup>Connelly, p. 79.
- <sup>37</sup>Hayes, p. 56.
- <sup>38</sup>Bradley and Korn, p. 59.
- <sup>39</sup>Hershman, p. 30.
- <sup>40</sup>Connelly, p. 77
- <sup>41</sup>Hayes, p. 59.
- <sup>42</sup>Lovejoy, p. 207.
- <sup>43</sup>Michael E. Porter, "Please Note Location of Nearest Exit: Exit Barriers and Planning", California Management Review, Vol. 19 (Winter 1976), p. 26.

<sup>44</sup>Hershman, p. 30.

<sup>45</sup>Lovejoy, p. 10.

<sup>46</sup>Hershman, p. 31; Hayes, p. 39.

<sup>47</sup>Duhaime and Patton, p. 46.

<sup>48</sup>Porter, p. 28.

<sup>49</sup>Hayes, p. 58.

<sup>50</sup>Vignola, p. 68.

<sup>51</sup>Hayes, p. 57; Lovejoy, p. 13; Porter, p. 24.

<sup>52</sup>Duhaime and Patton, p. 46.

<sup>53</sup>Bing, p. 82; Lovejoy, p. 8; Vignola, p. 50.

<sup>54</sup>Duhaime and Patton, p. 47.

<sup>55</sup>William A. Alberts and James M. McTaggart, "The Divestiture Decision: An Introduction", Mergers and Acquisitions, Vol. 14 (Fall 1979) pp. 18-30.

<sup>56</sup>U.S. Department of the Treasury, Implications of Divestiture (Washington 1976), p. 2.

## CHAPTER III

### METHOD AND PROCEDURE

#### Introduction

This chapter is concerned with the what and how of the analysis used to investigate an interesting question. If corporations are divesting themselves of subunits that are constantly losing money, then it is logical that they do so to improve the corporate portfolio's rate of return in the future. However, corporations are now divesting themselves of viable subsidiaries and divisions. Some of these units are not only profitable but are a core activity of the parent firm. What motivates these corporations to rid themselves of these units? Some divestments, to be sure, were motivated by the need for funds and a buyer was willing to pay a premium price for the unit. These parent firms may have investment opportunities with a rate of return superior to the divested activity. But these cases are minimal because the return differential would have to be large enough to make up for the sometimes astronomical costs involved in a divestment. Sometimes working capital is needed and a tight capital market may make a divestiture of a profitable division appear to be the only way to attain such funds. But this could not explain the majority of divestments concerned with a unit with assets worth a large amount, such as \$10 million or more. A divestiture motivated by the need for money could not adequately explain such a magnitude of divestitures discussed in Chapter II.

A possible explanation of the motive is that corporations wish to reduce the risk position of the corporate portfolio. This is the subject of the analysis described in this chapter. The measurement of risk used in the analysis is discussed along with a formal statement of the hypotheses. The sample of divestitures used in the study is delineated and the design of the research and statistical analysis is described below.

### The Research Problem

The reasons companies engage in divestment activities are many and complex. However, it is assumed that the ultimate purpose of a divestment is to increase the wealth position or reduce the risk of the divesting firm's shareholders. An increase in a firm's market valuation could come about as a result of raising the level of expected future earnings and/or dividends per share, or lowering the market discount rate. The former generally involves increasing earnings per share over what they otherwise would have been, while the latter involves reducing the risk to investors.

The increase in earnings resulting from divestment is generally obtained if management can invest the proceeds from the sale of a division or subsidiary in some activity with an expected rate of return exceeding that of the divested division, or at the same return but lower risk.

This process of increased earnings via divestment does not easily lend itself to empirical investigation because it is quite difficult to trace this process due to diversified corporate reporting procedures. Also, as noted above, corporate financial reports make it almost impossible for outsiders to ascertain the performance of specific divisions.

Additionally, this process of earnings accretion via divestment is a gradual process and it is difficult to separate and account for other possible intervening variables such as general economic conditions, change in the capital market, or changes in the level of leverage, to name a few.

The presence of intervening variables also makes it difficult to study risk reduction resulting from divestments. However, by utilizing a measurement of the degree of risk associated with the future earnings of the divested unit in comparison with that of the divesting parent corporation, it is possible to determine if risk reduction is a motive for divestment. This motive of risk reduction can be further analyzed if the risk measurement of the acquiring firm were also compared.

#### Risk Measurement

The measure of risk employed in this analysis is the beta coefficient ( $\beta$ ) which has been reviewed extensively in current financial literature. The beta coefficient represents the non-diversifiable or systematic risk involved in an individual security or the measure of the volatility of an individual security's returns relative to market returns.

Several authors have presented justifications for the use of beta as a measure of risk. Babcock justifies the use of beta through the "covariance approach".<sup>1</sup> Blume utilizes the "portfolio approach" which is more germane to this paper and will be discussed further.<sup>2</sup>

Kohers and Simpson utilized the beta coefficient in a manner very pertinent to this study. In their research, beta was used as a measure of risk to study financial performance as a motive for mergers.<sup>3</sup>

Beta can be calculated by the ratio of the covariance of the returns

of the individual security with the market return divided by the variance of the market returns. More specifically, beta can be defined as follows:

$$\text{Beta} = \frac{\text{Cov} (K_{mt}, K_{jt})}{\text{Var} (K_{mt})} \quad (1)$$

where:  $K_{mt}$  = the return for the market index in period t, and  
 $K_{jt}$  = the return for security j in period t.

Blume presents the rationale of beta as a measure of risk utilizing a portfolio approach. He illustrates that as a portfolio of securities becomes more diversified, the diversification effect of eliminating non-systematic risk proceeds rapidly so that beta becomes a measure of risk for a diversified portfolio. And the beta of an individual stock, as it contributes to the value of the portfolio beta, is a measure of risk for that stock. The larger the value of a security's beta, the more risk the security will contribute to a portfolio.<sup>4</sup>

A derivative of this under portfolio theory is that the subtraction of an individual security from a diversified portfolio will lower the risk of the portfolio if the security's beta coefficient is greater than the portfolio beta coefficient.

As noted in the literature review, many corporate managers have applied the portfolio concept to their organizations, whereas corporate divisions and/or subsidiaries are viewed as individual securities in an investment portfolio and are subjected to the same financial scrutiny. This study will apply this concept to the divestment phenomena to ascertain if the possible improvement of financial performance through risk reduction serves as a motive for divestment.

### Statement of Hypotheses

If a division or subsidiary of a corporation is viewed as a security or asset of a corporate portfolio and the beta coefficient can be derived for each division and the corporate portfolio as a whole, then the risk position of the corporation can be reduced through divestiture of a division if the beta for the division is greater than the corporate portfolio beta. Therefore, if risk reduction is a motive for divestiture, then:

$$\beta_D > \beta_S \quad [1]$$

where  $\beta_D$  = the beta coefficient for the divested division or subsidiary, and

$\beta_S$  = the beta coefficient for the selling corporation.

By comparing the betas of divested units to betas of selling, parent corporations, it is possible to test this hypothesis.

This portfolio concept of asset management may be investigated further by comparing the betas of the selling corporation (S firm) and divested unit (D firm) to the beta of the corporation that acquires the divested unit (A firm). This is similar to the study by Kohers and Simpson. They compared the beta coefficient of acquiring and acquired firms in a merger. Their results revealed that there was no significant difference between the two betas at the .10 level.<sup>5</sup> However, this sample consists of firms acquiring divisions or subsidiaries from other firms, which is a different phenomenon than most merger studies. It is suggested that in general, corporations that acquire divested divisions, subsidiaries, or product lines are motivated by financial improvement through other means than risk reduction. As stated earlier, it appears logical that management would purchase a subsidiary from another corporation with the expectation that they can do a better job with the unit. Therefore, it is



hypothesized that acquiring firms purchase divested units to increase the wealth position of their shareholders through improvement in their rate of return; in other words, by purchasing a divested unit with an equal or greater risk position than in their own corporation.

Therefore, the second hypothesis is that the following will obtain for all acquiring firms and divested units:

$$\beta_A \geq \beta_D \quad [2]$$

where:  $\beta_A$  = the beta coefficient of the acquiring corporation of the divested unit.

#### Divestiture Sample

The sample used in this analysis consisted of thirty divestitures. The earliest divestiture included in this study occurred in April 1952 and the latest in May 1977. The sample divestitures were chosen from the list of manufacturing and mining companies acquired with assets of \$10 million or more from 1948 to 1978 contained in the Statistical Report on Mergers and Acquisitions by the Federal Trade Commission.<sup>6</sup> This list also contains one of the few authoritative listing of divestitures. The sample selection criteria consisted of the following: Both the buying and selling companies had to be listed on the New York Stock Exchange continuously for five years prior to the date of divestiture; the divested unit must have been identified by at least the first three digits of the Standard Industrial Classification code; and the buying and selling firms must not have made a major divestment (consisting of a subsidiary or division with \$10 million or more in assets) within the five years prior to the observed divestiture. The first criterion was used so beta values, based upon 60 monthly observations over a five-year period, starting 59

months prior to the investment and continuing up to and including the month of divestment, could be calculated. The last criterion was used to abort the difficult task of sorting the risk effects of multiple divestments.

The reason the divested unit must have been identified by at least the first three digits of the SIC code was to enable a subsample of firms similar in SIC code to be gathered to represent the divested unit. Since it is very rare for a divested unit to be listed on any stock exchange, a beta value is impossible to obtain. Therefore, a group of firms for each divested unit was formed on the basis of similarity of SIC codes and appropriate listing on the NYSE to compute a proxy beta value for the divested unit. The majority of proxy samples were formed on the basis of the same first three SIC code digits while only three groups were formed on the basis of two digits and six groups were formed under the same four digits. The size of the proxy groups ranged from seven firms to as large as 32 firms. The mean for each of the 60 monthly market returns from every company in the representative group was computed to calculate the proxy betas for the divested unit. Table I lists all buying, selling, and divested firms in the sample.

### Research Design

As noted by Blume, no economic variable including the beta coefficient is constant over time.<sup>7</sup> For this reasons, 60 observations of monthly stock market returns were analyzed for the buying and selling firms and proxy groups representing the divested firms. The CRSP data files developed by the Center for Research in Security Prices of the Graduate School of Business, University of Chicago, were used to obtain

TABLE I

SELECTED DIVESTED FIRMS WITH DIVESTING AND ACQUIRING  
FIRMS WITH SIC CODES GROUPED BY DIVESTITURE

#	Date of Divestiture	Selling Company and SIC Code	Divested Company and SIC Code	Buying Company and SIC Code
1	04/1952	Owens-Illinois Corp. 3211	American Coating 2612	Gair Robert, Inc. 2671
2	03/1956	Renolds Metals Co. 3350	Richmond Rad. 3431	Rheem Mfg. Co. 3491
3	12/1958	Libby-Owens Ford, Inc. 3210	Libby Co. 2299	Johns-Manville 326X
4	03/1961	Dayco Corp. 3010	Dayco Division 301X	Firestone Tire 3011
5	03/1962	LTV Corp 3720	Vought Industries 3791	Divco-Wayne Corp. 3710
6	03/1963	Warner Lambert Co. 2834	Standard Oil (Ind) 2911	Pro-Phy-Lac 3981
7	08/1964	Merritt Chapman and Scott Corp. 1629	Devoe and Reynolds 2850	Celanese Corp. 2823
8	09/1966	Sears Roebuck & Co. 5311	Warwick Electronics 365X	Whirlpool Corp. 3633
9	05/1967	Archer Daniels Midland Oil Co. 2045	Archer-Daniels Chemicals 287X	Ashland Oil 2911
10	07/1968	Borg Warner Corp. 3561	Norge Co. 363X	Fedders Corp. 3580
11	09/1968	General Foods Corp. 2099	SOS Products 3291	Miles Laboratory 2834
12	07/1969	W. R. Grace & Co. 2819	Miller Breweries 2082	Philip Morris, Inc. 2111
13	05/1970	General Host Corp. 2011	Armour Meats 2011	Greyhound Corp. 6711
14	01/1970	Celanese Corp. 2823	Champlin-Pont 2911	Union Pacific R.R. 4011
15	05/1970	Eversharp Corp. 3424	Eversharp Div. 3424	Warner Lambert Co. 2834
16	09/1970	General Electric 3634	F.E. Computers Div. 3573	Honeywell, Inc. 3573
17	02/1970	Kaiser Aluminum 3334	Kaiser Jeep Div. 3711	American Motors Corp. 3711
18	01/1970	Dart Industries 2834	Riker Labs 2834	Minnesota Mining & Mfg. 2641
19	04/1970	J. R. McDermott 3533	Transocean Oil 1311	Esmark Corp. 2011
20	07/1970	LTV Corp. 3728	Wilson Phar. & Chemicals 2891	American Can Co. 3411
21	04/1972	Colorado Intst. Corp. 4922	Colorado Mfg. 3821	General Signal Corp. 3622
22	01/1972	Riegel Paper Corp. 2641	Riegel Div. 2531	Federal Paper Board 2651
23	09/1975	Stanley Wks. 3429	Amerock Div. 3429	Anchor Hocking Corp. 3229
24	12/1975	Papercraft Corp. 2648	CPS Industries 2648	Arcata Corp. 2751
25	11/1975	Rapid-American Corp. 5311	Int'l Playtex 2342	Esmark Corp. 2011
26	05/1975	Continental Tel. Corp. 4811	Vidar Co. 3674	TRW Inc. 3714
27	04/1976	Airco Corp. 2813	Viking Div. 3462	Quanex Corp. 3317
28	04/1977	Rorer Group, Inc. 2834	Amchem Div. 2819	Union Carbide Corp. 2869
29	01/1977	Apache Corp. 1311	Apexco, Inc. 3711	Natomas Co. 1382
30	05/1977	Ferro Corp. 2899	Fiber Glass Div. 3229	Reichhold Chemicals Corp. 2821

the individual common stock returns and the market portfolio returns. Specifically, 60 monthly common stock returns including dividends were regressed on equal-weighted market portfolio returns with dividends to obtain beta coefficients for all sample companies. The 60-month period, covering five years prior to the divestiture up to and including the month of divestment, was ample margin to avoid the discounting effects due to rumors of a coming divestiture and/or the announcement of the intention to divest.

There were a total of 110 divestitures listed by the Federal Trade Commission report on mergers and acquisitions from which the sample of 30 were drawn. The size of the sample, with its corresponding inherent biases, is attributed to the stringent criteria applied to measure the systematic risk; namely, counting only divestitures with a five-year listing on the NYSE and with firms that have only executed one major divestiture during that period. The smallness of the sample is partially counterbalanced by lack of overlapping effects on measuring systematic risk caused by other divestitures within the same corporation. However, an undetermined bias may be attributed to the fact the sample was not controlled for mergers and acquisitions that may have been accomplished by the firms during the five-year period which could affect beta values significantly.

Table II lists the beta coefficients for the buying, selling and divested companies grouped by divestitures. In ten divestitures, proxy samples were not formed for divested units because the SIC codes were exactly the same as either the buying or selling corporation in the divestiture. Statistical analysis included only those ten cases when the buying company was compared to the selling company. Statistical tests

BETA COEFFICIENT VALUES FOR BUYING, SELLING  
AND DIVESTED FIRMS

Divestiture Number <sup>1</sup>	Selling Firms	Divested Firm Proxy	Buying Firm
1	.75386	1.05767	1.53033
2	1.98145	1.01300	.89900
3	1.05966	1.36751	.92313
4	1.25453	1.25453	1.04160
5	1.51218	.88658	.94132
6	1.61139	1.23893	.78369
7	.94627	.89266	1.37500
8	.59150	1.51399	.97522
9	.46524	1.11955	.64127
10	1.01548	1.21223	1.40044
11	.57533	1.12779	.79519
12	.81343	.78784	.92144
13	1.68491	1.68491	.86018
14	1.04408	.84714	.69291
15	1.20602	1.20602	.67849
16	.57617	1.06211	1.06211
17	1.06950	1.13001	1.13001
18	1.25840	1.25840	.69230
19	.95649	1.34235	.81650
20	2.16301	.42536	.53712
21	.92955	1.19780	1.02754
22	1.01061	.69994	.79817
23	.93160	.93160	.81076
24	1.35559	1.35559	.56498
25	1.50864	.80920	.55001
26	.75244	.56174	.86593
27	.98991	.89700	.69363
28	.63076	.78296	.78296
29	.74698	.74698	.57155
30	1.10284	1.23311	.83400

<sup>1</sup>The divestiture number refers to the divestitures similarly numbered in Table I, page 35.

were done on the samples with and without these ten divestitures and were found not to effect the results.

### Statistical Analysis

Many studies on differences in sample characteristics focus on the arithmetic mean of each sample. The potential drawback with this method is that there may be extreme values in the sample which could easily affect the sample's arithmetic mean. One way of circumventing this problem is to employ a paired-difference test. The paired-difference test in this analysis examined up to 80 sets of data instead of six. This particular approach is believed to yield more information about the mean difference in the risk positions between selling, buying and divested firms, rather than just testing for equality of each firm's risk measurement.

The Statistical Analysis System (SAS) was used for the data analysis which is unique in producing an exact significance level for each statistical test result as annotated in the results illustrated in Table III.

Another test was run to analyze the variances of the buying, selling and divested firms' mean beta coefficients. A simple T-test was used and SAS also provided an F (folded) statistic to compute the test for equality of the two variances of the compared group means. These statistics do not provide as meaningful results as the paired-difference test. This is because the purpose of the analysis is to investigate each divestiture separately as concerns differences in the measure of systematic risk. The T-test and F-test is not as sensitive to the individuality involved in each divestiture in the relationship between the selling, buying and divested firms and the economic climate and nuances of the stock market during the five-year period of observation as the paired-difference test

provides.

The empirical results reveal that the measurements of systematic risk were significantly greater for the divested units than the buying firms under the paired-difference test. An analysis of the individual divestments reveals that the divested unit risk position exceeded that of the buying firm 70 percent of the time. However, the T-test and F-test disagree in their results. The T-test shows no significant difference while the F-test shows that the null hypothesis cannot be accepted. The paired-difference test is the important test and its results will stand.

The paired-difference test and the F-test show no significant difference between the risk positions of the selling firms and their divested units. The T-test does not show significant equality. In observance of the paired-difference results, the null hypothesis is accepted and the first hypothesis that the risk position of the divested unit is greater than its parents, selling firm is rejected.

An additional comparison of the beta values of the selling and buying companies was done to investigate the reliability of the proxy beta for the divested units. The reason for this analysis is due to the limited validity of the proxy beta. It is impossible to derive a beta coefficient for each division or subsidiary because these units are usually wholly-owned by the parent corporation and not traded on any stock exchange so that market price data are not available. Therefore, a proxy beta for the divested unit was derived as the average beta of all corporations listed on the NYSE with similar industry characteristics. This proxy beta does have several conceptual difficulties concerning its use as a meaningful representative. While not free of potential bias,

this proxy beta was used because it is the best possible surrogate measure under the circumstances. It should be noted that other studies have utilized proxy financial measurements based on similarity of SIC codes.<sup>8</sup> This type of data is considered a good substitute because of the presence of strong factors that commonly affect all firms within a specific industry such as market variances and changes in the economic climate surrounding an industry.

Table III shows that the paired-difference test indicates that the selling firms' betas were greater than the buying firms'. This gives added weight to the representatives of proxy risk measurements for the divested units. However, this conclusion must be accepted with caution because both the F-test and T-test agree in showing no difference between the means of the selling and buying firm groups that can be considered significant.

The disagreement between test results was not investigated closely due to the fact that the paired-difference test was the major test while the F-test and T-test are ancillary to the purpose of the study. The small sample sizes could attribute much to the disagreement by being more sensitive to extreme values in addition to the rather large standard errors.

All results were considered significant at a minimum level of .05.



TABLE III

STATISTICAL RESULTS OF PAIRED-DIFFERENCE TEST  
AND T-TEST PROCEDURES

Means of Beta Values					
		Buying Companies			.8732260
		Divested Companies:			1.0548166
		Selling Companies:			1.0832606

Paired-Difference Test					
		Calculated	Level of Statistical		
		T Value	Significance	for T Value	DF
(A)	Buying Firm compared to divested firm:	3.00	.0058		26 Divested unit Beta exceeded buying firm Beta 19 times out of 27 divestitures
(B)	Selling Firm compared to divested unit:	.31	.7625		22 Divested unit Beta exceeded selling firm Beta 12 times out of 23 divestitures
(C)	Selling Firm compared to buying firm	2.16	.0393		29 Selling firm Beta exceeded buying firm Beta 18 times out of 30 divestitures

T-Test						
	Tested Firms	N	Standard Deviation	Standard Error	DF	T Value and Significance Level for Null Hypothesis
(D)	Buying Firm	27	.25198	.04849	52	2.71 at
	Divested Firm	27	.29308	.05640		.0009 level
For null hypothesis: F = 1.35 with 26 and 26 degrees of freedom significance level = .446						
(E)	Selling Firm	30	.4420	.0922	44	.3447 at
	Divested Firm	30	.2667	.0556		.757 level
For null hypothesis: F = 2.75 with 22 and 22 degrees of freedom significance level = .0216						
(F)	Buying Firm	30	.2467	.0450	58	2.3857 at
	Selling Firm	30	.4143	.0786		.0203 level
For null hypothesis: F = 2.82 with 29 and 29 degrees of freedom significance level = .0067						

## END NOTES

<sup>1</sup> Guilford C. Babcock, "A Note on Justifying Beta as a Measure of Risk", Journal of Finance, Vol. 27 (June 1972), p. 700.

<sup>2</sup> Marshall E. Blume, "On the Assessment of Risk", Journal of Finance, Vol. 26 (March 1971), pp. 2-3.

<sup>3</sup> Theodor Kohers and W. Gary Simpson, "Financial Performance: Motive for Corporate Mergers", University of Michigan Business Review, Vol. 30 (July 1978), pp. 11-14.

<sup>4</sup> Blume, pp. 2-5.

<sup>5</sup> Kohers and Simpson, p. 14.

<sup>6</sup> Bureau of Economics, Federal Trade Commission, Statistical Report on Mergers and Acquisitions.

<sup>7</sup> Blume, p. 6.

<sup>8</sup> R. L. Conn, "Acquired Firm Performance After Conglomerate Merger", Southern Economic Journal (October 1976), pp. 1170-1171; Robert A. Haugen and Terence C. Langetieg, "An Empirical Test for Synergism in Merger", Journal of Finance, Vol. 30 (1975), pp. 1003-1014.

## CHAPTER LV

## CONCLUSION

If the ultimate purpose of divestiture is to improve financial performance, then the analysis reveals that risk reduction does not serve as a motive for divestiture or as a method to increase the divesting firm's market valuation for the sample selected.

If the above assumed purpose of divestiture holds true, then corporate management's motive for divestiture can be considered to be increasing future expected corporate earnings through investment of the divestment proceeds into areas of activity of a greater rate of return. This could be accomplished by several methods discussed above. Such as: using the funds to acquire other business units, increasing investment in present activities, or possibly lowering the level of costly short-term debt or total leverage to decrease the cost of capital to the corporation.

The empirical results also show that buying companies in the sample consistently purchased divested product lines, subsidiaries or divisions of other corporations that exhibited significantly greater risk positions than that of the buying company portfolio. This is assumed to be in expectation of earning an appropriate required rate of return.

The comparison between buying and selling firms indicated that buying corporations with a lower systematic risk may be in a better position to acquire the product line, subsidiary, or division than the higher risk-oriented parent corporation is to maintain the unit within their

organization. These conclusions, unfortunately, must be considered with caution. The problem of the small sample size hampers not only the question of representatives of the population of all divestments but hampers the validity of the statistical analysis as well.

The conceptual problems of using mean beta coefficients of firms with the same SIC code as the divested unit is obvious. In the first place, the SIC code was matched by only the first three digits in a majority of cases. Secondly, the SIC code system involves much arbitrary classification that cannot possibly capture all the intricacies and individualities of many special industries. Thirdly, one must assume in this study that all proxy corporations are affected exactly the same, in the whole, by economic and market conditions as the divested unit. Also, these proxy companies are complete organizations whereas the divested unit may not be self-sufficient and may not have to consider how its performance will be judged by the market. Finally, this procedure is somewhat insensitive to the fact that the divested unit may be close to failure and a singular situation not represented by the mean betas of the proxy firms.

This study is conceptual in nature. In the dynamic area of business acquisitions and divestments, management may not consider or even have the capabilities to analyze the systematic risk of the portfolio and what the division would contribute to this type of risk position. While this study is far from being an extensive investigation into the divestiture phenomenon, it does serve as being the first known attempt to investigate divestitures under the portfolio concept by utilizing empirical research techniques. This study should therefore be viewed in light of current research and will hopefully stimulate more empirical

research in this area.

A possible study that could contribute more useful and reliable results would combine other measurements of financial and operating performance such as net profit, total asset turnover, or operating rate of return with the beta coefficient of the acquiring, selling, and divested firms. Also a series of case studies of divestitures using empirical techniques would be very useful to practitioners and academicians alike.

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