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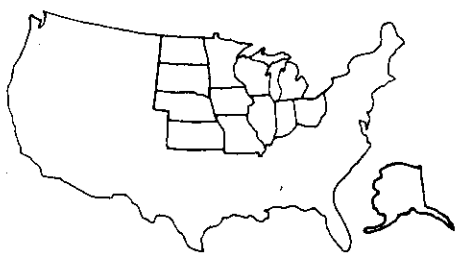
MERGERS IN THE DAIRY PROCESSING INDUSTRY



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FORWARD

The law has an important influence on the organization, control and performance of the U.S. food system. For this reason, a major focus of the regional project, NC 117, is the status and economic impact of selected areas of the law. The first monograph published by this project examined the legal-economic status of limited partnerships in agriculture. This, the third monograph from this large scale effort, provides a legal-economic analysis of the law concerning mergers in fluid milk processing.

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PUBLIC POLICY TOWARD MERGERS IN THE DAIRY PROCESSING INDUSTRY

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PREFACE

Changing technological and market conditions have dictated the obsolescence of numerous fluid milk processing firms. This has caused thousands of mergers and acquisitions over the past several decades, resulting in drastic organizational changes in the fluid milk industry. Several corporations achieved their large size mainly by making hundreds of such acquisitions.

Until the mid-1950s, virtually no public policy restraints were placed on mergers among dairy processors. Commencing in 1956, however, a number of legal actions were taken under the Celler-Kefauver act of 1950, which amended Section 7 of the Clayton Act so as to greatly strengthen the law toward mergers. The numerous mergers of several large dairy processors were challenged under the Act and the Federal Trade Commission issued guidelines covering future mergers.

These public policy actions and the response to them provided a laboratory-like setting for examining how the newly formulated merger rules changed the merger growth behavior of various size categories of firms. In examining this public policy, the study uses economic analyses to identify both the successes and failures of the merger rules and to make recommendations for future policy.

A major finding of the study is that despite special problems in applying the merger law in this industry, its application did not prevent the sizable industrial reorganization toward larger-scale operations necessitated by changing technological and market conditions. At the same time, the policy seems to have contributed to a somewhat more competitive and decentralized industry than otherwise would have emerged. This finding may have important implications for other industries where technological forces present less formidable obstacles to effective application of the merger law.

CHAPTER ONE - INTRODUCTION

The fluid milk processing industry has experienced drastic changes in its structure in recent decades. This study examines the role mergers and acquisitions[1] have played in the changing industrial structure, the resulting response of public policy to these changes, and the impact of this policy on the industry.

Until 1950 there were virtually no public policy restraints on mergers. Thousands of previously independent fluid milk and ice cream firms large and small were acquired by a few corporations that relied mainly on mergers to achieve their substantial size and commanding positions in many markets.

In 1950 a dramatic change occurred in public policy toward mergers. The enactment in that year of the Celler-Kefauver Act greatly strengthened the existing law on mergers, Section 7 of the Clayton Act. Commencing in 1956, the Federal Trade Commission (FTC) issued a number of formal complaints and related initiatives attacking dairy mergers by large corporations. Its complaints challenged hundreds of acquisitions made during 1951-56 by the nation's four leading dairy processing corporations. The Commission ultimately found two of these corporations in violation of the Celler-Kefauver Act, and entered into consent agreements with two others requiring divestiture of certain acquired assets and prohibitions against future mergers. The culmination of these cases was the issuance of guidelines by the FTC setting forth its future enforcement policies toward mergers in the dairy processing industry. These various actions had and are continuing to have a substantial impact on the organization of the fluid milk and ice cream processing industries.

This study (1) reviews the evolution of public policy toward mergers in the fluid milk industry; (2) determines the direct and indirect impact of this policy on the pattern of merger activity; (3) analyzes the effect merger policy has had on the growth of various types of firms in the industry; (4) determines the impact of this policy on overall industry structure and performance; and (5) makes recommendations for future public policy toward mergers in the industry.

THE COMMON CAUSE OF LAW AND ECONOMICS

Although this is a case study of the application of merger policy in a single industry, its implications extend beyond the fluid milk industry. A detailed inquiry into the application of policy in this industry may provide insights into the problems and opportunities of enforcing Section 7 of the Clayton Act, as amended by the Celler-Kefauver Act of 1950. The Celler-Kefauver Act is viewed by many as the most important antitrust statute of this generation; certainly it is the most actively enforced antitrust statute.[2]

[1] We shall use these times interchangeably. A merger or acquisition occurs when a previous independent business firm, or a substantial part thereof, is acquired by or combined with another firm.

[2] Willard F. Mueller, *The Celler-Kefauver Act: Sixteen Years of Enforcement*, A staff Report of the Antitrust Sub-committee, Committee on the Judiciary, House of Representatives, 1967.

This study examines, as Professor Bok has put it, "the way in which law and economics might make common cause" in the judicious application of this statute to the dairy industry.[3] The opportunity for making such a "common cause" in the dairy processing industry is enhanced because the FTC has engaged in an extensive enforcement effort in the industry and considerable economic information exists for evaluating this effort; additionally, considerable new information was developed in the course of the study.

More than a decade has passed since the FTC embarked on an essentially unique merger enforcement policy in the industry.[4] It departed from traditional case-by-case litigation, embracing instead an industry-wide approach that set forth general rules for identifying those mergers that were most likely to be illegal.

Although the Celler-Kefauver Act was intended to prevent any merger that may lessen substantially competition or tend toward a monopoly, it was not intended to prohibit all mergers, and certainly not those with a beneficial or neutral effect on competition. Forbidding the latter types of mergers could place a heavy financial burden on businesses desiring liquidation. Some also have argued that the formation of new firms would be discouraged by a policy that placed restrictions on those wishing to liquidate their business via merger. As Turner puts it, "...the possibility of mergers stimulate the formation and growth of new firms, though the extent of this effect is of course highly speculative."[5] But even more importantly, "a policy of free transferability of capital assets tends to put them in the hands of those who will use them to their utmost economic advantage, thus tending to maximize society's total output of goods and services."[6] Thus a case can be made that free access to merger alternatives may promote the individual welfare of the merging parties, may stimulate the formation of new firms, and tend to result in greater economic efficiency. The case against unlimited mergers rests on historical experience which demonstrates that many existing oligopolistic industries were created through mergers. The economic rationale underlying the public policy that places greater restraints on growth by merger than on internal growth rests on the assumption that growth by merger may by-pass the "market" test of growth. As Professor Heflebower explains:

> When a corporation chooses to grow by building, it expects to face tests in the market for the product over the years required to establish and develop a new operation. It must fight its way in, that is, compete to succeed, and not buy its way in. I consider this a far better market test, and a more immediately relevant one, than the "market test" involved in a merger for the market for firms is highly imperfect.

[3] Derek C. Bok, "Section 7 of the Clayton Act and the Merging of Law and Economics," *Harvard Law Review*, December 1960, p. 227.
[4] The FTC subsequently used variants of this approach toward merger in several other industries: food retailing; cement; textiles; and food manufacturing.
[5] Donald F. Turner, "Conglomerate Mergers and Section 7 of the Clayton Act," *Harvard Law Review*, May 1965, p. 1317.
[6] Ibid.

> Second, in nearly all circumstances, a firm whose acquisition is apt to be challenged has the capacity to grow by building. It has or can get the funds, it has the management capacity, and often already some of the needed market connections.[7]

Those responsible for enforcing any antitrust statute must decide on the most effective enforcement strategies. In other words, which enforcement techniques will best accomplish the statute's objectives? A plausible argument can be made that "the ideal regulatory policy would be one that discriminated carefully on a case-by-case basis between those mergers that threatened substantial anticompetitive consequences and those that do not."[8] Turner illuminates the fallacy in the seemingly attractive in-depth case-by-case approach:

> ...Except in the most obvious cases, economic theory simply does not permit confident judgments on these issues even when all the economically relevant facts have been duly assembled. Thus, broadening the range of factual inquiry in each case beyond certain limits gives little or no hope of promoting rational decision-making. But even if this were not so, the effectiveness of the statute would largely be destroyed if the outcome of the cases turned on a review of all the economic facts. With limited enforcement resources, few cases could be brought. With a wide variety of fact situations, the precedential value of particular decisions—their value as guides to the legality of their mergers—would be limited... Inevitably, the number of mergers with substantial anticompetitive effects would tend to increase.
>
> Consequently, there is little to be lost and much to be gained by directing the law toward rationally-based general rules that are framed in terms of what seem to be particularly significant factual issues, capable of easy resolution.[9]

If we concede Turner's reasoning that "rationally based general rules" are preferable to an in-depth case-by-case approach, the question remains, how best to frame such rationally based general rules? The thesis of this inquiry is that, in Bok's words, it is imperative that law and economics make common cause in this process. The study therefore involves an examination of the legal-economic foundations of the rules formulated by the FTC in this industry; how it enforced these rules; and the impact of the rules, as enforced, on the structure of the dairy processing industry. Based on this analysis, the study then seeks to answer whether the existing FTC merger guidelines for the industry should be abandoned, or retained in existing or modified form.

[7] Richard B. Heflebower, "Comments on the F.T.C. Staff Document, Economic Report on Mergers and Vertical Integration in the Cement Industry," presented at the Federal Trade Commission public hearings on vertical mergers in the cement industry. July 11, 1966.
[8] Turner, *op.cit.*, p. 1318.
[9] Turner, *op.cit.*, pp. 1318-19.

CHAPTER TWO-PUBLIC POLICY TOWARD DAIRY PROCESSOR MERGERS

For over half a century, mergers among fluid milk processors occurred with virtually no government intervention. Framers of Section 7 of the Clayton Act of 1914 believed they had created a powerful deterrent to anticompetitive mergers that characterized the great trust movement around the turn of the century. This expectation was frustrated by a series of Supreme Court decisions which made Section 7 virtually impotent.[10]

The result was essentially unrestrained merger activity until the passage of the Celler-Kefauver Act of 1950. American industry experienced a great merger movement in the 1920s, reaching a frenzied peak in 1929. Mergers slowed sharply during the Great Depression, but accelerated during the latter years of World War II. Merger activity in the dairy industry paralleled the pattern in total manufacturing.

Between 1920 and 1950 the eight largest[11] dairy processors acquired about 1,800 other dairy concerns (see table 4-1). None of these were successfully challenged under Section 7 of the Clayton Act of 1914. Indeed, the FTC early adopted a policy which potential acquirers must have viewed as decidely hospitable, even when the mergers were among competing dairies.[12] This policy doubtless contributed to the ambitious merger programs subsequently embarked on by several dairy processing corporations. Three of the four largest dairy corporations of today achieved their present positions of relative size during the three decades, 1920-50. One study estimates that up to 1948, acquisitions had accounted for the following percentages of growth of the three leading dairy processing corporations: National Dairy Products (now Kraftco), 64 percent; Borden Company, 75 percent; Beatrice Foods Co., 63 percent.[13] Foremost Dairies, the fourth largest dairy product corporation of today, was born late in the great merger wave starting in the 1920s, but did not achieve big business status until it embarked on an enormous merger spree after World War II.

Until the Celler-Kefauver Act of 1950 amended the Clayton Act, there were no significant legal constraints on the merger activity of these firms, even had the antitrust agencies been disposed to act, as they apparently were after 1930.[14] The Celler-Kefauver Act changed all this. First, it closed the so-called "asset loophole"

[10] David D. Martin, *Mergers and the Clayton Act*, University of California Press, 1959.

[11] These are the eight largest dairy processors in 1960—National Dairy Products (which recently changed its name to Kraftco), Borden, Beatrice, Foremost, Pet, Carnation, Arden-Mayfair, and Fairmont.

[12] Two of the first complaints issued by the FTC under Section 7 of the Clayton Act involved dairy mergers. The Commission issued a complaint against Borden February 6, 1919, charging violation of Section 7 by acquiring the capital stock of Alexander Cambell Milk Company, Brooklyn, N.Y. (Docket No. 20). On April 1, 1921, the Commission issued a complaint against Crystal Ice & Storage Co., Portland, Oregon, charging that its acquisition of capital stock in three ice cream companies violated Section 7 (Docket No. 751). Both of these complaints were dismissed by the Commission.

[13] J. Fred Weston, *The Role of Mergers in the Growth of Large Firms*, University of California Press, 1953, p. 141.

[14] On numerous occasions between 1930 and 1950 the FTC recommended strengthening Section 7 of the Clayton Act.

through which many otherwise illegal mergers previously have been able to escape.[15] Second, the legislative history of the Celler-Kefauver Act made it unmistakably clear that the Act was directed at *incipient* monopoly and that Sherman Act (i.e., monopoly) standards were not to be used in judging the legality of particular mergers. Third, the Act covers conglomerate and vertical mergers as well as horizontal mergers.

The Act was to have a great impact on many firms in the dairy industry, although the merger pattern remained undisturbed until 1956. During 1950-55 total merger activity continued high and the top eight dairy processing corporations averaged at least[16] 70 dairy acquisitions annually (Table 4-1). Foremost Dairies, Inc., was the leader, acquiring companies with combined sales of about $342 million. These mergers propelled Foremost's sales from $48 million in 1950 to $388 million in 1955. Beatrice Foods Company was the second most active acquirer, making 175 acquisitions with combined sales of $147 million;[17] this exceeded the growth of its total sales between 1950 and 1961. During 1951-56 National Dairy Products Corporation acquired 39 companies with combined sales of $95 million, and the Borden Company made 110 dairy acquisitions with combined sales of $102 million.[18]

In 1956 the Federal Trade Commission issued separate complaints against each of the four largest dairy corporations charging that certain dairy acquisitions which they made during 1951-56 violated Section 7 of the Clayton Act.[19] The issuance of these complaints caused a sharp drop in mergers by the large dairies in 1956, and following an initial decision in one of these cases, December 9, 1960,[20] merger activity by the industry leaders came to a virtual standstill (see Chapter 4).

Some of the numerous challenged mergers involved the acquisition of competitors that operated in the same geographic markets as the acquiring company. These are called *horizontal* mergers. Other acquisitions involved companies operating in different geographic markets than those occupied by the acquiring corporation. Because fluid milk markets generally are concentrated around specific metropolitan areas, firms operating in different geographic areas generally do not compete with one another, although they often are potential competitors. Mergers between firms in economically different geographic markets are called *geographic market extension* mergers because they extend a firm's operation into a new geographic market.[21] Prior to these cases geographic market extension mergers had not been challenged under Section 7 of the Clayton Act.

[15] Section 7 originally prohibited "stock" acquisitions that might substantially lessen competition. Corporations could therefore avoid the reach of the Act by acquiring the assets of another rather than its stock. Amended Section 7 included asset as well as stock acquisitions.
[16] As discussed in Chapter 4, this is a minimum estimate of the number of acquisitions.
[17] See Opinion of the FTC, Beatrice Foods, Docket No. 6653, April 26, 1965, p. 6.
[18] Complaints in FTC Docket Nos. 6651 and 6652.
[19] These cases were Federal Trade Commission Docket No. 6495, Foremost Dairies; Docket No. 6651, National Dairy Products; Docket No. 6652, Borden Co.; Docket No. 6653, Beatrice Foods Co.
[20] Initial decision by the hearing examiner in Foremost Dairies, Inc., Docket No. 6495, December 5, 1960.
[21] These are one form of conglomerate merger.

The Federal Trade Commission handed down final decisions in two of these cases (Foremost in 1962 and Beatrice in 1965) and entered into consent agreements in the other two (National in 1963 and Borden in 1965). These decisions and consent decrees required the challenged companies to dispose of properties with annual sales of about $200 million. But as shown in Table 2-1, this represented only 27 percent of the sales of companies that had been acquired. A major reason the Commission ordered divestiture of only a relatively small part of the acquired companies was that most of the hundreds of small acquired companies no longer existed as operating entities. Difficult divestiture problems existed because the cases were finally adjudicated or settled in 1962-65, whereas most of the challenged acquisitions had occurred before 1956. To prevent this problem in the future the Commission's relief also included 10-year prohibitions against future mergers by these companies without prior Commission consent.

The expiration of these bans are:

National Dairy (Kraftco)	October 1, 1972
Borden Company	April 22, 1974
Foremost Dairies	March 5, 1975
Beatrice Foods	June 12, 1977

In addition to requiring divestiture and bans on future mergers, in its *Beatrice* decision the FTC set forth certain criteria it would use in challenging future mergers. Here we shall review briefly the economic premises upon which it was based, its policy toward dairy mergers, and the objectives which it hoped to achieve by this policy.

Table 2-1. Sales of Challenged Acquired Companies and Sales of Properties Ordered Divested by FTC

Company	Sales of Challenged Acquisitions	Sales of Divested Properties	Percent
		(millions)	
Borden	$102	$ 22	21.2%
Beatrice	147	35	23.8
Foremost	342	122	35.6
National (Kraftco)	95	7	7.4
	$686	$186	27.1%

Source: Bureau of Economics, Federal Trade Commission

ECONOMIC BASES FOR FTC POLICY

The FTC's conclusions concerning the probable competitive consequences of dairy mergers were based on its interpretation of (1) the existing and probable future structure of the industry, (2) the technological and market factors affecting its structure, and (3) the nature and extent of the merger movement in the industry. Very briefly, the Commission made the following findings.

A great disparity existed in the size distribution of fluid milk and ice cream companies. Both industries were occupied by a few large national and regional concerns and a large fringe of very small ones. In 1958 eight companies made 31 percent of all fluid milk sales with the remainder divided among several thousand small and medium size companies.[22] Whereas the eight largest dairy companies had combined company sales of $4.6 billion, nine out of ten fluid milk companies had annual sales of under $1 million.

The Commission emphasized that only a handful of moderate size fluid milk companies remained: fewer than 50 companies had annual sales of $15 million or more and only 45 had assets exceeding $5 million.

Turning to the local markets in which fluid milk and ice cream are sold, typically four companies made well over 50 percent of total sales. In 71 markets the average market share of the four largest sellers was 82.6 percent in 1962. Moreover, market concentration increased materially in most markets between 1950 and 1962. Even if market boundaries are drawn very broadly, market concentration remains very high. For example, in 1957 just five companies produced 55 percent of all the ice cream sold in the state of California.

The Commission further noted a substantial decline in the number of fluid milk companies in recent years. While in 1950 there were still 16,089 fluid milk plants[23] and 4,202 ice cream plants, by 1961 the number of fluid milk plants dropped by nearly 9,000 to 7,176, and the number of ice cream plants fell by nearly 1,000 to 3,226.

After reviewing the structural changes in recent decades, the Commission examined what caused these and future changes. It found the answer lay in a number of technological and market forces that dictated the demise of many firms and created a harsh economic environment for the survivors.

In the early decades of the 20th century the dairy industry was characterized by easy entry and numerous sellers in nearly all markets. But each succeeding decade brought new changes which made it more difficult for very small companies, and especially producer distributors, to enter and survive in the industry. Among these

[22] These and most of the following facts are based on the Commission's decision in *Beatrice Foods Company*, Docket No. 6653, April 26, 1965.

[23] These numbers differ from those in Table 3-7 primarily because the latter excludes producer-distributors.

changes were the growth of larger cities, the improvement in transportation which broadened the milkshed, the invention of electrical refrigeration and the widespread adoption of pasteurization, improved packaging methods, including an almost complete substitution of paper containers for glass bottles, the growing acceptance of homogenized milk, and the shift from home delivery to supermarkets. Moreover, technical developments occurring within the plant dictated increasing scale of operations. For example, the record showed that a fluid milk plant required a volume of at least 1,500 gallons a day in order to utilize at capacity the minimally efficient size automatic paper packaging machine. While this did not require an enormous plant (annual sales of under $500,000), fully 70 percent (4,900) of all fluid milk plants operating in 1961-62 were too small to operate such a machine at capacity.[24] Therefore, not more than 1,000 of the 7,176 fluid milk plants operating in 1961-62 were large enough to achieve certain economies of scale. Moreover, even firms operating efficient-size plants encountered other barriers to survival and growth. For example, often substantial resources were required to penetrate new markets occupied by large, well entrenched multimarket concerns.

The net result of these various technological and market forces was to make it increasingly difficult to enter and survive in the fluid milk industry.

These developments caused an enormous erosion in the number of independent companies, and made inevitable the demise of additional companies. But while these forces dictated a fundamental reorganization of the dairy industry, the Commission believed that they did not dictate the rise, via merger, of more large, national, multimarket dairy enterprises comparable to those created by the unrestrained merger activity prior to 1955.

Considering the various forces encouraging larger-scale enterprise, it is not surprising that mergers had been commonplace in the dairy industry for over four decades. Merger had been a way of life. It provided the means by which small companies liquidated their assets. It had also provided the means by which small acquiring companies could expand rapidly enough to keep pace with changing requirements of scale. Although nearly all companies of any significant size had grown in part by merger, only a few companies were involved in sizable acquisitions.[25] Since 1920 the eight largest dairies had made over 2,000 dairy acquisitions. Most of the fluid milk and ice cream business held by these companies in the mid-1950's could be attributed directly or indirectly to their numerous acquistions.

[24] A witness for respondent Beatrice Foods estimated that in 1960 there were only 1,098 independent fluid milk companies processing 1,600 gallons per day. Two other respondent witnesses placed the minimum efficient size plant at about 2,000 gallons per day. *Beatrice Foods, op. cit.*,23.

[25] Although the eight largest companies have acquired a smaller *number* of companies than have "all other" companies, they have acquired substantially more assets than have other companies. For example, a study of acquisitions by over 100 large dairy cooperatives found that their total acquisitions involved a far smaller volume of sales than did the acquisitions of Foremost Dairies alone. Willard F. Mueller, *The Role of Mergers in the Growth of Agricultural Cooperatives*. University of California, Bulletin 77, February, 1961, pp. 61-62.

In one of its merger studies the Commission described as follows merger activity prior to 1945:

> The growth of such outstanding nation-wide companies as National Dairy Products Corp. and the Borden Co. could be likened to an acquistion itinerary, sweeping across the country from one large city to another, and gathering in its wake hundreds of companies serving small communities as well.[26]

The dairy processor merger movement resumed in the early 1950s, with the country's four top companies again leading the way. These companies' mergers increased their position in some markets, extended the multimarket scope of their operations and expanded their business into other grocery products.

After reviewing these various developments the Commission concluded:

> These are the cardinal facts which emerge from a review of the economic structure and dynamics of the dairy industry: (1) Concentration has already reached formidable proportions in local areas, which are the economically relevant markets in which to measure competition in this industry. (2) The prospects of survival for small firms, and the conditions for entry of new small-business competitors into the industry and its markets, have worsened. There are relatively few firms outside of the leading eight which can be rated as really strong competitors under present market conditions. (3) The leading firms have embarked on an extensive and far-reaching program of acquisitions, the result of which has been to increase concentration still further and speed the exit of the independents. (4) No showing has been made that these acquisitions (at least those that have taken place since 1950) were necessary for the leading dairies to achieve the economies of scale made possible by the industry's technological revolution, or that the acquired companies could not have achieved such economies through merger with firms much less powerful, well entrenched, and geographically far-flung than the big eight.[27]

After its review of the general economic setting within which dairy mergers were occurring during the 1950s, the Commission considered the question of whether particular acquisitions violated section 7 of the Clayton Act. In its *Beatrice Foods* decision the Commission found five acquisitions violated the Act. These acquisitions had combined sales of $56.3 million in the year prior to acquistion, or about 38 percent of the sales of all companies acquired by Beatrice. In its subsequent order the Commission imposed divestiture of these companies and a 10 year ban on all future acquisitions by Beatrice of firms engaged in the manufacture, processing, sale or distribution of fluid milk, ice cream, or other frozen desserts, except upon prior approval of the Commission.

[26] Cited in *Beatrice* decision, *op. cit.*, p. 20.
[27] *Ibid.*, pp. 25-26.

Three of the acquisitions involved horizontal mergers, one a market extension merger and one, the largest, was primarily a market extension merger, although it involved some horizontal overlap as well.

Perhaps the most significant aspect of the FTC's *Beatrice Foods* and *Foremost Dairies* decisions was the finding that certain market extension mergers were in violation of the Celler-Kefauver Act. These decisions, particularly *Beatrice Foods,* spelled out in detail the economic framework within which the Commission evaluated market-extension mergers.

Various economic factors may influence competitive conduct. Economic theory teaches and empirical studies verify that one particularly significant market characteristic is the number of firms in a market and their respective share of sales in that market. The level of seller concentration affects the competitive strategies employed by competitors. As the Commission pointed out:

> ....In markets where one or a very few firms control a large part of the total sales, there is a tendency for all firms to refrain from vigorous price competition. Each large seller knows that if he makes an across-the-board price cut, the inroads on his major competitors' market shares will be so palpable that they will be compelled immediately to make a corresponding price cut—and that consequently there is little advantage to be gained from price cutting. The small firms in such a market are also inhibited from initiating price competition. They know that the majors will react promptly, perhaps with drastic effect, to any attempt to disturb the price structure.[28]

The Commission then pointed out other market characteristics may place limits on the market power of sellers in highly concentrated markets.

> ....One such force is the condition of entry by new competitors. It may be such that many firms can and promptly do enter the market and establish themselves as viable and substantial competitors, thereby eroding the market power of the dominant sellers. Moreover, the mere prospect of new competition may have a salutary effect. The large seller in a concentrated market knows that the entry of new competitors would jeopardize the stable price structure of the market and might well lead to lower prices, as a result of greater competition, and lower profits. He also knows that if prices in the market are so high as to make it easy for a new competitor to cover his costs, make a healthy profit, and still be competitive with the firms presently operating in the market, the attractiveness of entry to prospective competitors will be great, and the likelihood of actual entry substantial.[29]

[28] *Ibid.*, p. 27.
[29] *Ibid.*, p. 28.

When these conditions exist, they either encourage existing competitors to price so as to forestall entry by potential competitors; or, *potential* competitors may enter the industry, thereby increasing the number of *actual* competitors. In either event, "the condition of entry, or the state of potential competition" may have a salutary influence on competition. Again, quoting the Commission:

> ....It disregards business realities to view such a firm [a potential competitor], which may be as much a real competitive factor as the firm currently selling in the market, as being entirely "outside" the market, or to deny that, just as the elimination of an actual competitor may adversely affect the competitive structure of a market, so may the elimination of a potential competitor.[30]

However, the Commission did not consider potential competitors as perfect substitutes for actual competitors. Indeed, in its earlier decision in the *Foremost* case the Commission pointed out the mere presence of potential entrants is not a sufficient reason for ignoring horizontal mergers which increase concentration among actual competitors. The Commission reasoned that, even if new entrants are coming into the market or concentration is declining, the loss of a substantial firm would adversely affect competition on the presumption that competition would have benefited had the firm remained independent. In *Beatrice* the Commission re-emphasized its view that an absence of actual competition is rarely remedied by "the presence of even substantial potential competition." As the Commission put it:

> ....Potential competition may tend to keep prices in a concentrated market down to entry-discouraging levels, but obviously the price low enough to dissuade a firm from trying to force its way into a new market—always a risky venture—may be substantially higher than the price that would prevail if there were vigorous competition among the sellers already there.[31]

Hence, while horizontal mergers that tend to bring about increases in concentration among existing competitors are of paramount importance, the elimination of potential competition is also significant.

The Commission next turned to the question of how potential competitors might be identified. It began by noting that in a sense every existing firm plus an unknown number of yet unorganized firms are potential competitors. It added, however, "Much potential competition is simply too remote, speculative, or improbable to have demonstrable competitive significance....It is only where the entry of a potential competitor is *probable* that the threat of his entry is likely to exercise a restraining influence on the pricing and other behavior of the dominant firms in the market."

This is not to say that every potential competitor is likely to play an equal role in influencing market conduct. For example, under some market conditions entry by a

[30] *Ibid.*, p. 28-29.
[31] *Ibid.*, p. 29.

small firm may be of little importance. Its actual or threatened entry presents no "real challenge" to the principal firms because it will simply "join the fringe of small firms living in the shadow of the dominant ones." Hence the elimination of such a prospective entrant would have little impact on competition. Further, "a merger between a very small factor—not one of the few dominant firms—in the market and a small concern from outside the market may increase, rather than lessen, competition by making the merged firm a more viable competitor."

The competitive consequences are less predictable when a very small firm is acquired by a substantial potential competitor: "The merger may increase competition in the market by injecting a substantial firm, one capable of challenging the dominant firms in the market, in place of a firm too small to be a significant competitive factor. But much would depend on the industry setting of the merger. Although individual mergers of this type may appear inoffensive or even salutary, the cumulative effect of a long series of such mergers by the leading firms in an industry—each capable of entering most markets by internal growth—may be to dry up the opportunities for growth of smaller enterprises which are much more dependent on merger as an entry device, and thereby impair competition in the long run."

Mergers among potential competitors most often harm competition when they involve "one of the dominant firms in a concentrated market and a substantial potential competitor. In such a case there is no improvement in the competitive structure of the market—for one dominant firm has simply been replaced by another—and substantial potential competition is eliminated." The Commission added, "The dominant firms in the market no longer have to concern themselves with the consequences of entry by the potential competitor; he is already in. Nor need they cope with any additional competition as a result of his entry; he has not increased the number of substantial competitors in the market but simply taken the place of one of those competitors."

The Commission emphasized that the competitive impact of mergers eliminating individual leading potential competitors is magnified in an industrial setting where the supply of potential competitors is shrinking, "whether due to technological or marketing reasons which make entry more difficult, or because of an industrywide merger movement eliminating (or threatening to eliminate) significant numbers of potential competitors. In this event, overall industry trends take on the same significance in evaluating the probable competitive impact of a market-extension merger as in evaluating horizontal and vertical mergers. Such background trends may also be useful in determining whether certain sanctions should be placed on mergers between small concerns and substantial potential competitors, which, as noted above, otherwise might not be thought anticompetitive."

The commission discussed additional circumstances in which market-extension mergers might injure competition. The substitution of a large, multimarket enterprise for a smaller one may both influence adversely competitive conduct among existing competitors and raise the barriers to entry confronting potential competitors.

In summary, the Commission concluded that market-extension mergers are most likely to have an adverse effect on competition when the following conditions are present: (1) Market concentration in the relevant economic market is already high or is becoming so. In these circumstances, competition among *actual* competitors is not likely to result in effective competition. (2) When markets are already concentrated, the continued presence of potential competitors may exercise a salutary influence upon market behavior, either because *actual* competitors price to forestall entry by potential competitors or because potential competitors become actual competitors. (3) Mergers that eliminate leading potential competitors, therefore, may adversely affect competition, particularly when both the acquired and acquiring concerns are potential competitors in one another's markets. (4) In determining whether the elimination of a particular potential competitor adversely affects competition, it is necessary to determine whether it is in fact a *probable* potential competitor. The elimination of such a firm takes on added significance when the number of potential competitors is declining for any of several reasons. (5) In addition to their impact on potential competition, market-extension mergers may impair competition if they tend to raise the barriers to entry confronting potential entrants. (6) The elimination of potential competitors by mergers does not always injure competition, even in concentrated markets. This is particularly true when the merging firms are small; such mergers may under some circumstances have a neutral effect on competition and, in others, they may actually enhance competition.

In addition to its order of divestiture, the Commission found "that full and adequate protection of the public interest requires the imposition of a 10-year ban against future fluid milk and ice cream mergers by Beatrice without the prior approval of the Commission." The decision to impose a ban on future mergers was based, in part, on the recognition that "there are many practical barriers to the restoration of acquired firms as effective competitors through divestiture, years after a merger has occurred."

GUIDELINES FOR FUTURE MERGERS

The *Beatrice* decision represented the last formal Commission decision involving the country's four leading dairies. The Commission said that it had attempted to "coordinate" and "harmonize" the various orders in these cases.

In its *Beatrice Foods* decision, the Commission also attempted to establish "clear and concrete legal standards for mergers for the guidance of businessmen." As the Commission put it, "Thousands of mergers have taken place in the dairy industry in the last 50 years. In an industry so prone to extensive merger activity, the need to develop standards which will be clearly understood by the industry, and which will prevent unlawful mergers without deterring lawful ones, is especially urgent."[32]

[32] *Ibid.*, p. 43.

The standards established by the Commission were based on the recognition that the economic environment of the dairy industry made inevitable the demise of many of the smallest firms in the industry. In fact, the very smallest firms "can no longer be regarded as an important source of potential competition in the concentrated dairy markets." Consequently, "medium-sized and large dairy firms must be relied on as the source of actual and especially potential competition in this industry." The Commission concluded that there were relatively few such substantial firms.

The Commission formulated the following standard with respect to future mergers by very large dairy concerns: "...we conclude that any acquisition of a not insubstantial dairy company by one of the industry's giants (roughly, a company having annual sales of more than $200 million) is highly suspect."

The Commission formulated the following standards for future mergers by medium-sized dairies. First, it indicated that it would not "sit idly by while firms now in, say, the $40 million to $60 million range engaged in acquisition programs calculated or likely to make them as large as [Beatrice]." It added, however, that not all mergers by medium-sized companies were suspect, particularly when they were not a part of an extensive merger program. But two kinds of mergers by medium-sized concerns were suspect. Mergers between medium-sized dairies (either horizontal or market extension) and horizontal mergers between medium-sized dairies and smaller ones (say, with sales of less than $10 million) where a merger eliminates a significant competitor in the same market. Stated positively, it appears competition will not be adversely affected when medium-sized dairies make small market-extension mergers or very small horizontal mergers, except when such mergers are part of an extensive merger program.

Finally, the Commission concluded that, on balance, mergers among smaller concerns were unlikely to impair competition: "Certainly mergers between firms too small to achieve the economies of scale made possible by the technological revolution in the dairy industry or to function as strong, effective competitors and penetrate into new markets are lawful."

ENFORCEMENT OF THE BEATRICE GUIDELINES

Since issuing the merger guidelines in the *Beatrice* opinion in April 1965, the Commission has brought only two complaints challenging dairy mergers. On December 22, 1965, the FTC issued a complaint challenging Dean Foods Corporation's proposed acquisition of Bowman Dairy, Chicago, Illinois.[33] The FTC believed these two dairies represented the type of "medium-sized" dairy processors that the FTC had concluded must increasingly "be relied on as the source of actual and potential competition in this industry."[34] Prior to the merger, Dean had sales of $73 million and Bowman had sales of $78 million. Both operated in several

[33] In the Matter of Dean Foods Co., Docket No. 8674.
[34] Beatrice, *op. cit.*, p. 44.

midwestern states and were direct competitors in the Chicago market, where in 1965 Bowman had ranked first in fluid milk sales with 11.3 percent of sales and Dean ranked fifth with 8.3 percent. Thus the merger involved both horizontal and market extension aspects, and in the Commission's view, represented a clear violation of the guidelines set forth in *Beatrice*.[35] After considerable legal complications the Commission issued its decision and final order in the matter November 14, 1966.[36] The FTC decision ordered Dean to sell the Bowman Dairy Co. and not to make further acquisitions in the fluid milk industry for the next ten years without prior approval of the Commission. However, a subsequent Commission order permitted Dean to maintain certain properties in the Chicago area but to dispose of those outside the area.[37]

In January 1974 the FTC issued a complaint challenging the acquisition by Deltown Foods, Inc. of New York City of Kraftco's fluid milk production and distribution facilities in New York City. This acquisition involved a horizontal merger between the fourth and sixth largest fluid milk distributors in the area. The complaint alleged that Deltown's market share was about 11 percent and Kraftco's about 8 percent. Prior to the acquisition the four largest dairies accounted for 45.9 percent of area sales and the top eight for 71.5 percent.

On January 10, 1975, the Federal Trade Commission accepted an agreement with Deltown Foods containing a consent order requiring Deltown to divest the acquired milk processing plant and to divest half of the acquired customer volume. Some additional provisions of the order:

> Require Deltown to terminate a trademark license agreement with Kraftco which licensed Deltown to process and distribute Sealtest and Light and Lively fluid milk products.
>
> Place a 10-year ban on future acquisitions by Deltown of fluid milk processing facilities or distribution routes in New York City and of fluid milk processing facilities within 150 miles of New York City which processed 26 million pounds of milk in the 12 months prior to the challenged acquisition.

Although the FTC challenged only two dairy mergers since 1965, in the course of enforcing the five orders—involving Beatrice, Borden, Kraftco, Foremost and

[35] Actually, however, the merger was far from a clear-cut violation, since Dean alleged that it acquired Bowman purely as a defensive matter. Its largest account, the Jewel Tea retail food chain, had announced its intention to build its own fluid milk operations. Thus the merger did not promise to increase the concentration of sales by as much as the 1965 market share data suggested. Moreover, Bowman, while not a failing company, had sustained substantial losses on its fluid milk operations during 1960-65. See dissenting opinion of Commissioner Elman, Docket 8674, p. 7.

[36] This case assumed special significance because it was the first establishing the FTC's authority to seek a preliminary injunction prohibiting the consummation of a merger until its legality has been established. The Supreme Court made this finding after the merger had been consummated. *Federal Trade Commission vs. Dean Foods Company*, 384 U.S. 597 (1966). However, on July 18, 1966, the Seventh Circuit Court of Appeals subsequently entered an order restraining Dean from making material changes with respect to Bowman's operations for a period of four months.

[37] Whereas the challenged acquisition had sales of $76 million at the time of acquisition, the Commission required Dean to dispose of properties with sales of $12 million. Source: Bureau of Economics, Federal Trade Commission.

Dean—that require premerger approval for a period of ten years, together with the effect of its guidelines on large dairies not under such orders, it has had an enormous impact on the course of merger activity over the past decade. One dimension of this policy is the manner in which it has enforced its ten-year bans on future mergers.

ENFORCEMENT OF PREMERGER APPROVAL ORDERS

As noted earlier, the Commission had orders or consent agreements with five corporations requiring that they not acquire fluid milk or ice cream concerns without first receiving approval from the FTC. These orders were part of the FTC's policy objective of channeling the direction of merger activity away from the largest dairies while not foreclosing completely all mergers.

All of the companies under order have requested approval for one or more acquisitions since 1964. The number of requests for such approval and the actions taken on them are summarized in Table 2-2. Of the 16 requests made between January 1, 1964, and December 31, 1975, all but three were approved by the Commission. In addition to 13 approved acquisitions, seven other transactions involving milk and ice cream routes and other partial acquisitions were approved by the FTC (Table 2-2). Beatrice made six and Borden four of the requests.

Table 2-2. Approved and Disapproved Requests for Acquisition of Dairy Processors by Dairy Companies Under FTC Orders, 1964-75

Year	Dairy Company					
	National	Beatrice	Foremost	Borden	Dean	Total
1964	1	0	1a	1	0	3
1965	1	0	0	0	0	1
1966	1	1	0	0	0	2
1967	0	1	0	0	0	1
1968	2	0	0	0	0	2
1969	1	1a	0	0	0	2
1970	0	1	0	0	0	1
1971	0	0	0	0	1a	1
1972	0	0	0	0	1	1
1973	0	0	0	0	1	1
1974	0	0	0	0	0	0
1975	0	0	0	0	1b	1
Totals	6	4	1	1	4	16

a Acquisition not approved by the Commission.

b The FTC approved this request February 11, 1976.

Note: The following transactions engaged in by the dairy companies under order were not included in making this and the following tabulations:

Transaction	Number
Acquisition of milk routes	3
Acquisition of ice cream routes	1
Purchase of improved realty	2
Purchase of delivery trucks	1
Acquisition of company in different line of business	1

Source: Information supplied the authors by the Federal Trade Commission.

Most of the proposed acquisitions involved small companies and most apparently were in precarious financial condition. Eight of the fourteen for which information was given had experienced a net loss in the year prior to the proposed acquisition (Table 2-3).

The proposed acquired companies had combined sales of $84.6 million (Table 2-3). The three denied requests involved acquisitions with total sales of about $32 million; the 12 approved acquisitions had about $53 million.

The apparent effect of the orders was to strictly limit mergers by the largest companies. Apparently the largest dairies felt that they had little chance for approval unless the proposed acquisition was small and in poor financial condition.

The largest proposed merger denied by the FTC was Dean Food Company's request in 1970 to acquire McArthur Jersey Farm Dairy, Inc., Miami, Florida. This premerger clearance was required by the terms of a Commission order, discussed above, which requires Dean to obtain prior approval for any dairy acquisition it wishes to make prior to May 29, 1977. At the time, Dean had fluid milk sales of about $100 million and McArthur had sales of $23.3 million. The merger was a geographic market extension merger between dairy distributors located more than 500 miles apart. In *Beatrice* the Commission announced it did not object to such mergers by medium-size dairies unless they were part of an extensive merger program of the acquiring firm. Although the merger did not appear to violate the Beatrice guidelines for medium-size dairies, the FTC denied Dean's request.

Table 2-3. Financial Condition of Proposed Acquired Firm in Year Before Request was Made and Total Sales of Acquired Company, 1964-1975

Year	Number of Companies	Financial Condition		Combined Sales (Millions)
		Net Profit	Net Loss	
1964	3a	0	2	$ 4.4
1965	1	1	0	2.7
1966	2	0	2	1.5
1967	1	0	1	2.4
1968	2	1	1	.4
1969	2	1	1	9.1
1970	1	0	1	.2
1971	1	1	0	23.3
1972	1	1	0	10.9
1973	1	1	0	17.7
1974	0	0	0	0.0
1975	1a	0	0	12.0
Total	16	6	8	$84.6

a No information of the profitability of one company.

Source: Information supplied the authors by Federal Trade Commission.

In two subsequent actions in 1972 and 1973, the Commission approved Dean's request for permission to make acquisitions.[38] One of these, McCadden Cheese Company, Inc., New York, had sales of $10.9 million, but did not process fluid milk.[39] The other involved Dean's reacquisition of certain Bowman Dairy properties which the FTC had ordered Dean to divest. Dean was the only bidder for these properties at a public sale.[40] These properties had sales of $17.7 million.

Thus, prior to its new policy toward dairy mergers announced July 3, 1973 (Chapter 6), the FTC permitted only 12 acquisitions by the five dairies under Commission orders requiring premerger approval. With the exception of the McCadden Cheese acquisition and the reacquisition by Dean of certain Bowman Dairy properties, all approved acquisitions involved small fluid milk companies.

On November 5, 1975, the FTC announced that Dean Foods had requested permission to acquire R. Bruce Fike & Sons Dairy, Uniontown, Pennsylvania.[41] Bruce Fike was the sixth largest seller of fluid milk in the Pittsburgh metropolitan area and had 1974 sales of about $12 million. This was a geographic market extension merger well outside Dean's existing marketing area. Although the FTC's guidelines

Table 2-4. Sales of Proposed Acquisitions by Dairy Processors Under FTC Orders, 1964-1975

Sales (000)	Number of Companies
Under $250	4
350-500	2
500-750	0
750-1,000	0
1,000-2,000	2
2,000-3,000	3a
3,000-4,000	0
4,000-5,000	0
5,000-10,000	1a
10,000-20,000	3
20,000-30,000	1a
Total	16

a Request for approval was denied by the Commission for one proposed acquisition in this size class.

Source: Information supplied the authors by the Federal Trade Commission.

required its staff to investigate the acquisition, based on the available evidence it seems highly improbable that the merger would adversely affect competition. Moreover, the proposed merger clearly fell in the category of mergers approved by the Commission in its *Beatrice* guidelines, a small market extension merger by a regional dairy. On February 11, 1976, the FTC approved Dean's request to acquire Bruce Fike. However, Dean subsequently called off the merger.

Before turning to an analysis of the apparent impact of the FTC's merger policy as initially set forth in *Beatrice,* as well as an evaluation of the probable consequences of the new policy enunciated in 1973, we shall examine briefly the changing industrial setting within which the FTC's merger policy has been applied in the past and must be applied in the future.

[38] As shown in Table 2-3, both were profitable in the years prior to acquisition.
[39] The sales figures for these two acquisitions appear in Table 2-3.
[40] Federal Trade Commission, News Release, "FTC Publicizes Correspondence Concerning Dean Foods Retention of Insolvent Firm," April 11, 1973.
[41] *FTC News,* "Dean Foods Asks Commission to Approve Proposed Acquisition," November 5, 1975.

CHAPTER THREE-THE CHANGING INDUSTRIAL SETTING

The dairy industry is comprised of a number of distinct industries. Finished milk products are divided into two broad classes, processed fluid milk and manufactured milk products. The former involves the processing, bottling and distribution of fluid milk. The bulk and relative perishability of fluid milk usually dictate that it be processed and marketed in local or regional markets.

Separate dairy industries have developed around the manufactured products (butter, natural and processed cheese, canned evaporated, and dried milk). Because they are less perishable and bulky, these products can be transported long distances and are sold in national markets. Historically, firms tended to specialize in particular processed or manufactured products, and even today many firms are still quite specialized to a particular product.

In 1972, the dairy industries made total shipments valued at $14.5 billion (Table 3-1). Fifty-three percent—$7.7 billion—of these shipments were made by plants processing fluid milk and related products. The Bureau of the Census reported that in 1972 there were 2,024 firms in the fluid milk and related products business. The largest dairy products corporations, such as Kraftco, Borden and Beatrice, engaged in all segments of the industry. Medium-size corporations also frequently engaged in several segments of the industry. Most smaller companies in each segment of the industry tended to specialize in particular processed or manufactured products. However, even small fluid milk firms often made some related products and many made ice cream and cottage cheese. The fluid milk industry is the largest of the dairy industries, both in value of shipments and number of firms.

Table 3-2 provides a profile of the changing number and size structure of *corporations* engaged in *all* segments of the dairy industries for the period 1960-61 to 1971-72. (These are the most recent data available from this source.) In just eleven years the number of corporations engaged primarily in the dairy industry fell by over one-half.[42] As shown below (Table 3-7), the number of *noncorporate* dairy firms declined even more. Corporations in all size classes below $5 million in assets declined, with the most precipitous decline occurring in the smallest size class. The number of firms in each of the $5 million to $50 million size classes more than doubled.

[42] The Internal Revenue Service classifies firms by their primary line of business. All of the largest dairies are highly diversified into areas outside dairying.

Relatively few concerns held most of the assets of firms whose principal line of business was dairy processing and manufacturing (Table 3-2). In fiscal 1971-72, the eight largest dairy corporations, seven with assets exceeding $100 million, held 68.9 percent of the assets of all corporations whose main line of business was dairy processing and manufacturing. This contrasts with only 48.1 percent held by the nine largest of 1960-61. Most of these largest corporations were extensively diversified into fields outside the dairy industry (see Chapter 4). On the other hand, most corporations with assets below $100 million were engaged primarily in dairy processing and/or manufacturing, and most were engaged primarily in the fluid milk and ice cream business. Table 3-2 is useful in showing the vast disparity in size and potential economic power of corporations in the dairy business.

Table 3-1. Total Sales of Processed and Manufactured Dairy Products for 1972

Milk Product	Value of Product Shipments a/ (000)		Percent		Number of Firms d/
Creamery Butter	$ 791		5.5%		201
Natural & Processed Cheese	2,754		19.1		739
Condensed and Evaporated Milk	1,723		11.9		172
Ice Cream and Ices	1,519		10.5		561
Fluid Milk & Related Products	7,663		53.0		2,024
Packaged Fluid Milk & Related Products	$5,079		35.2%		N.A.
Bulk Fluid Milk & Cream	1,259		8.7		N.A.
Cottage Cheese b	341		2.4		N.A.
Flavored Milk Products c	423		2.9		N.A.
Miscellaneous Fluid Products	561		3.9		N.A.
Totals	7,663	$14,450	53.0	100.0%	e

a Includes total shipments in various product classes.
b Includes baker's cheese, pot cheese, and farmer's cheese.
c Includes buttermilk, chocolate milk, and other flavored milk products.
d Firms identified by primary product. Actual number of firms making particular products may be greater. The number probably most understates the number of firms that make ice cream, since all large and medium, and some small, fluid milk companies process some ice cream.
e Number of firms not additive because many firms make more than one product.

Source: ***Concentration Ratios in Manufacturing*, 1972 Census of Manufactures, Special Report, Bureau of the Census, U.S. Department of Commerce, October 1975, pp. SR2-51-52.**

Table 3-2. Dairy Processing and Manufacturing Corporations by Asset Size Class, 1960-61 to 1971-72

Assets (Millions)	Number of Corporations		Change	Total Assets (Millions)		Percent of Total Assets	
	1960-61	1971-72		1960-61	1971-72	1960-61	1971-72
Under $.5	3,390	1,418	−1,972	$ 506	$ 223	14.8%	3.4%
$.5 to $1	429	330	− 99	272	243	8.0	4.1
$1 to $5	347	313	− 34	660	667	19.3	11.3
$5 to $10	20	42	+ 22	141	263	4.1	4.5
$10 to $25	10	20	+ 10	141	266	4.1	4.5
$25 to $50	2	5	+ 3	53	166	1.5	2.8
$50 to $100	4	1	− 3	251	59	7.3	1.0
$100 and Over	5	8	+ 3	1.397	3.999	40.8	67.9
Total	4,207	2,137	−2,070	$3,421	$5,886	100.0%	100.0%

Source: Internal Revenue Service Source Book on Corporate Income Taxes, 1960-61 and 1971-72.

Table 3-3. Employment, Payroll, Production Workers and Man-Hours, Capital Expenditures and Value Added of the Fluid Milk Industry from 1958-72

Year	Value Shipments	All Employees	Production Workers	Capital Expenditures	Value Added	Value Added Per Production Worker Man-Hour
	(Millions)	(000)	(000)	(Millions)	(Millions)	
1958	$6,412	212	86	$136	$1,998	$10.96
1959	6,649	207	84	148	2,125	11.94
1960	6,763	204	80	121	2,165	13.52
1961	6,835	199	75	118	2,190	14.27
1962	6,889	196	71	117	2,266	15.84
1963	7,026	185	69	126	2,203	14.98
1964	7,299	183	68	140	2,272	15.57
1965	7,185	178	63	115	2,259	16.55
1966	7,435	169	61	105	2,232	17.25
1967	7,826	165	61	120	2,351	18.60
1968	8,035	155	55	110	2,414	20.59
1969	8,121	150	54	119	2,316	20.28
1970	8,233	141	50	143	2,443	23.45
1971	8,530	131	46	146	2,511	26.19
1972	9,396	126	48	149	2,552	25.76
Percent Change 1958-72	+46.5%	−40.5%	−44.2%	+9.6%	+27.7%	+135.0%

Sources: *Industry Profiles, 1958-70,* U.S. Department of Commerce, Bureau of Domestic Commerce, p. 10.

Annual Survey of Manufactures, 1970-71, U.S. Department of Commerce, Bureau of the Census.

Industry Series, "Dairy Products", 1972 Census of Manufactures, U.S. Department of Commerce, Bureau of the Census, p. 6.

EMPLOYMENT, CAPITAL EXPENDITURES AND PRODUCTIVITY

Fluid milk is not a growth industry. Between 1958 and 1972 value of shipments increased at an average annual rate of only 3 percent a year (Table 3-3). After adjusting for inflation, the value of industry output remained virtually unchanged over the period.

Although industry demand was very nearly static, important changes occurred in employment and capital expenditures. Between 1958 and 1972 the number of employees fell by 40.5 percent and the number of production workers by 44.1 percent (Table 3-3). The level of annual capital expenditures varied between $105 million and $149 million over the 15-year period. Although total value added by manufactures rose modestly (27.7 percent), reflecting the slow industry growth, value added per production worker man hour rose rapidly, from $10.96 to $25.76 (135 percent). This latter increase reflects the increasing productivity in the industry as the industry adjusted to more efficient manufacturing capacity.

ECONOMIES OF SCALE IN FLUID MILK PROCESSING

In its *Beatrice* decision the FTC concluded on the basis of the record before it that fluid milk plants required a volume of at least 6,000 quarts a day in order to utilize at capacity the minimally efficient size automatic paper packaging machine. It noted that as of 1961-62, fully 70 percent (4,900) of all fluid milk plants were too small to operate such a machine at capacity.[43] This finding was fundamental to its conclusion that economies of scale would dictate the demise of many small companies, and its policy decision to channel the resulting numerous merger candidates away from the largest firms to smaller and medium-size dairy processors.

Recent empirical studies indicate economies of scale may be substantially larger today than in the early 1960's. A 1970 report by a number of leading dairy marketing experts from several midwestern universities concluded, based on a survey of the available studies, that total per unit costs dropped sharply with increasing volume up to 40,000 to 50,000 quarts per day and continued to decline up to a volume of 120,000 quarts.[44] However, the difference in costs between 50,000 quart and

[43] *Beatrice Foods, op. cit.,* p. 23.

[44] S. W. Williams, *et. al., Organization and Competition in the Midwest Dairy Industries,* Iowa State University Press, 1970, p. 47.

120,000 quart plants was only 0.6 cents per quart. A saving of this size could easily be more than offset by greater transportation costs if the larger plant were compelled to reach out substantial distances to dispose of its output.[45] The authors further found that specialized glass or prefabricated plastic bottling plants can operate at well below the 40,000 to 50,000 quart-a-day range without incurring higher costs.

A 1973 FTC economic report asserted that there are several ways in which a 40,000 quart-a-day plant can achieve practically all of the economies of scale achievable by larger plants. First, "nearly all managers" interviewed by the FTC staff "expressed the view that plants of about 40,000 quarts-a-day capacity could achieve most all of the available economies of processing."[46] Additionally, the FTC study noted that 25 percent of the plants operated by multiplant dairies and integrated food chains were in the size range from 40,000 to 80,000 quarts-a-day (another 20 percent were smaller). The FTC study viewed this as significant because:

> This group of companies has had the greatest opportunity to avoid operating inefficient size plants. Multiplant firms generally serve single regions from two or more plants. If the scale advantages that could be achieved by consolidating production in a single plant were large, it would seem that there would have been a greater movement on the part of these companies to consolidate sales. A large proportion of the vertically integrated plants were newly constructed in the last few years. If size were a serious disadvantage they probably would never have been constructed.[47]

Even though the fast changing technology in plants is probably moving up this lower size limit at which most of the in-plant economies of scale can be picked up, it is probable that this lower size limit still falls within the 40,000 to 80,000 quarts per day range, most likely within the upper part of the range.

This would not mean every fluid milk plant in the U.S. must be in this size range to survive as an effective competitor. Rather under certain circumstances there exist offsetting factors influencing costs. Several factors treated in the research literature appear especially relevant here. They are:

[45] The cost of hauling milk in tractor trailers to large wholesale accounts located 180 miles from a fluid milk plant ranges from .85 cents to 1.69 cents per quart depending on size load. W. C. Conner and T. P. McCullouch, *Cost Analysis of Distributing Milk in Outside Markets,* Virginia Polytechnic Institute, Agricultural Experiment Station Bulletin, No. 68, December 1971.

[46] Russell C. Parker, *Economic Report on the Dairy Industry, Staff Report to the Federal Trade Commission,* March 19, 1973 (hereafter cited as FTC Dairy Report), p. 87.

[47] *Ibid.,* p. 78. In support of this observation, it may be pointed out that Southland Corporation, Cumberland Farms, and the two A & P plants are all less than 300,000 quarts through-put per day. About three of five Kroger plants, some new, have through-put of 300,000 or less quarts per day, and the other two approach half-million. One of Borden's most profitable operations is a plant of around 200,000 quarts. Jewel Tea plant in Chicago presently puts out around 600,000 quarts but is designed so that capacity can be greatly increased by adding filling machinery.

(1) The more highly specialized plant can be much smaller than the more diversified plant. For example, the plant that packages only in paper and puts out only, say, a half dozen products can be efficient at a smaller size than one that packages in paper, glass, and plastic and puts out, say, two dozen products,

(2) Economies in distribution are not closely related to plant size except that the plant must be large enough to supply a multi-unit food chain buyer with adequate volume of products of uniform quality within a practical distance from his stores, handle the necessary billing and such.

(3) Besides being greater than processing costs, selling and distribution costs per unit of product are harder for the processor to control and they show greater variation than processing costs. In absolute cents-per-unit terms, the difference between full and limited service is substantially greater than the typical difference found in unit processing due to differences in plant sizes and plant utilization rates.[48] The FTC cited an example where the difference between full service and limited service to wholesale customers was 3.7 cents per half gallon. This difference is nearly twice as large as the cost savings of 2.0 cents per half gallon in a 800,000 quart-per-day plant compared to a 100,000 quart plant. Therefore, a dealer with a medium-sized plant and efficient distribution might have costs as low as a dealer with much larger plant with less efficient distribution.

(4) Within limits, fitting the design and organization of the plant to the operation of the dealer is more important than the absolute through-put capacity of the plant, based on conversations with dealers. For example, Southland Corporation with a large captive market of convenience stores typically builds a plant of about 125,000 quart daily capacity designed for packaged milk transportation and unloading according to corporate plans.

(5) Beyond the size range of 40,000-80,000 quarts per day, the major reasons for larger plants may be new containers such as the in-plant fabricated single service plastic gallon and half-gallon; (these machines cost about $250,000 each), or a high level of automation to replace as much labor as possible. Since the new containers are largely for purposes of nonprice competition, there is some question as to the real gains to the economy from such technological innovations that require very large plants.

(6) The medium sized processor of 40,000-80,000 quart volume can compete for the milk business which is not connected with the very largest corporate chain supermarkets. Manchester reports that the home-delivery market and non-supermarket portions of the wholesale market account for about 70 percent of all milk distributed in 1969.[49]

[48] FTC Dairy Report, *op. cit.*, p. 90.

[49] Alden Manchester, "Pricing Milk and Dairy Products," Marketing Research Report No. 997, E.R.S., U.S.D.A., 1971, p. 8.

(7) Between 1971 and 1975 the number of plants bottling less than 1.5 million gallons annually declined from 1,579 to 1,055, whereas those in the 1.5 million to 5 million class remained steady at about 400 (Table 3-5). The average size plant in the latter category bottled somewhat over 40,000 quarts daily. The number of plants processing 5 million gallons or more annually increased from 344 to 400, or 16 percent. The relative stability in the number of plants in the 40,000 quarts per day class suggests plants of this size are able to operate efficiently in many circumstances.

(8) Of the 25 largest independent fluid milk processing firms in Wisconsin in 1973, 20 processed less than 80,000 quarts per day, and 15 process less than 40,000 quarts per day.[50] The largest five range from 150,000 to 300,000 quarts in the plants in this state. Ten or so have operated profitably for over a decade while processing less than 12,000 quarts per day in medium-size local markets of less than 50,000 population.

Table 3-4. Number of Companies Operating Viable Packaged Fluid Milk Plants by Type of Companies, 1971

Types of Companies	Number of Companies	Number of Plants		
		Processing Quarts a Day		
		40,000-80,000	80,000 and Over	Smaller Plants
All Companies Operating At Least One 40,000 Quart or Larger Plant	364	255	361	85
Proprietary	289	210	269	35
4 Largest National Companies	4	37	83	23
Other Multiplant	16	27	63	12
Single Plant	269	146	123	—
Cooperative	37	28	42	28
Large Bargaining Cooperatives	6	10	17	8
Other Multiplant	14	11	15	20
Single Plant	17	7	10	—
Vertically Integrated Food Retailers	38	17	50	22
Supplying Own Stores	36	8	38	11
Also Selling to Others	2	9	12	11

Source: FTC Dairy Report, *op. cit.*, p. 88.

[50] Estimated from Wisconsin Income Tax records.

If we assume that dairy processing plants must bottle 40,000 to 80,000 quarts per day to achieve minimum optimum size, then just how many plants are there of this size, and how many plants of this size can a market sustain? Table 3-4 answers the first question. In 1971, there were 255 such plants. Of these, 37 (14.5 percent) were owned by the top four dairies, another 27 (10.6 percent) were owned by other multiplant corporations and 146 (57.3 percent) were owned by single-plant proprietary corporations. Another 28 (11.0 percent) were owned by farmer-owned cooperatives and 17 (6.7 percent) were owned by vertically integrated food retailers. By 1975 the number of *plants* bottling over 5 million gallons annually (about 60,000 quarts or more per day) increased by over 20 percent (Table 3-5). Although it is not possible to determine the ownership of these plants in 1975, some of the additional large plants were owned by independent dairies. The number of plants in the 1.5 million to 5 million gallons annually remained about the same. This suggests that many plants processing about 40,000 quarts daily or less remain viable.

Table 3-6 shows for 1970 the percent of consumption accounted for by a 40,000 and a 80,000 quart-a-day plant in the 20 largest metropolitan areas. These percentages show an 80,000 quart-a-day plant represented less than 2 percent of consumption in New York and 10.6 percent in St. Louis, the 10th largest city. It may further be noted that a plant's share would not necessarily be this high, because a firm with 80,000 quarts per day might be expected to distribute at least 25 percent of its output outside an SMSA area. Moreover, for the reasons discussed above, some plants operating a 40,000 quart-a-day plant, or less, may be able to remain as viable competitors. Therefore, the minimum optimal size plant for many fluid milk firms may lie in the 40,000 to 80,000 quart-a-day range. This is important because it explains the extent to which economies of scale in production make it inevitable that sales become highly concentrated among a relatively few sellers if those served have small total fluid milk sales. Because of the reasons discussed above, the maximum levels of concentration due to plant economies of scale probably lie between the percentages shown in Table 3-6 for 40,000 and 80,000 quart-a-day plants. At one extreme, the maximum four-firm concentration ratio for New York City would need to be between 3.6 percent and 7.2 percent, whereas in Atlanta it would lie in a range between 34.0 percent and 68.0 percent. As discussed below, in recent years the expansion of interstate highways and other factors have enabled most plants to serve more than a single metropolitan area. These facts suggest that high seller concentration is not necessarily inevitable in most fluid milk markets despite the substantial increase in economies of scale in production. The FTC study concludes, optimistically, that less than one-fourth of the U.S. population lives in markets where plant economies of scale require four-firm concentration in excess of 30 percent.[51]

[51] *Ibid.*, p. 89.

Table 3-5. Distribution of Fluid Milk Processing Plants in the U.S., 1971 and 1975

Gallons Annually (000)	1971	1975	Percent Change
Less than 100	369	275	−25
100-299	569	354	−38
300-1,499	641	426	−34
1,500-4,999	405	400	− 1
5,000-14,999	228	286	+25
15,000 or more	96	114	+19
Total Plants with Known Production	2,308	1,855	−20

Source: Statistical Analysis of Dairy Processor-Market Guide, Dairy Food Industries Supply Association, Inc., 1975, Washington, D.C.

Table 3-6. The 20 Most Populated U.S. Standard Metropolitan Statistical Areas, Fluid Milk Product Consumption and the Share of Consumption Represented by a 40,000 and a 80,000 Quart-a-Day Plant, 1970

Standard Metropolitan Statistical Area	Population a (Number) 1970	Consumption of Packaged Fluid Milk Products (thousands of pounds) b	Percent of Consumption Accounted for by Plants Processing 40,000 Quarts Daily	Percent of Consumption Accounted for by Plants Processing 80,000 Quarts Daily
1. New York, N.Y.	11,528,649	3,020,506	0.9%	1.8%
2. Los Angeles-Long Beach, Calif.	7,032,075	1,694,730	1.5	3.0
3. Chicago, Ill.	6,978,947	1,751,716	1.5	3.0
4. Philadelphia, Pa.	4,817,914	1,059,941	2.5	5.0
5. Detroit, Mich.	4,199,931	1,138,181	2.3	4.6
6. San Francisco-Oakland, Calif.	3,109,519	749,394	3.5	7.0
7. Washington, D.C.-Md.-Va.	2,861,123	629,447	4.1	8.2
8. Boston, Mass.	2,753,700	859,154	3.0	6.0
9. Pittsburgh, Pa.	2,401,245	528,274	4.9	9.8
10. St. Louis, Mo.-Ill.	2,363,017	489,145	5.3	10.6
11. Baltimore, Md.	2,070,670	455,547	5.7	11.4
12. Cleveland, Ohio	2.064,194	547,011	4.8	9.6
13. Houston, Texas	1,985,031	410,901	6.3	12.6
14. Newark, N.J.	1,856,556	486,418	5.3	10.6
15. Minneapolis-St. Paul, Minn.	1,813,647	493,312	5.5	11.0
16. Dallas, Texas	1,555,950	387,432	7.4	14.8
17. Seattle-Everett, Wash.	1,421,869	351,202	7.6	15.2
18. Anaheim-Santa Ana-Garden Grove, Calif.	1,420,386	342,313	7.3	14.6
19. Milwaukee, Wis.	1,403,887	352,376	7.3	14.6
20. Atlanta, Ga.	1,390,164	305,836	8.5	17.0
Total	65,028,474	16,052,836		

a U.S. Department of Commerce, News Release CB71-46, dated March 23, 1972.

b U.S. Department of Agriculture, Fluid Milk and Cream Report, May 1971, Table 10. Milk consumption is not perfectly correlated with population because of differences in per capita milk consumption.

Source: FTC Dairy Report, *op. cit.*, p. 89.

RECENT STRUCTURAL CHANGES

Growing economies of scale in fluid milk processing has placed the small firm at an increasing cost disadvantage. The result has been an enormous decline in the number of independent fluid dairy processors. Between 1950 and 1960 the number of fluid milk processors declined at an annual rate of just over 4 percent, accelerating thereafter to an annual rate of about 8 percent. Over the entire 24-year period, 1950-74, the number of fluid milk plants had decreased by 80 percent (Table 3-7).

Despite the enormous decline in the number of fluid milk firms in recent years, there has been only a modest increase in the concentration of total U.S. fluid milk sales. Nationally, the top four's share of fluid milk rose between 1950 and 1958; it declined thereafter until by 1972 it was back to the 1950 level (Table 3-8). The share of the fifth through eighth largest tripled between 1950 and 1972. Between 1958 and 1972 the shares held by the ninth through 50th largest nearly doubled.

Table 3-9 presents another estimate of national market shares—the shares of individual companies. The significance of these comparisons is that all but one (Beatrice) of the top four lost market shares between 1958 and 1970, and that three of the second four largest in 1958 were displaced by other firms. Appendix C shows the market shares of the 20 largest fluid milk processors in 1967.

Table 3-7. Number of Fluid Milk Processors, 1950-1974

Year	Number of Processors	Annual Rate of Decrease Over 5-Year Period
1950	8,185	
1955	6,726	3.9%
1960	5,328	4.6
1965	3,743	6.8
1970	2,216	9.9
1974	1,619	7.8

Note: Excludes producer distributors.

Source: A.C. Manchester, *Market Structure, Institutions and Performance in the Fluid Milk Industry*, Agricultural Economic Report No. 248, ERS, USDA, p. 3 for 1950 to 1970. Data for 1974 supplied to the authors by Manchester.

Table 3-8. National Concentration of Fluid Milk Production, 1934-1972

Year	Four Largest Firms	5th through 8th	9th through 20th	21st through 50th
1972	17%	9%	15%	13%
1967	21	8	11	9
1963	22	7	9	8
1958	23	6	8	7
1954	20	5	N.A	N.A.
1950	17	3	N.A.	N.A.
1934	17	1	N.A.	N.A.

Source: FTC Dairy Report, *op. cit.*, p. 56, for 1934 to 1954. *Concentration Ratios in Manufacturing, op. cit.*, p. SR2-52, for 1958 to 1972.

Table 3-9. Eight Largest Dairy Processors Share of Fluid Milk Products Sold in 1958 and 1970

Company	Share of U.S. Sales 1958	1970
Borden	9.2%	6.3%
Kraftco	8.9	6.3
Foremost	4.3	2.6
Beatrice	3.4	3.6
Top 4	25.8%	18.8%
Carnation	2.3	2.0
Arden	1.4	1.1
Fairmont	0.9	1.9
Pet	0.6	1.3
Southland	N.A.	2.2
Safeway	N.A.	2.2
Dairylea Cooperative		2.1
5th to 8th largest	5.2	8.5
8 largest	31.0%	27.3%

Sources: 1958 represents shares of processed fluid milk shipments at reported in *The Matter of Beatrice Foods*, Docket No. 6653, Commission decision, March 2, 1964, p. 16. 1970 market shares of companies share of Class I milk sales, FTC *Dairy Report, op cit.*, p. 61. All Sales figures are for physical volume of sales rather than the dollar value of such sales.

National concentration ratios indicate the relative positions of the leading firms in the nation as a whole. But since fluid milk firms compete in essentially local or regional markets, the relevant economic market is much smaller than the nation as a whole. It is impossible to define precisely the relevant geographic market. Indeed, appropriate market boundaries frequently change because of changing milk handling and transportation technology, and varying institutional barriers to the movement of milk (health regulations, etc.) . Nonetheless, the major area of competitive rivalry centers primarily in metropolitan areas and adjacent communities. It therefore continues to be meaningful to measure the degree of sales concentration in metropolitan areas.

Local four-firm concentration ratios for the period 1950-65 are presented in Table 3-10. The firms included in each market are those regulated as pool handlers by the Federal Milk Marketing Order. They also are classified by market size as measured by the volume of fluid milk sold by these plants.

The concentration ratios in Table 3-10 differ significantly from those of Table 3-9 in two important respects. First, local concentration ratios (four-firm) are universally higher than national concentration ratios because the market for fluid milk is not national in scope.

Second, local concentration ratios increased between 1950 and 1965, with the largest increases occurring in the smallest markets. There were substantial differences among markets of various sizes; in 1965 the four largest sellers accounted for 88 percent of sales in the smallest market class and 48 percent in the largest. This difference in concentration occurs because a large market can accommodate more efficient size firms, or, put differently, economy-of-scale entry barriers are greater the smaller the size of the market.

Dairy marketing experts generally agree that relevant economic markets are larger than most individual metropolitan markets because of the relative ease of shipping fluid milk substantial distances. Some economists therefore have reasoned that *potential* as well as *actual* suppliers to a particular city should be used in computing market concentration ratios. Reflecting this reasoning, Manchester recently computed concentration ratios based on a universe that included the total sales of some small and all large fluid milk plants within a 250 mile radius of a central city regardless of whether particular plants ship any milk to the city.[52] Using this approach, Table 3-11 summarizes for 1969-70 the four-firm concentration ratios of 144 central cities. The average four-firm concentration ratio of 46.9 percent is well below that shown in Table 3-10.

[52] Plants located between 51 and 250 miles from the market center were excluded if they had monthly sales of less than one million pounds of fluid milk products and their actual sales adjusted by a factor representing transportation costs to the market if they sold more than one million pounds per month. A.C. Manchester, *Market Structure, Institutions, and Performance in the Fluid Milk Industry*, Agricultural Economic Report No. 248, ERS, USDA, 1974, p. 9.

Table 3-10. Average Share of the 4 Largest Fluid Milk Dealers, Based on Volume of Milk Processed, 72 Federal Milk Order Markets, Specified Years 1950-65

Size of Market (Millions of Pounds a Month)	Share of Volume Processed a						
	1950	1953	1956	1959	1962	1964	1965
Under 8	66.7%	71.4%	77.6%	81.0%	89.1%	87.6%	88.1%
8-15.9	56.9	64.2	66.9	77.4	79.8	80.2	82.8
16-23.9	56.7	63.3	65.1	62.8	66.7	71.3	76.0
24-59.9	55.9	57.1	58.1	57.0	57.6	60.3	63.3
60 or More	45.3	43.4	43.9	41.0	42.8	45.6	47.8

a Calculated as a link index from available data, March of each year, except December 1965. Based on volume processed by pool handlers regulated by the particular Federal order. Includes volume of products moving out of the market area and excludes volume of products coming into the area from other processors.

Source: A.C. Manchester, *The Structure of Fluid Milk Markets*, Agricultural Economics Report No. 137, E.R.S., U.S.D.A, p. 34.

Table 3-11. Structural Characteristics of 144 Fluid Milk Markets, by Market Size, 1969-70

Market Size, Mil. Lbs. Per Month	Markets	Average Plants	Average Market Share: 4 Largest Firms
	No.	No.	Percent
3-9 (av. 6)	8	10	79.9
10-19 (av. 15)	13	16	72.2
20-29 (av. 25)	19	22	60.8
30-49 (av. 38)	23	29	53.3
50-74 (av. 57)	19	47	46.7
75-99 (av. 87)	14	58	39.5
100-199 (av. 148)	34	100	30.1
200-474 (av. 315)	14	137	23.3
All Markets (av. 93)	144	58	46.9

Source: Alden C. Manchester, *Market Structure, Institutions, and Performance in the Fluid Milk Industry*, Agricultural Economic Report No. 248, ERS, USDA, January 1974, p.11.

This methodology provides additional insight into the question of sales concentration of actual and potential competitors in fluid milk markets. Nonetheless, it suffers from the defect that it implicitly assumes potential competitors exert the same influence on competitive behavior as actual competitors, thereby linking all "submarkets" within a 250-mile radius to such a high degree that they all may be assumed to be in the same relevant economic market, i.e., subject to the same competitive forces. This assumption is questionable both on theoretical and empirical grounds. As Bain has demonstrated, potential competition is not a direct substitute for actual competition even when entry barriers are low.[53] Perhaps the most obvious persuasive empirical evidence that all cities within a 250-mile radius are not always within the same economic market is that a price war in fluid milk sales frequently may persist in a particular locality without spreading to adjacent ones. Finally, the statistical analysis in Chapter 5 on the impact of entry on firm profitability supports the inference that actual entry has a much greater impact on market behavior than potential entry. Although there are no completely satisfactory indices of the level and trends of market concentration, the available evidence indicates most fluid milk markets are quite concentrated and, perhaps, are becoming more so, at least in smaller markets. Even when excessively broad market definitions are used, as in Table 3-9, average four-firm concentration exceeds 40 percent, and is substantially higher than this in many markets.

In summary, concentration in many metropolitan markets falls in the "highly concentrated" category.[54] According to Bain, "oligopolistic interdependence" in such industries "must be very strong"[55] that is, the firms ordinarily would not engage in effective price competition. Empirical analysis supports this hypothesis. Manchester found that processor-retailer milk margins are significantly higher in markets with high concentration than in those with low concentration.[56] The analysis also reveals that firms in highly concentrated markets are slower to innovate than those in less concentrated markets.[57]

Several factors may tend to place constraints on the market power of firms in highly concentrated markets. The most important is actual or potential entry into the market. In the dairy industry, prospective entrants are either dairy processors operating in other geographic markets or food retailers that integrate backward into fluid milk manufacturing by operating their own plants.

53 J.S. Bain, *Barriers to New Competition*, 1956.

54 Bain classifies markets into six categories based on the share of the market held by leading firms. He defines a Type II oligopoly as one where the top four sellers control from 65-75 percent of sales with the remainder held by a competitive fringe of 20 or more. Joe S. Bain, *Industrial Organization*, 1968, p.139.

55 *Ibid.*, p.140.

56 Manchester, *op. cit.*, pp. 27-29. These margins are the difference between prices paid by fluid milk processors and consumers.

57 *Ibid., pp.* 29-31.

The chief barrier to entry by either other dairy processors or by food retailers building new capacity in the market is the large economies of scale in fluid milk processing. As shown earlier, a plant capable of processing 40,000-80,000 quarts of milk a day may be required to achieve most economies of large scale processing. The investment required for such a plant is quite modest, about $2 million. This is not a significant amount of capital for many food retailers or dairy processors. However, there is another barrier to entering fluid milk markets. An entrant must obtain sufficient customers for his products to sustain an efficient-size plant. To obtain such customers may require a lengthy period of developing brand acceptance through price cutting or promotion, resulting in little or no profit for several years. When this need for customers is added to the need for moderately high capital requirements, the barriers to entry may become substantial. This entry barrier is lowered if an existing fluid milk firm enters by supplying a new market from plants located in other geographic areas. Here, too, the firm must risk incurring losses as it takes sales away from existing and firms must bear some added costs as it ships its supply over substantial distances.

The entry problem for retail food chains is different. The food retailer has an advantage over a dairy processor entrant in that it already has a market for its supply. Hence, if it is large enough to utilize the output of an efficient size fluid milk plant it faces only the capital cost barrier to entry. Food retailers give a variety of reasons for integrating backward into fluid milk processing. In interviews by the authors and others, food retail chains usually cite a variety of motives relating to the higher expected profits resulting from lower distribution and processing costs.[58] Other reasons cited include greater control over supply, quality control and avoidance of certain distribution costs, particularly delivery commissions that are required by some union contracts with other milk processors. On the other hand, the chief reason given by a sample of 173 North Central state chains that have not integrated is that their "volume of milk is insufficient for an efficient plant." [59] Other major stated reasons, e.g., "inability to make appreciable savings," "returns on capital higher in other enterprises," "stores too scattered to be served effectively from plant," [60] actually may be the underlying cause for the major stated reason, i.e., inadequate store volume.

Among the key determinants, then, of whether a particular food retailer has an adequate profit incentive to enter fluid milk processing are: (1) the degree of consumer acceptance for milk sold under a retailer's own brands; (2) the geographic concentration of the stores to be served by a potential plant; (3) the volume of output required to operate an efficient size fluid milk plant; and (4) the price at which the food retailer can expect to purchase packaged fluid milk from existing milk distributors.

[58] A study of the 13 food chains with fluid milk plants in the North Central States found that chains gave expected distribution and plant operating costs as their chief reasons.
Richard F. Fallert, *A Survey of Central Milk Programs in Midwestern Food Chains,* United States Department of Agriculture, Marketing Research Report No. 944, December 1971, p. 58.

[59] *Ibid.*, p.57.

[60] *Ibid.*

The first three considerations bear on the question of just how cheaply the food retailer may expect to supply its own milk. A necessary condition is that its "captive outlets" must sell a sufficiently large volume to justify operating an efficient size plant. Also, the outlets for the plant must be located in such geographic proximity that they can be supplied efficiently by a central plant. Moreover, the food retailer must achieve sufficient consumer acceptance for its brands so that it does not have to sell its product at a significant price disadvantage. Even when the preceding conditions are met, the decision to integrate is influenced by the wholesale prices charged retailers by fluid milk distributors. If such prices are well above the anticipated costs of a retailer-owned plant, the retailer has an incentive to operate its own plant even if its retail sales were not sufficient to utilize the output of optimum size plant. At the other extreme, if the retailer could purchase fluid milk at relatively low prices, say at or below the operating costs of an efficient size plant, it would not have an incentive to enter the business even if it were large enough to do so. Between these two extremes entry would depend on the expected rate of profit on an investment in fluid milk processing compared to other investment opportunities of a food retailer.[61]

Unless it can sell part of its output to others, the key necessary condition for integration is sufficient potential sales volume in a particular geographic area to warrant operating an efficient size plant. Thus two factors, the size of a food retailer and the extent of economies of sales, are the two major determinants of the potential extent of integration in fluid milk processing.

We would therefore expect that relatively more large food retailers be integrated than small ones and for more chains to integrate as they become large. Actual integration patterns support these expectations.

[61] Certain government policies may have an important impact on the profitability of integration by food chains into fluid milk processing. Perhaps most important are state milk control laws that guarantee large profits for processors selling to food chains. Chains may reap these profits for themselves by integrating into fluid milk processing. It is generally acknowledged that the milk price control laws of the state of California, introduced in the 1930s, were responsible for the extensive entry into fluid milk processing by food chains in the following decades; today a large proportion of food chains in California process their own fluid milk. The role of milk control laws in other states is less clear, however.
It is also sometimes alleged that the Robinson-Patman Act, which discourages price discrimination favoring big buyers, has encouraged food chains to integrate. In exploring this subject in interviews with food chains, the authors were unable to substantiate this charge. Nonetheless, it does seem likely that large food chains would have less incentive to integrate if the Robinson-Patman Act did not prohibit processors from granting powerful buyers price discounts that cannot be cost justified. Though beyond the scope of this study, suffice it to say that permitting large chains to receive discriminatory price discounts might well discourage some chains from integrating, thereby protecting dairy processors. This benefit would not be without its costs, however, since it would give large retail buyers a competitive advantage over their smaller rivals, thereby resulting in further increases in market concentration in this already highly concentrated industry. See *Market Structure and Performance of Food Chains,* Committee Print of the Joint Economic Committee of the U.S. Congress, forthcoming.

Public records indicate that in 1940 only two of the largest food chains had integrated into fluid milk processing. Safeway Stores (the second largest chain in 1940) operated five fluid milk plants and Kroger (the third largest chain) three.[62] By 1958, seven of the 40 largest food chains and two of the largest voluntary food chains had entered fluid milk processing and operated fluid milk plants. The three largest of these, in addition to Safeway and Kroger, involved forward integration into food retailing. Arden-Mayfair was created when a dairy processor, Arden Farms, acquired Mayfair, a West Coast food chain. Similarly, Southland Dairies, which began operations in 1927 as an ice and fuel company and subsequently entered the convenience store business, acquired numerous dairies, especially after 1960 (See Chapter Four). Finally, Consolidated Foods, which originally was solely a food manufacturer and wholesaler, in the 1950's entered both fluid milk processing and food retailing. Most of the remaining integrated retailers of 1958 were quite small and were located in California, which had a state milk control law that gave retailers a special incentive to integrate into dairy processing. Thus by 1958 there was a relatively modest amount of integration by food retailers and as recently as December 1964 integrated food retailers accounted for only 2.9 percent of sales of commercial processors. In the 1960's a growing number of food retailers entered fluid milk processing. By 1971, 19 of the 40 largest food chains and five of the largest voluntary or cooperative food chains, and at least 21 other food chains had entered fluid milk processing (Appendix D). The FTC estimates that by 1971 food retailers, who were integrated into bottling and dairy processors and retailing, processed over 800 million gallons of fluid milk, or in excess of 13 percent of the U.S. total.[63] This represented about 21 percent of the total fluid milk sold through food stores.[64] A 1975 survey by the authors identified seven additional chains as having entered fluid milk since 1971, all of which were small.

This integration has decreased considerably the size of the market available to fluid milk processors. Large and medium size dairies are hardest hit when chains integrate, because, typically, such dairies supply the bulk of the fluid milk to medium and large chains. Nonetheless, such integration has an indirect effect on all dairies in a market, as all compete for the smaller volume of "noncaptive" or "open market" sales available to them. The net result is that increased integration of food chains compounds the pressures for industrial restructuring caused by increasing economies of scale in processing.

It is within the industrial context set forth above that we now analyze the role played by the FTC's merger guidelines in channeling the direction of merger activity in a period of dramatic structural change.

[62] W.F. Mueller and Leon Garoyan, *Changes in the Market Structure of Grocery Retailing*, University of Wisconsin Press, 1961, p. 174.
[63] FTC Economic Report on Dairy Industry, *op. cit.*, p. 101.
[64] Ibid., p. 103. Manchester estimates that in December 1971 integrated food retailers accounted for 8.5 percent of commercial processors, and integrated dairy and convenience stores accounted for 4.2 percent of sales of commercial processors. A.C. Manchester, *Market Structure, Institutions, and Performance in the Fluid Milk Industry*, Agricultural Economic Research Report No. 248, Economic Research Service, U.S.D.A., pp. 5-7.

CHAPTER FOUR-IMPACT ON LARGE AND MEDIUM DAIRY PROCESSORS

In Chapter Two, we saw the FTC's merger policy initiated in the early 1960's tried to divert mergers away from the largest dairy processors and toward medium-size and viable smaller concerns, and to prevent mergers among medium-size firms. This policy assumed that while technological and other forces made it inevitable many small dairies would leave the industry, many presumably via merger, it was not inevitable that they be acquired by the largest firms. Moreover, there was an implicit assumption that technological and other forces would permit the survival and growth of a significant group of smaller and medium-size firms if they could grow rapidly enough to adjust to changing market conditions. The restraints placed on mergers of the largest firms were designed to permit the smaller dairy firms to grow more rapidly via merger without competing with the largest dairies in making acquisitions. The policy's objective was to maintain a sufficient number of viable dairy processors to insure effective competition in the industry. This chapter examines the policy's impact on (1) the pattern of overall merger activity, (2) the largest firms and (3) medium-size firms.

Table 4-1. Dairy Processor Acquisitions by the Eight Largest and by Other Dairy Processors, 1920-1975

Year	Eight Largest a	All Other Non-Coops	Coop Acquiring Non-Coops	Total Other Than Top Eight (2) + (3)	Grand Total
	(1)	(2)	(3)	(4)	(5)
1920	1	69	19	88	89
1921	3	93	12	105	108
1922	4	99	12	111	115
1923	6	127	18	145	151
1924	10	113	15	128	138
1925	51	169	17	186	237
1926	18	139	20	159	177
1927	15	174	7	181	196
1928	104	334	25	359	463
1929	351	374	33	407	758
1930	164	151	17	168	332
1931	42	71	18	89	131
1932	27	53	14	67	94
1933	22	45	10	55	77
1934	16	63	9	72	88
1935	34	60	4	64	98
1936	68	71	9	80	148
1937	72	90	14	104	176
1938	46	82	15	97	143
1939	76	70	5	75	151
1940	57	76	9	85	142
1941	112	88	9	97	209
1942	53	104	18	122	175
1943	56	97	22	119	175
1944	67	101	21	122	189

1945	75	117	23	140	215
1946	58	113	19	132	190
1947	33	71	21	92	125
1948	38	88	17	105	143
1949	37	75	13	88	125
1950	77	98	11	109	186
1951	67	102	13	115	182
1952	66	87	28	115	181
1953	67	77	25	102	169
1954	81	67	30	97	178
1955	68	69	22	91	159
1956	32	54	23	77	109
1957	22	69	16	85	107
1958	24	68	17	85	109
1959	33	94	19	113	146
1960	39	78	15	93	132
1961	15	63	15	78	93
1962	3	71	17	88	91
1963	6	79	11	90	96
1964	7	59	15	74	81
1965	4	62	24	86	90
1966	9	71	15	86	95
1967	3	50	15	65	68
1968	2	26	20	46	48
1969	4	47	14	61	65
1970	4	39	14	53	57
1971	1	17	23	40	41
1972	1	15	9	24	25
1973	2	16	1	17	19
1974	1	12	3	15	16
1975	0	14	2	16	16
Total	2,354	4,881	882	5,756	8,129

a These were the eight largest dairies in 1960 as shown in Table 3-7.

Source: **Column 1 data for 1920-61 based on Table 1 in FTC *Dairy Report, op. cit.*, p. 13; 1962-72 based on the same sources as FTC. The FTC data essentially represent an update of a merger series developed by W.F. Mueller and M.V. George originally appearing in W.F. Mueller, "A Comment on the FTC's Report on Mergers," *Journal of Farm Economics*, February 1957 and in M.V. George, "The Causes of Dairy Mergers and their Impact on the Structure of the Dairy Industry," (unpublished Ph.D. dissertation, University of Wisconsin, 1961), p. 57. Columns 2 and 3 data based on same trade sources used by FTC, but data for cooperatives excluded mergers among dairy cooperatives, since most of these include mergers among manufactured dairy products other than fluid milk, and bargaining associations. The data for acquisitions for 1962-75 differ somewhat from data of earlier years because the former included some nonfluid milk-related acquisitions.**

IMPACT ON PATTERN OF OVERALL MERGER ACTIVITY

The rate of merger activity in the dairy industry has risen and fallen with the level of overall economic activity, especially as reflected by stock prices.[65] Dairy mergers reached record highs during the frenzied merger movement of the late 1920's, and fell off in the depression years of the 1930's. Although the level of overall merger activity rose and ebbed, a steady current of merger activity continued for over 50 years, as technological and other forces made obsolete the numerous small enterprises that once occupied the industry. Table 4-1 traces the overall pattern of merger activity in the industry during 1919-1971, one of the longest merger series for a single industry.

This series does, however, substantially understate the total number of acquisitions, especially by small dairies.[66] Nonetheless, we believe this series is an accurate index of the *trend* of merger activity.

Table 4-2. Average Annual Number of Dairy Processor Acquisitions Made by Various Categories of Acquirers, 1950-75

Years	Top Eight	All Other Noncoop-eratives	Farmer Coopera-tives Processing Fluid Milk	Total Other Than Top Eight	Grand Total	Acquisition as Percent of Total Operating Companies a		
						Top Eight	All Others	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1950-55	71	83	22	105	176	1.0%	1.4%	2.4%
1956-61	28	71	17	88	116	0.6	2.0	2.4
1962-75	4	41	13	54	58	0.1	1.9	2.1

a Assumes the following average number of operating fluid milk companies: 1950-55, 7,400; 1956-61, 4,900; 1962-75, 2,800. These estimates based on Manchester, *Market Structure, op. cit.*, p. 3.

Source: **Same as Table 4-1.**

Chapter Two showed the antimerger law did not interfere with merger activity in the industry until 1956, when mergers of the top four dairy processors were challenged by the FTC. Application of the laws to the industry did not slow the pace of overall merger activity in the dairy industry. As summarized in Table 4-2, the total number of recorded dairy acquisitions fell from an average of 176 per year during 1950-55, the period before the FTC challenged mergers by the top four dairies, to 58 per year

[65] A multiple regression analysis of merger activity by dairy processors during 1919-62 in which mergers were correlated with an index of stock prices and industrial production yielded a multiple correlation coefficient of .86. See testimony of W.F. Mueller, Hearings before the Subcommittee on Antitrust and Monopoly, U.S. Senate, Part 2, *Mergers and Other Factors Affecting Industry Concentration*, March 16, 1965, pp. 505-06.

[66] An indication of the possible magnitude of understatement is that 137 independents surveyed (see Table 5-7) in 1971 reported making 183 acquisitions during 1961-70. The sources used to compile Table 4-1 reported only 60 (33 percent) of these acquisitions. Similarly, 84 firms responding to a 1975 questionnaire reported making 26 dairy acquisitions during 1971-74 (see Appendix H). Only 8 (31 percent) of these were reported by the sources used to compile Table 4-1.

during 1962-75, the period following the first FTC decision finding mergers by a leading dairy in violation of the Celler-Kefauver Act (Chapter Two). Although the *absolute* number of acquisitions declined, the number of companies acquired *relative* to the number of companies in operation remained unchanged over the period. During 1950-55 *total* recorded acquisitions averaged annually about 2.4 percent of all operating fluid milk companies. During 1956-61 and 1962-75 this percentage remained above 2 percent annually. These comparisons suggest that while the *absolute* number of mergers declined after 1950-56, the *relative* number remained virtually unchanged.

Although the FTC policy did not slow the overall merger pace in the industry, it did have a decided effect on the merger activity of the largest dairies. In the 31-year period 1920-50 the eight largest dairies made at least 1,793 dairy acquisitions (Table 4-1). Passage of the Celler-Kefauver Act of 1950, which greatly strengthened Section 7 of the Clayton Act, did not slow the merger pace of the largest companies. During 1950-55, they made an average of 71 acquisitions per year. Following issuance of the FTC complaint in 1956 challenging the post-1950 acquisitions of Foremost Dairies, followed shortly by complaints against Borden, Beatrice, and National Dairy (Kraftco),[67] the top companies' merger activity slowed appreciably (an average of 28 per year during 1956-61). Merger activity by the top companies slowed even more following and FTC trial examiner decision, December 9, 1960, which found nine of Foremost's largest acquisitions in violation of the Celler-Kefauver Act. After the FTC's *Foremost* decision, April 30, 1962, the top four dairies virtually ceased their merger activity—averaging 1.8 annually during 1962-75 (Table 4-3).

The decline in the top companies' mergers relative to overall merger activity is shown in column 6, Table 4-2. Whereas during 1950-55 the top eight companies acquired 1.0 percent of all companies each year, this percentage dropped to 0.6 percent during 1956-61, and 0.1 percent during 1967-75.

Although the FTC challenged mergers by only four of the eight largest dairies of 1960, the merger rate of the fifth to eighth largest dairies also dropped appreciably after 1961. Whereas these companies made at least 128 acquisitions during 1950-61, they made only 22 during 1962-75 (Table 4-3).

In contrast to the deceleration of mergers by the eight largest companies, those by other companies actually increased in relative terms. Whereas the acquisitions of dairies other than the top eight averaged 1.4 percent of the total operating companies in 1950-55, this percentage rose to 2.0 percent during 1956-61 and 1.9 percent during 1962-75. (As noted earlier, this is a minimum estimate of the number of such mergers.)

[67] *Foremost Dairies*,, Docket No. 6495; *National Dairies Products*, Docket No. 6651; *Borden Company*, Docket No. 6652; and *Beatrice Food Company*, Docket No. 6653.

Table 4-3. Dairy Acquisition of the Eight Largest Dairy Processors, 1950-61 and 1962-75

Company	1950-61	1962-1975
Borden	159	2
Kraftco	46	8
Foremost	60	1
Beatrice	198	14
	463	25
Carnation	21	8
Arden-Mayfiar	21	1
Fairmont	40	6
Pet	46	7
	128	22
Total Top 8	591	47

Source: Same as Table 4-1

Table 4-4. Sales of Acquisitions Challenged by the Federal Trade Commission, 1951-56

Company	Sales of Acquired Businesses (Millions)
Beatrice	$147
Borden	102
Foremost	342
National Dairy (Kraftco)	95
	$686

Source: Records of various cases discussed in Chapter 2.

The shift in the *relative* merger rates was even more pronounced than these comparative *numbers* of acquisitions suggest. Whereas during the 1950's the largest companies made a somewhat smaller *number* of acquisitions than did all other dairies combined, the volume of operations acquired by the largest companies greatly exceeded that of the other companies. During 1951-56 the four largest dairy processors acquired companies with combined sales of about $686 million (Table 4-4). In contrast, dairies other than the top eight made smaller acquisitions. For example, during 1946-55 a sample of 102 farmer-owned dairy cooperatives (which included virtually all the largest such cooperatives in the country) made 122 acquisitions with combined sales of just under $100 million.[68] During 1951-55 Foremost, alone, made 90 recorded acquisitions with combined sales of $342 million (Table 4-4).

[68] W.F. Mueller, *The Role of Mergers in the Growth of Agricultural Cooperatives*, California Agricultural Experiment Station, Bulletin 777, 1961, pp. 60-61.

On the other hand, since 1956 the large companies have made no major dairy acquisitions. Whereas during 1950-60 the top four companies made 32 acquisitions valued at $1 million or more (Table 4-5), during 1964-74 the top four firms acquired only four companies with sales in excess of $1 million, and these acquired companies had combined sales of less than $10 million.[∞]

In sum, the FTC's objective of diverting merger activity away from the largest companies was successful. And while it did channel mergers away from the largest companies to others, it did not have a discernable effect on the relative *rate* of *overall* merger activity in the industry in terms of firm number.

Table 4-5. Acquisitions of Eight Largest Dairies where Consideration Paid Exceeded $1 Million, 1950-60

Consideration Paid (Millions)	Number of Acquisition
$1-4.9	25
5-9.9	3
10-24.9	3
25-49	1
	32

Source: Records of FTC cases.

RECENT GROWTH OF LARGE DAIRIES

The growth pattern of the four largest dairies has changed markedly since they have been prevented from acquiring fluid milk and ice cream firms. One obvious change is the rapid expansion into other areas that mergers compared to growth from dairy acquisitions during much of their history prior to 1960. As a group, the total sales of the top four firms actually grew more rapidly during the 1960's than during the 1950's—124 percent versus 96 percent (Table 4-6). Although inflation may account for part of this difference, the leading dairy processors' rapid growth in the 1960's largely reflected the active participation of all but Kraftco in the enormous conglomerate merger movement that swept across much of American big business in the 1960's.

These top four dairy processors acquired at least 278 other businesses during 1961-74. They paid a total of $941 million for the 125 of these for which acquisition cost data were available (Table 4-7).

[∞] As shown in Table 4-1, the FTC approved the acquisition of only four companies with sales in excess of $1 million by the five dairies requiring premerger approval. The two largest of these were made by Dean Foods. We do not believe the top four made any dairy acquisition exceeding $10 million during 1961-74.

Only Kraftco made no significant mergers after 1960. Beatrice Foods led in acquisitions, with at least 174 valued at $575 million. Significantly, the value of these acquisitions was 4.6 times larger than Beatrice's assets in 1960. Foremost Foods made at least 45 acquisitions valued at $181 million, which was 18 percent greater than its assets in 1960. After merging with McKesson-Robbins, a drug company, Foremost changed its name to Foremost-McKesson. Although a relatively less active acquirer than Foremost and Beatrice, Borden made at least 41 acquisitions for which it paid $180 million. These acquisitions helped accelerate its growth sufficiently so that by 1974 it was only slightly smaller than Kraftco, long the industry leader. Beatrice and Foremost-McKesson also grew much more rapidly than Kraftco.

Table 4-6. Total Sales of Four Largest Dairy Processors, 1950-74 (Millions)

						Percent Change	
Name	1950	1960	1970	1973	1974	1950-60	1960-70
Kraftco	$ 907	$1,667	$2,751	$ 3,602	$ 4,471	84%	65%
Borden	631	956	1,827	2,554	3,265	52	91
Beatrice	205	443	1,576	2,787	3,658	116	256
Foremost	48	438	1,692	2,147	2,378	812	286
Total	$1,791	$3,504	$7,846	$11,090	$13,772	96%	124%

Source: *Moody's Industrials*, various years.

Table 4-7. Acquisitions and Growth of Four Largest Dairy Processors, 1961-74 (Millions)

Company	Number of Acquisitions	Consideration Paid	Company Assets 1960	Company Assets 1974	Percent Growth in Assets	Consideration Paid for Acquisition as Percent 1960 Assets
Kraftco	18 (6) a	$ 5	$ 670	$1,710	155%	1%
Borden	41 (14)	180	395	1,659	320	46
Foremost-McKesson	45 (24)	181	154	795	416	118
Beatrice	174 (81)	575	125	1,461	1,069	460
Total	278 (125)	$941	$1,344	$5,625	319%	70%

a Numbers in ( ) show number of companies for which data are available for consideration paid or assets of acquired companies.

Source: *Moody's Industrials* and various other public sources.

Year	Company	Products
1961	Fisher Nut Company	Nuts
1963	Burney Bros.	Bakery Products
1964	Sugarine	Sweeteners
1964	Regal Packer-Byproducts	Prepared Feeds
1964	Bloomfield Industries	Metal Stampings
1964	Southland Pecans, Inc.	Nuts
1965	Stahl Finish Company	Inorganic Pigments
1965	Polvinyl Chemicals, Inc.	Organic Chemicals
1965	Aunt Nellies Foods	Canned Fruits & Vegetables
1965	Chesterton Candy Company	Confectioneries
1965	Murray Biscuit Company	Cookies & Crackers
1965	Vigortone Products, Inc.	Prepared Feeds
1966	Ross-Wells Freezer Corporation	Refrigerators
1966	Midwest Forging & Mfg. Company	Metal Products
1966	Switzer Licorice Company	Confectioneries
1967	Mother's Cookie Company	Cookies & Crackers
1967	Charmglow Products, Inc.	Lighting Fixtures
1967	Austream, Inc.	Structural Metal Products
1967	Industrial Fabricating Company	Industrial Fabrications
1968	Steel Treating, Inc.	Primary Metal Products
1968	Indiana Wood & Frame, Inc.	Wood Products
1968	Farboil Company	Plastics
1968	Hart Ski Mfg. Company	Sporting Goods
1968	Market Forge Company	Primary Metals
1968	Morgan Yacht Corporation	Boat Building
1968	John Sexton & Company	Wholesale Grocery
1969	Hekman Furniture Company	Household Furniture
1969	John & Ollier Engraving Company	Engraving
1969	American Graphics Corporation	Graphics
1969	Lowrey's Freshies, Inc.	Sausages & Meats
1969	Jacobsen Mobile Homes Company	Trailer Coaches
1969	Brillion Iron Works, Inc.	Gray Iron Foundaries
1969	Manson Publishing Company	Periodicals
1969	Cabots Promotional Aids, Inc.	Advertising
1969	Holiday Homes, Inc.	Trailer Coaches
1969	E.R. Moore Company	Men's Apparel
1971	Red Wing Productions	Soft Drinks
1972	Peter Eckrich & Sons	Sausages & Meats
1972	Canada Dry of Louisville	Bottled Soft Drinks
1972	Gold Medal Beverage	Bottled Soft Drinks
1972	Homemakers	Fur Goods
1972	New Yorker	Trailers
1972	Royal Crown Beverage Company	Soft Drinks
1972	Marketing Communications	Advertising
1972	Striker Aluminum Yachts	Boat Building
1972	Dry Wall Products, Inc.	Dry Wall
1972	Wells Mftg. Corporation	Appliances
1972	Dearborn Brass Company	Plumbing Fixtures
1972	Velva Sheen Mfg. Company	Fur Goods
1972	Sap's Foods, Inc.	Bakery Goods
1973	Brookside Enterprises	Wines & Brandy
1973	Samsonite Corporation	Luggage
1974	Convenience Foods, Inc.	Convenience Foods
1974	Dri-Prints Foils	Foils

There was an important distinction between these large corporations merger activity during the 1960's than during the 1950's. Whereas the earlier period saw largely acquisitions of other dairy companies, the latter period was characterized by conglomerate-type mergers, that is, mergers in product lines not previously occupied by the acquiring company. Beatrice's acquisition itinerary swept across a broad and diverse front.

Although these acquisitions covered many products, Beatrice's acquisition pattern involved multiple acquisitions in bakery goods, metals, boat building, sausages, trailer coaches, confectioneries, advertising, and soft drinks. Thus, after making an initial acquisition to enter a new area, it reinforced its initial beachhead with one or more acquisitions in the same area, i.e., it made horizontal acquisitions.

What was true of Beatrice also was true of Foremost and Borden to lesser degrees. These mergers, then, greatly expanded the relative importance of nondairy products for these firms, although less so for Kraftco than the others. In 1974, dairy products represented 55 percent of its total sales, down from 65 percent in 1967 (Table 4-8). The relative importance of fluid milk fell most sharply, from 20 percent to 10 percent. In contrast, between 1968 and 1974, Beatrice's dairy product sales, which already represented only 36 percent of its total in 1968, continued to fall in relative importance (Table 4-9). The large gainers were chemicals and manufactured products and specialty meats.

Table 4-8. Kraftco, Inc., Sales by Major Product Lines, 1969-74

	Percent of Total Sales				
Product Line	1967	1969	1971	1973	1974
Mfd. Dairy Products	38%	39%	42%	44%	40%
Fluid Milk Products	20	18	14	11	10
Ice & Frozen Desserts	7	7	6	5	5
Processed Food Products	33	33	36	36	41
Other Products	2	3	3	3	4
Total	100%	100%	100%	100%	100%

Note: Percentages may not add to 100 due to rounding.

Source: Securities Exchange Commission, 10-K forms for Kraftco. Fiscal year ending December 30.

Table 4-9. Beatrice Foods Company Sales by Major Product Lines, 1968-74

Product Line	Percent of Sales				
	1968	1970	1972	1973	1974
Dairy Products	36%	31%	31%	28%	27%
Grocery & Confectionery	34	32	31	31	32
Specialty Meat	4	9	11	11	10
Chemical and Manufactured Products	19	21	21	24	25
Warehousing & Agrucultural Products	7	7	6	6	6
Total	100%	100%	100%	100%	100%

Source: Securities Commission Exchange, Form 10-K, Beatrice Foods. Fiscal year ending February 28.

Table 4-10. Foremost-McKesson, Inc., Sales by Major Product Lines, 1968-74

Product Line	Percent of Total Sales				
	1968	1970	1972	1973	1974
McKesson-Robbins Drug	44%	44%	40%	40%	38%
McKesson Foods	25	24	22	21	22
McKesson Liquor	23	23	26	27	26
McKesson Chemical	8	9	9	9	12
Foremost-McKesson Property	—	—	3	3	2
Total	100%	100%	100%	100%	100%

Source: Securities and Exchange Commission, 10-K forms for Foremost. Fiscal year ending March 31, 1974.

Table 4-11. Borden Company Sales by Major Product Lines, 1969-74

Product Line	Percent of Sales					
	1967	1969	1971	1972	1973	1974
Dairy & Services	39%	35%	28%	28%	26%	24%
Foods	31	30	39	38	35	37
Chemical	19	21	19	19	22	22
International	11	14	14	15	17	17
Total	100%	100%	100%	100%	100%	100%

Source: Securities Exchange Commission, Form 10-K for Borden Company.

The picture is less clear for Foremost, since in its reports to the SEC it combines dairy products with all other food products, which fell from 25 percent in 1968 to 22 percent in 1974 (Table 4-10).

Borden's dairy products, which represented only 39 percent of its total sales in 1967, had fallen to 24 percent by 1974. All other reported categories grew in relative importance, with foreign sales showing the sharpest climb—from 11 percent to 17 percent (Table 4-11).

It is difficult to assess the role the FTC's policy played in the changed merger pattern of these companies. One obvious effect, as shown earlier, was to slow appreciably these firms' acquisitions of other dairies. Although we will never know what would have happened had it not been for the FTC policy, the fact that several large dairies requested permission to acquire a number of smaller, often near failing companies, suggests that had there been no restraints they may well have acquired many of the remaining most viable independent and medium-size dairy processors during the 1960's.

Whereas the FTC policy stopped the top companies from making dairy acquisitions, it is clear that it placed little restraint on their acquisition of nondairy firms. We shall not attempt here to analyze the possible competitive or other consequences of such mergers. It should be noted, however, that relatively few substantial firms were acquired. This may reflect, in part, the FTC's announced merger policy with respect to mergers of leading food manufacturing acquisitions.[70] The largest acquisition, Foremost-McKesson-Robbins, was challenged by the FTC in 1967. This challenge ended in a consent decree whereby Foremost agreed to dispose of certain of its drug properties which had been in competition with McKesson-Robbins. Hence the merger was challenged solely on grounds that it might reduce horizontal competition between the merging companies, which in effect gave the FTC's blessing to the conglomerate aspects of the merger.

IMPACT ON MEDIUM-SIZE PROCESSORS

Medium-size dairies made a significantly larger number of acquisitions since 1960 than during 1950-60. Our analysis is based on a group of seven dairy processors that in 1960 had fluid milk and related product sales ranging from $30 million to $90 million. Based on public sources, these firms acquired at least 53 dairy processors during 1950-60 and 70 during 1961-73 (Table 4-12). The largest firm, Fairmont, made 40 of the 53 recorded dairy acquisitions during 1950-60.

Apparently, the acquisitions made since 1960 significantly accelerated the growth of most of these firms. Because the FTC's merger policy apparently had a differential impact on the growth decisions of the various firms studied, we shall examine the

[70] FTC *Enforcement Policy with Respect to Product Extension Mergers in Grocery Products Manufacturing*, May 15, 1968.

experience of each of these firms since 1960. Unfortunately, growth experience of these firms during the 1950's cannot be analyzed because sales data are available for only two of them in 1950.

This analysis also excludes a number of firms that might appropriately be classed as medium-size firms in fluid milk and related product firms. Perhaps the most important exclusions are Carnation Corporation, Pet Milk Company, and Arden-Mayfair. Each had fluid milk product sales of between $50 and $100 million in 1960. However, insufficient information was available to analyze their growth in fluid milk and related products over the period.

FAIRMONT FOODS COMPANY

Fairmont is one of the country's oldest surviving dairy processing corporations, first incorporated in 1884. It is headquartered in Omaha, Nebraska.

Table 4-12. Recorded Dairy Acquisitions of Seven Medium-Size Dairy Processors During 1950-60 and 1961-74

Company	Sales of Fluid Milk & Related Products in 1960	Fluid Milk & Ice Cream Acquisitions	
		1950-60	1961-74
	(Millions)		
Fairmont	$90a	40	6
Hood & Sons	90a	3	2
Dean	56	4	10
Knudsen Corporation	50a	0	3
Hawthorne Mellody b	50a	4	17
Southland	28	2	29
Farmbest c	0	—	7
Total		53	74

a Estimate (See Table 4-14).
b Hawthorne Mellody Dairy operates as a division of National Industries, Inc., which acquired Hawthorne in 1968.
c Farmbest was divested by Foremost dairies in 1965, and was acquired by IU International (see text). In 1975 Farmbest Foods, Inc. was acquired by Mumford, Inc.

Source: Moody's Industrial Manual and Various other public sources.

Through the years Fairmont has made many acquisitions, acquiring at least 40 fluid milk and ice cream businesses during the 1950's. Its acquisitions of dairy processors declined during the 1960's, when it made only five reported acquisitions. However, one of these, Abbotts Dairy, Inc. of Philadelphia, was substantial. It had assets of about $24 million and annual sales of about $50 million. Fairmont acquired at least five other dairies, which added another $5 million in sales. These acquisitions during the early 1960's contributed significantly to its sales of fluid milk and related dairy products, which grew from less than $100 million in 1960 to about $207 million in 1974.[71]

[71] In 1960, Fairmont's *total* sales were $97 million. As shown below, in 1974 its total sales were $416 million, of which $207 million were dairy products. See Table 4-14.

The most rapid area of Fairmont's growth since 1960 occurred in its convenience store operations. Although it had operated ice cream shops since the 1930's, it did not enter convenience store retailing until quite recently. Since 1960, it has acquired at least 10 convenience store firms, and in the fiscal year ending February 1974, its U-Tote'M Division operated about 70 convenience food stores with combined sales of $120 million. This growth has augmented its fluid milk product convenience store's sales.[72] However, Fairmont still sells a relatively small percentage (under 5 percent) of its *total* dairy products through its convenience stores.[73]

Since 1960, Fairmont has acquired at least 34 nondairy concerns. These acquisitions resulted in Fairmont's diversification into a number of nondairy food products including potato chips, crackers, nuts, biscuits and soft drinks, as well as considerable expansion in convenience stores, as noted above. By 1973, Fairmont's sales in its major product lines were as follows:[74]

	Millions	Percent
Total Sales	$415.6	100.0%
Fluid Milk	125.5	30.2
Ice Cream, Cottage Cheese & Related Dairy Products	81.5	19.6
Potato Chips & Related Snacks	32.0	7.7
Other Snacks & Soft Drinks	56.5	13.6
Convenience Stores	119.7	28.8
Miscellaneous Products	.4	0.1

H.P. HOOD & SONS

Hood is a privately-held corporation headquarted in Boston, Massachusetts and has long been the largest dairy processor in New England. In 1974 it had total sales of $387 million, of which about $174 million were fluid milk and related products. About 45 percent of its sales were from cheese and related products and 12 percent from processed orange juice and miscellaneous products.[75] Hood reportedly made only three small dairy acquisitions in the 1950's and two in the 1960's. It probably made so few acquisitions during the 1960's because as the largest regional dairy, it was

[72] Southland reported that dairy products represented about 12 percent of its convenience store sales in recent years. Southland 1973 SEC 10-K Report Form.
[73] This estimate is based on the percentage that dairy product sales represent of Southland's total convenience store sales. See preceding footnote.
[74] Source: Fairmont's SEC, 1973 10-K Form. Fiscal year ending February 28, 1974.
[75] Hood Annual Report, 1974.

large enough to be included among the size class of dairies that the FTC had singled out for especially close scrutiny in its *Beatrice* merger guidelines.

DEAN FOODS COMPANY

Dean was incorporated in 1925, operates in several midwestern states, and is headquarted in Chicago. It was still a relatively small company in 1960, with sales of $56 million, practically all of which were fluid milk and related products. By 1974 its total sales had grown to $264 million, of which about 76 percent were fluid milk and other dairy products (see below).

Dean is the only medium-size dairy to have had a direct confrontation with the FTC over the merger guidelines announced in the *Beatrice* decision in 1965. Ironically, at the time the guidelines were promulgated, Dean was the type of medium-size regional dairy processor whose growth the FTC allegedly was attempting to foster. However, Dean clashed with the FTC's merger policy when in 1966 it acquired Bowman Dairy, another medium-size dairy. On its face the merger appeared a clear violation of Section 7 of the Clayton Act as well as the FTC guidelines which explictly discouraged mergers among medium-size dairies. Dean-Bowman was both a horizontal merger between two of the leading fluid milk suppliers in the Chicago market as well as a merger between two regional dairies of the size the FTC explicitly stated should be discouraged from merging with one another.

Although Bowman was not doing well financially at the time of acquisition, it did not qualify as a failing company under the "failing company doctrine." The FTC further contended that even though Bowman had financial difficulties, it was contrary to public policy that it be acquired by another medium-size dairy, especially one that was a substantial direct competitor in an important market.

The courts ultimately sustained the FTC's ruling that acquisition was illegal. In addition to ordering the divestiture of the acquired facilities, Dean was prohibited from making further dairy acquisitions for 10 years without first receiving the prior approval of the FTC. Although in 1969 Dean divested most of the former Bowman facilities, in March 1973 the FTC approved Dean's acquisition of the Chicago operations of Bowman at a public auction. Dean had been the only bidder.

When in 1970 Dean sought to acquire the MacArthur Jersey Farm Dairy, Inc., Miami, Florida, Dean was required to receive the Commission's approval before making the acquisition. Although this would have involved a market-extension merger located over 1,000 miles from Dean's existing operations, and therefore not in violation of the guidelines set forth in *Beatrice*, the FTC refused to approve the acquisition (See Chapter Two).

Although Dean made several other fluid milk acquisitions in the 1960's these were before the Dean-Bowman case of 1966.[76] Thus the FTC's merger policy appears to have dampened somewhat Dean's growth by merger in the fluid milk industry in the 1960's. It not only prohibted mergers violating the guidelines, but others as well. Nonetheless, Dean's sales of fluid milk products grew rapidly shown in Table 4-14.

Since 1960, Dean has acquired at least 10 nonfluid milk companies, including processors of cranberries and salad oils, manufacturers of food packages and a cheese company.

In 1975, Dean requested permission from the FTC to acquire R. Bruce Fike & Sons, Uniontown, Pennsylvania. Bruce Fike, which has sales of $12 million, is the fifth largest seller of fluid milk in the Pittsburgh metropolitan area. This request was approved by the Commission February 11, 1976.

Dean still remains a relatively specialized dairy processor and manufacturer. In 1974 its sales in various product lines were as follows:[77]

	Sales (millions)	Percent
Fluid Milk & Related	$163.6	62.0%
Ice Cream & Related	14.9	5.7
Cheese	21.8	8.3
Pickles & Other Foods	36.0	13.6
Powdered Products, Puddings & Other Manufactured Products	27.5	10.4
Total Sales	$263.8	100.0%

KNUDSEN CORPORATION

Knudsen was incorporated in 1935 and is headquarted in California. It has continued to restrict its operations largely to California; and although it produces some nondairy products, it remains an essentially specialized dairy processing firm. It has made only two recorded dairy processor acquisitions since 1950.

In 1967 Knudsen and a small group of independent supermarket owners formed a joint venture—Todd's—which acquired an Orange County milk processing plant and fleet of delivery trucks. "Following Court approval of the Todd's concept in 1973"[78] Knudsen established a second such joint venture in Las Vegas, Nevada. A third such joint venture was organized in Fresno, California, and a fourth is under consideration.

[76] In 1972 Dean acquired two dairy manufacturing firms with sales of $11 million. The FTC approved these acquisitions, which involved a cheese manufacturer, and therefore did not come within the Beatrice guidelines.

[77] Dean Annual Report, 1974.

[78] Knudsen Annual Report, 1974.

On March 1, 1970, it acquired the Western District of Borden, Inc. for $10.5 million. This acquisition was largely responsible for increasing its sales from $89 million in 1969 to $124 million in 1971. Between 1960 and 1973 its total sales grew from $54 million to $166 million. We estimate that about $90 million of its 1973[79] total sales involved fluid milk and related products.

Knudsen's most recent diversification has been into dairy farming, with the purchase and construction of six modern dairy farms. In a related diversification move, Knudsen acquired a 51 percent interest on about 5,000 acres of dairying and farming properties in the Central Valley of California. This involved a $12 million transaction.

These various moves have positioned Knudsen securely as a highly integrated operation, including dairy farming, milk processing, and distribution through four "captive," jointly-owned ventures with food retailers.

SOUTHLAND CORPORATION

The Southland Corporation, originally incorporated in 1927 as an ice and fuel company headquartered in Texas, in the late 1930's began developing the 7-eleven convenience food stores in its ice houses.

Southland remained a relatively small corporation until the mid-1950's, when it began acquiring convenience food stores and dairy processors. Its total food store sales grew from about $50 million in 1958 to $1,612 million in 1974.[80] Most of this increase in sales was due to its four food chain store acquisitions. By 1974 it operated 3,136 conveinence stores and franchised another 2,035. It also operated 209 other food stores including supermarkets, sandwich shops, and candy shops. Today Southland is the nation's largest operator of convenience stores.

Southland entered dairy processing by acquiring a Texas firm in 1944. During the 1950's it acquired only one dairy processor, Cabell's Dairy, Dallas, Texas (1959). In 1960 its fluid milk and related product sales were about $28 million. Commencing in 1962, Southland began buying leading independent dairies in many parts of the country, with its dairy acquisitions itinerary generally following—although sometimes preceding—its retail food store expansion. Since 1960 Southland has acquired at least 29 dairies, ranging geographically from Embassy Dairy in Washington, D.C. (1963), to Spreckels-Russell Dairy, San Francisco (1966) and Adohr Milk Farms, Inc., Los Angeles (1966). By 1974 it had acquired dairy processing plants in at least 15 states.

[79] Fiscal year ending March 31, 1974.
[80] Annual Reports and SEC 10-K Reports.

These dairy acquisitions many of which involved consideration paid in excess of $1 million,[81] involved combined sales of nearly $100 million. As a result, its dairy product sales rose from under $30 million in 1960 to $174 million in 1974.

In 1973, 34 percent of its dairy product sales were through its own retail food stores (See Table 4-13). Other wholesale customers accounted for 49 percent of its dairy sales (Table 4-13). Between 1968 and 1973, its sales to home delivery customers declined from 18 percent to 3 percent. By 1967 Southland had become the fifth largest fluid milk processor.[82]

Table 4-13. Southland Corporation's Total and Dairy Product Sales by Type of Customer, 1968-74

	1968	1969	1970	1971	1972	1973	1974
				(Millions)			
Total Sales	$662	$869	$981	$1,080	$1,220	$1,394	$1,612
Dairy Products	119	148	137	140	146	153	177
Type of Customer							
Total	100%	100%	100%	100%	100%	100%	100%
Wholesale	41	41	42	44	48	49	—
Intercompany	24	24	27	32	33	34	—
Home Delivery	18	19	8	4	3	3	—
Distrubutors and Others	17	16	23	20	16	14	—

Source: Southland Corporation's 1974 Securities & Exchange Commission 10-K Form. Fiscal year ending December 31.

Southland's dairy acquisition program appears to have been influenced indirectly by the FTC's merger policy which prevented dairy acquisitions by the top companies. Southland apparently capitalized on the fact that in making acquisitions it did not have to compete with the largest dairy processors. On the other hand, as a public company, it was in a better position to acquire leading independent dairies than were other nonpublic medium-size dairy processors who could not purchase prospective sellers with common stock traded on a stock exchange. Thus the FTC's policy provided an environment conducive to Southland's rapid growth by acquisition.

[81] FTC, *Dairy Report, op. cit.*, pp. 149-150.
[82] SEC 10-K Report for 1973.

HAWTHORNE-MELLODY DAIRY

Hawthorne-Mellody was a privately-held dairy processor headquartered in Wisconsin until 1968, when it was acquired by National Industries, Inc. National is a conglomerate corporation that had sales of $798 million in 1974.[83] We estimate National's dairy product sales in 1974 to be in excess of $100 million.[84]

Hawthorne made more acquisitons (17) during the 1960's than during the 1950's (4). Its acquisitions during the 1960's involved companies with combined sales of about $50 million, which were equal to about 50 percent of its current dairy product sales. It therefore appears that not only did the FTC's merger policy not discourage this medium-size dairy processor for making acquisitions during the 1960's, but that it may well have created an environment conducive to such acquisitions. On the other hand, Hawthorne's decision in 1968 to sell out to National Industries, a nonfood conglomerate, also may have been influenced by the FTC policy which made it virtually impossible for Hawthorne to sell out to a large or medium-size dairy. Thus, had it not been for the policy, the Hawthorne operation may have disappeared as an independent competitive factor in the dairy processing industry by merging with another dairy firm.

FARMBEST, INC.

Farmbest was a direct progeny of the FTC merger policy. Following the FTC's decision finding certain of Foremost's acquisitions to have violated the Celler-Kefauver Act, (Chapter Two) in 1965 Foremost divested it's southeastern dairy products division to the General Waterworks Corporation, which operated it as the Home Town Foods, Inc. subsidiary. In 1968, General Waterworks Corporation. In 1970, the name of Home Town Foods, Inc. was changed to Farmbest, Inc.

Following the acquisition of Foremost's southeastern division in 1965, General Waterworks made seven additional dairy acquisitions with combined sales of about $7 million.[85] In 1974, Farmbest had total sales ot $104 million (Table 4-14).[86]

Thus, the FTC's policy resulted in the creation of an independent, medium-size dairy processor that had not previously existed. Additionally, the policy did not prevent the subsequent expansion of the new company through the acquisition of at least seven relatively small companies with average sales of $1 million each.

[83] Its sales were divided into the following broad product lines: retailing, 32.9%; processing and distribution of dairy and food products, 21.7%; production and distribution of soft drinks, 13.4%; energy products, 8.5%; steel service centers, 14.1%; leisure type headwear and sporting goods, 4.3%; and transportation services. 3.3%. 1973 SEC 10-K Form.

[84] National's 1973 SEC 10-K Form reported that it had sales of $117 million in "processing, production and distribution of dairy and food products." The great bulk of these sales were dairy products. Prior to acquisition Hawthorne had some sales in frozen bakery lines and pickles.

[85] FTC, *Dairy Report*, op. cit., pp. 141-142.

[86] *Wall Street Journal*, July 22, 1975, p. 22. In July 1975, IU International entered into an agreement in principal to sell Farmbest, Inc. to Mumford, Inc.

SUMMARY OF IMPACT ON MEDIUM-SIZE DAIRY PROCESSORS

As a group, between 1960 and 1974, the fluid milk and related product sales of the seven firms discussed above grew by about 184 percent (Table 4-14). This was over five times as great as the total industry sales growth of these products. Moreover, these dairies grew much more rapidly than the top four fluid milk and ice cream sellers. Between 1963 and 1972 the fluid milk sales of the top firms actually declined, from $1,323 million to $1,303 million, which represents a significant decline in volume after adjusting for inflation.[87] By 1974, the seven "medium size" dairies shown in Table 4-14 had total sales of fluid milk and related products nearly one-half as great as the top four firms.

Although data are not available of the contribution that mergers made to the accelerated growth of these firms, it appears to have been substantial in the case of several firms. Mergers were most important to the growth of Southland and Farmbest. Since 1960 Southland made a total of 29 dairy acquisitions with combined sales near $100 million, which were largely responsible for the 446 percent growth in its sales. By 1967, Southland was the country's seventh largest fluid milk products processor (Appendix C). Thus Southland apparently capitalized on the FTC's merger policy by acquiring independent dairy processors that otherwise may well have been acquired by the largest firms.

Farmbest, Inc. was a direct progeny of the FTC merger policy. It was created when the FTC compelled Foremost Dairies to dispose of certain properties. Using Foremost's southeastern division as its base, Farmbest subsequently acquired several additional dairies, so that by 1974 it had fluid milk product sales of about $104 million.

Hawthorne Mellody also appeared to benefit from the FTC policy. Acquisitions added roughly $50 million to Hawthorne's fluid milk product sales.

Fairmont's growth was accelerated by acquisitions made in the early 1960's, but thereafter it apparently felt constrained from making further significant dairy acquisitions during the 1960's. This may have occurred because it already was sufficiently large to be susceptible to prosecution under the FTC guidelines had it made any significant sized mergers after 1965.

Knudsen made only two acquisitions since 1960, one of which was quite sizable. Its failure to make more mergers may not have been due to the FTC's policy so much as Knudsen's historical policy of concentrating its operations largely in southern California.

[87] Concentration in Manufacturing, 1972, *op. cit.*, pp. SR2-52. During the same period, sales of the 5th through 20th largest fluid milk processors grew from $542 million to $1,149 million, or 120 percent. At least three firms among the top 20 of 1972 were food chains processing their own milk (see Appendix C).

Table 4-14. Total Sales and Total Fluid Milk and Related Product Sales of Seven Medium-Size Dairy Processors in 1960 and 1974 (Sales in Millions)

Company	Total Company			Fluid Milk & Related Product Sales a		
	1960	1974	Percent Change	1960	1974	Percent Change
Hood & Sons	NA	$ 387b	NA	$ 90b	$ 174b	93%
Fairmont	$ 97	416	329%	90 (est.)	207	130
Dean	56	264	371	56	178	218
Knudsen	55	166	201	50 (est.)	93c	86
Southland	114	1,612	13,141	28	174	521
Hawthorne Mellody (National Industries)	50 (est.)	798	1,496	50 (est.)	100 (est.) d	100
Farmbest (IU Corporation)	f	1,549	—	f	104e	—
Total g	$372	$4,805h	1,192%	$364	$1,030	183%

a Includes fluid milk, ice cream and related products such as cottage cheese and frozen desserts.

b Hood had package fluid milk and related product sales of $88 million in 1958. Its 1974 sales are based on Hood's Annual Report for 1974.

c Economic Information Systems, Inc., New York, estimated that in 1973 Knudsen had fluid milk product sales of $93 million.

d Hawthorne Mellody has been a division of National Industries since 1968. In 1967 Hawthorne Mellody had fluid milk product sales of $92.8 million (Appendix C).

e *Wall Street Journal*, August 22, 1975, p. 22 reported that Farmbest had sales of $104 million in 1974.

f In 1974 Farmbest, Inc. was a wholly-owned subsidiary of IU Corporation, a conglomerate firm. Farmbest consists largely of the former southeastern Foremost Dairies and several other dairies acquired since 1965. Therefore, Farmbest was not operating as an independent firm in 1960. In July 1975, IU International agreed in principal to sell Farmbest to Mumford, Inc.

g Total sales figures excludes Hood in 1960 and 1973 and Farmbest in 1960. Total fluid milk and related product sales excludes Farmbest in 1960.

h Excludes Hood & Sons.

Sources: Except as noted otherwise, sales figures are based on Moody's Industrials, Company Annual Reports, or SEC 10-K Form Reports.

The FTC's merger policy had a somewhat negative effect on at least one medium-size dairy, Dean Foods. Not only was Dean compelled to divest most of the properties it had acquired in one contested acquisition of a medium-size dairy, but the FTC subsequently prohibited Dean from making other dairy acquisitions. Under this policy, the Commission denied Dean permission to make one sizable acquisition, while permiting it to make three.

In sum, it appears that the FTC's policy objective of preventing the further disappearance of medium-size dairies was successful. Only one medium-size dairy was eliminated after the Beatrice decision in 1965, the Bowman Dairy of Chicago acquired by Dean in 1966. On the other hand, Farmbest, Inc. entered the ranks of medium-size dairies because of the forced divestiture of Foremeost's southeastern division.

Additionally, although the policy prohibited medium-size firms from merging with one another, it did not serve as a serious constraint on their acquisitions of smaller dairies. Except for the two largest in 1960, Fairmont and Hood, these medium-size firms made significantly more acquisitions after 1960 than during 1950-60. It seems proper to infer that this occurred largely because they did not have to compete with the largest dairy processors that essentially had been foreclosed from making acquisitions by the FTC policy enunciated in *Beatrice*. This conclusion was borne out by interviews which the authors had with officials of six medium-size dairies. These officials generally expressed the belief that the FTC policy made it easier for them to make acquisitions, although some felt the FTC might challenge future acquisitions because their firms had become quite large. Two officials felt the policy acted as a deterrent to their firms in making significant mergers.

One other possible effect of the policy was to encourage two medium-size firms—Hawthorne Mellody and Farmbest—to become parts of large conglomerate enterprises. Had it not been for the FTC policy, it is possible that these firms would have merged with either other medium or large dairy processors.

This discussion has dealt with only seven of the leading medium-size dairy firms, although there are additional firms that might appropriately have been classified as medium-size fluid milk product firms in 1960. By 1975 there reportedly were at least 80 firms with fluid milk and related product sales of between $20 million and $100 million (Table 4-15). We do not know the number of firms in this size range in 1960, but it very probably was only about one-third this number.[86] Moreover, only one substantial medium-size firm was acquired since 1961, Bowman Dairy, which was acquired by Dean Foods. The FTC subsequently required Dean to divest itself of most of the Bowman properties. In addition, the FTC required Foremost to divest itself of certain properties that contributed to the creation of at least two new medium-size dairies. We already have mentioned Farmbest, Inc. In addition, Foremost was required to divest itself of its large Philadelphia Dairies Division, parts of which were sold to several smaller firms.

[86] In 1960-61, 20 corporations in all fields of dairy processing had assets between $5 million and $10 million (Table 3-2). These firms had sales ranging from about $15 million to $35 million annually. (This estimate is based on the sales-to-asset ratios of firms in this size class, as reported by IRS, *Source Book on Corporate Income Tax Returns*.) Expressed in 1975 dollars, these firms would have had sales ranging between about $25 million and $60 million. Since some of the 20 firms in this size class were primarily evaporated milk, cheese, and butter firms, the number of corporations of this size engaged primarily in fluid milk was less than 20.
In 1975 there were at least 53 fluid dairy processors with 1975 *fluid milk* sales of between $25 million and $75 million (Table 4-15). Hence, the number of medium-size independent fluid milk firms likely tripled between 1960 and 1975.

This and other evidence suggests that both the number and relative importance of medium-size dairies increased appreciably since 1960. And as discussed in the following chapter, since 1960 a number of relatively small dairies achieved status or enhanced their status at the lower end of the medium-size category, often with the generous assistance of acquisitions.

Table 4-15. Sales Size of Fluid Milk Processing Firms with Sales of $2.5 Million or More, 1975

Fluid Milk Plant Sales a	Number of Firms
(Millions)	
$ 2.5 to 4.9	250
5.0 to 9.9	176
10.0 to 19.9	106
20.0 to 24.9	19
25.0 to 49.9	45
50.0 to 74.9	8
75.0 to 99.9	8
100.0 & over	14
Total	626

a Includes total sales of plants whose primary product is processed fluid milk.

Source: Economic Information Systems, Inc., New York, 1976.

CHAPTER FIVE-IMPACT ON INDEPENDENT PROCESSORS

Although independent dairies constitute a declining share of total fluid milk sales, they still represent a sizable competitive force in the industry. In 1970, 15 national and regional fluid milk processors accounted for roughly 31 percent of the fluid milk sales and integrated food chains[oo] accounted for about another 10.2 percent (Table 5-1). Another 12 percent of the business was done by about 93 farmer-owned cooperatives that engage in fluid milk processing. The remaining 47 percent was handled by about 1,528 independent fluid milk processors. Practically all of the latter operated a single plant. Many of the single-plant independents are very small. This explains why independents represented 92 percent of all fluid milk firms but made only 47 percent of the fluid milk sales (Table 5-1). As noted earlier, in 1971-72 there were fewer than 400 dairy corporations of all types (i.e., including cheese and other nonfluid milk companies) with assets exceeding $1 million.

Table 5-1. Number and Sales of Fluid Milk Processors, 1970-1971

Type of Firm	Number of Firms December 1971		Percent of Sales in 1970	
National		7		23.3
Regional		8		7.7
Local Firms:		1,528		47.2
Multiunit	44			
Single Units	1,484			
Cooperatives		93		11.5
Multiunit	23			
Single Units	70			
Integrated Supermarkets: a		31		10.3 (13.0) d
Sole Outlet b	26		8.2	
Others c	5		2.1	
		1,667		100.0

a Firm whose primary business is operating supermarkets.
b Most milk sales through own stores.
c Substantial sales through outlets other than own stores.
d The FTC *Dairy Report, op. cit.*, p. 102, reports that food distributors processed 13 percent of fluid milk sales in 1971.

Source: Alden C. Manchester, *Market Structure, Institutions, and Performance in the Fluid Milk Industry*, Agricultural Economic Research Report No. 248, ERS, USDA, January 1974, pp. 4-5.

[oo] An FTC study estimated that in 1971 food retailers' share was 13 percent. FTC, Dairy Report, *op. cit.*, p. 102.

The future of competition in the fluid milk industry will depend significantly on how many independent dairies survive as competitors. In some markets (usually small ones) independents are important factors and in most they represent a competitive fringe conducive to competition. To identify various factors influencing their growth and probable future viability, as well as assess the impact of the FTC's merger policy, a sample of firms was analyzed to determine factors influencing the profitability and growth of independent dairy processors. This information was received largely from two questionnaires sent to a sample of independent dairy firms in 1971 and 1975.

THE INDEPENDENT DAIRY PROCESSOR SAMPLES

In 1971 a questionnaire was sent to 470 members of the National Association of Independent Dairies (NIDA). NIDA members are not typical of the roughly 1,600 independent dairies reportedly still operating milk processing plants in 1972 because NIDA has relatively few very small operators as members. We estimate that the 470 NIDA firms accounted for about 20 percent of industry fluid milk sales and about one-half of sales by independents.

Of the 470 firms sent questionnaires, 187 responded; 152 of the respondents were independent fluid milk processors.[90] The responding firms made an estimated 10 percent of total fluid milk sales. Although the responding firms were somewhat larger than the average NIDA nonresponding firms, a statistical test of the size distribution of the subsample of responding firms indicated that it did not differ significantly from that of the 470 NIDA firms. Although the sample firms were not representative of the hundreds of very small independents in the industry, some small companies are included among the sample firms. It is therefore believed that the sample is quite representative of a cross section of independents from which a group of viable independents are most likely to emerge over the next decade. Indeed, a major purpose of this analysis is to identify the factors that are likely to determine how many of these firms are likely to survive as viable competitors in the next decade.

In 1975, a follow-up questionnaire was sent to the 152 firms responding in 1971. This questionnaire requested information for 1974. Of these, 30 were no longer in business in July 1975.[91] Of those still in business, 93 (76 percent) responded to the questionnaire.

[90] The 35 other respondents were either out of business in 1970 or were not properly classified as primarily fluid milk and related product processors.

MARKET OUTLETS FOR SAMPLE FIRMS

The customer accounts of the independent dairy processors that supplied such information reveals some striking contrasts in the market outlets of different size independents and significant changes in distribution patterns between 1960 and 1970.

DIFFERENCES BY FIRM SIZE

The smaller independents differed sharply from the others by their heavy reliance on home delivery sales (Table 5-2, col. 8). Although their dependence on home delivery declined over the period, in 1970, independents with sales of less than $5 million still sold over 30 percent of their milk on home delivery routes and those with sales below $1 million averaged about 40 percent home delivery. Another difference was the tendency for small dairies to sell a relatively larger share of their sales to government institutions (col. 7).

In contrast, the small dairies made a smaller share of their sales to retail establishments (cols. 4, 5, and 6). Only dairies with 1970 sales exceeding $10 million sold a significant share (8.1 percent in 1970) to their own milk depots or convenience stores. Independents with sales exceeding $5 million made a somewhat larger percentage of sales to affiliated independent retailers than did firms in other size classes (column 5).

CHANGES BETWEEN 1960 AND 1970

The share of sales to food retailers changed only nominally between 1960 and 1970. Only the six small dairies with 1970 sales under $500,000 experienced a decrease in the share of sales to food chains, although they experienced an increase in their share of total sales going to other retailers. In both years, sales to individual retail stores were much more important than sales to other retailers (23.4 percent in 1970). This suggests many independents cater to the special needs of these stores, which are more costly to service than food chain accounts.

The largest increase between 1960 and 1970 was in sales to government institutions, which rose from 9.7 percent to 13.5 percent. Sales to distributors (independent firms that in turn distribute the milk, often for home delivery) and to outlets owned by the independents also increased modestly.

[91] The fate of five of these firms could not be determined. But since follow-up telephone calls failed to locate them, they are assumed to have discontinued business as independent entities.

Table 5-2. Percent of Packaged Milk Sales Sold Through Various Accounts in 1960 and 1970, 121 Firms Classified by 1970 Sales Volume

1970 Sales (Thousands of Dollars)	Number of Firms a	Average Sales (000)	Retail Food Chains		Affiliated Independent Food Retailers and Wholesale Buyers		Individual Retail Stores		Sales to Government Installations, Schools, etc.		Home Retail Sales		Sales to Distributors		Sales to Own Milk Depots or Convenience Stores		Sales to All Other Outlets	
(1)	(2)	(3)	(4)		(5)		(6)		(7)		(8)		(9)		(10)		(11)	
		1970	1960	1970	1960	1970	1960	1970	1960	1970	1960	1970	1960	1970	1960	1970	1960	1970
0-499	6	$ 243	22.5	11.5	.3	2.3	8.8	10.7	11.8	23.0	49.5	39.7	.8	.8	.8	1.3	5.3	10.7
500-999	21	763	9.1	9.7	1.2	3.3	15.2	18.3	10.5	11.8	52.6	41.7	7.1	9.2	.9	3.6	3.2	2.4
1,000-2,499	37	1,649	11.1	13.9	1.4	.7	25.2	26.2	10.6	15.1	43.4	32.7	2.9	4.8	3.3	4.2	2.1	2.3
2,500-4,999	28	3,628	16.4	17.2	2.5	2.4	23.9	24.3	9.1	13.9	41.6	30.6	5.2	8.2	.7	1.6	.6	1.7
5,000-9,999	14	7,396	11.0	12.0	6.4	6.6	25.6	27.8	8.7	12.6	30.2	19.1	16.6	14.8	.3	2.6	1.2	2.2
10,000 or More	15	16,092	8.1	12.2	6.9	14.1	24.5	23.3	7.9	8.0	36.5	22.6	4.3	5.7	6.8	8.1	5.1	6.3
Totals	121	$ 4,339	12.2	13.4	2.8	4.2	22.3	23.4	9.7	13.5	42.5	31.4	5.6	7.4	2.3	3.7	2.4	3.1

a These were the firms that provided account distribution data for 1960 and 1970. Packaged fluid milk represented over 80 percent of these firms' total sales.

Note: Percents may not sum to 100 percent due to rounding error.

The only category experiencing a decrease over the period was home retail sales, which fell from 42.5 percent in 1960 to 31.4 percent in 1970. The continuing heavy dependence of many independents on home delivery is significant for their future growth and profitability. As shown below such outlets are generally less profitable than other distribution outlets.

Based on a 72 firm subsample of the firms shown in Table 5-2, the trends underway between 1960 and 1970 continued. In 1974 the 72 firm subsample made 18 percent of their fluid milk sales to retail food chains (up 4.6 percent) and 26.9 percent to home delivery routes (down 5.3 percent). The other categories remained essentially unchanged (Appendix F).

Table 5-3. Market Rank of 98 Independent Processors, by Market Size, 1970

Market Size of Fluid Milk Sales (Millions of Lbs. Per Year) a	Number of Firms	Number and Rank of Firms in the Market				
		Top Rank	2nd to 4th	5th to 8th	9 or more	
Under 250	45	4	10	21	10	
250-499	28	1	2	12	13	
500-999	16	0	0	14	2	
1,000 or More	15	1	2	6	6	
Totals	104	6	14	53	31	

a Market definitions and sizes were adapted from R. Raunikar, *et. al.*, "Spatial and Temporal Aspects of the Demand for Food in the U.S.—Fluid Milk," University of Georgia, Agricultural Experiment Station Research Bulletin #61, June 1969. These are not the market definitions used by the processors in ranking themselves. It appears that in most cases the firms considered their markets to be smaller than the market size classes used in preparing this table.

RELATIVE MARKET POSITION OF INDEPENDENTS

Only six of the 104 independents providing this information for 1970 ranked first in their market (Table 5-3).* Four of the top six ranking firms, and 10 of the 14 firms ranking among the top four were in the smallest market category. This suggests that independents fare best in relatively small markets.

* Because the rankings reported in Table 5-3 were made by the responding firms, they are subject to some error. Moreover, the rankings were made in markets as defined by the respondents.

For the most part, however, independents ranked in 5th to 8th place (51 percent) in their markets, and fully 30 percent ranked 9th or lower. This indicates independents represent the competitive fringe firms in the fluid milk industry. That such a large percentage ranked among the 5th to 8th largest in so many markets shows many fluid milk markets have so few competitors that even quite small ones rank among the market leaders.

SIZE OF MARKETS AND PERCENTAGE OF SHIPMENTS SOLD OUT OF MARKET

The smallest independents generally operate in quite small markets and ship very little packaged fluid milk outside their major market (Table 5-4). None of the eight firms with sales of less than $500,000 in 1970 sold in the largest market category (col. 6). Moreover, these firms reported making only 2 percent of their sales more than 50 miles from their major market (col. 7).

In contrast, only two of the 16 firms with sales of $10 million or more sold in the smallest market size category, whereas 12 sold in the two largest market size categories. Moreover, these 16 largest independents made 29 percent of their sales to customers located more than 50 miles from their major market. Firms in the $5-10 million category also sold a sizable share of their sales more than 50 miles from their major market. Overall, however, these data indicate the great majority of sample firms rely very heavily on sales within a short distance of their plants.

The pattern shown in 1970 had not changed significantly by 1974. A subsample of 75 of the firms shown in Table 5-3 reported making only 13 percent of their sales more than 50 miles from their plants in 1974 (Appendix G).

This indicates most of the smallest independents sell exclusively in the market in which they are located, and therefore cannot be considered realistic potential competitors elsewhere. On the other hand, larger independents are significant actual or potential competitors in markets in addition to their major markets.

Table 5-4. Comparison of Firm Size with the Size of the Market and Shipments Out of the Market, 132 Firms, in 1970

1970 Sales (000)	Number of Firms a	Market Size—Millions of Pounds of Fluid Milk b										Average Percent of Firms Packaged Milk Sales Sold More than 50 Miles from Major Markets c
		Under 250		250-499		500-999		1,000 or More				
(1)	(2)	(3)		(4)		(5)		(6)				(7)
		No.	Percent	No.	Percent	No.	Percent	No.	Percent			
Under $499	8	5	63%	2	25%	1	12%	0	0%			2%
$500-999	23	9	39	10	43	2	9	2	9			6
$1,000-2,499	38	15	39	15	40	6	16	2	5			11
$2,500-4,999	30	15	50	6	20	4	13	5	17			12
$5,000-9,999	17	6	35	3	18	4	23	4	23			24
$10,000 or More	16	2	12	2	12	6	39	6	38			29
Totals	132	52	39%	38	28.8%	23	17.4%	19	14.4%			14%

a Some firms were dropped because suitable market definitions could not be delineated.

b Market definitions and volumes were adapted from "Spatial and Temporal Aspects of the Demand for Food in the U.S. Fluid Milk, "R. Raunikar, J.C. Purcell, and J.C. Elrod, Universityof Georgia, Ag. Experiment Station Research Bulletin 61, June 1969.

c Based on 113 firms that provided the necessary information.

FACTORS INFLUENCING THE PROFITABILITY OF INDEPENDENT PROCESSORS

Net profits as a percent of net worth of our sample of independent dairy processors declined in all but one size class between 1960 and 1970. The weighted average for all size classes was 12.1 percent in 1960 and 7.0 percent in 1970 (Table 5-5). Based on a subsample of 68 of the 80 firms for which data were obtained for 1960 and 1970, average profits of independent dairy processors were slightly higher in 1974 than in 1970. Nonetheless, the average net profit rates of the sample firms in 1974 was only slightly more than half as great as comparably sized firms in all branches of manufacturing industry. These findings indicate that between 1960 and 1974 independent dairy firms became significantly less profitable relative to all manufacturing firms of comparable size.

Table 5-5. Profits as a Percent of Net Worth of Sample of Dairy Processors and All Manufacturing Corporations with Assets Under $10 Million, 1960, 1970, and 1974 (Millions of Dollars)

	Size Class of Dairy Processors				Average c	
Year	Under $1	$1 to $5	$5 to $10	$10 to $25 b	Dairy	All Manufacturing
1960	15.0%	10.5%	10.7%	4.6%	12.1%	6.1%
	(13) a	(48)	(14)	(5)	(80)	
1970	12.4	6.7	5.8	6.0	7.0	7.4
	(13)	(48)	(14)	(5)	(80)	
1974	7.8	11.0	7.2	6.3	9.1	16.4
	(14)	(36)	(10)	(8)	(60)	

a Figures in ( ) are number of sample firms in size class.

b Five of these firms had sales in excess of $25 million in 1974.

c Weighted average. The figure for all manufacturing is for firms with assets of $10 million or less. Federal Trade Commission, *Quarterly Financial Report on Manufacturing Corporations*, various years.

The average profit rates of independents in 1970 and 1974 did not vary significantly among size groups except for the smallest, which was well above the average in 1970. The latter reflects the very high profit rates of a few small firms. These results reflect accounting anomalies arising from some small firms' relatively small amount of net worth.

Although average rates did not vary greatly among independents in various size classes there was considerable variation in the profitability of firms within each size class. To examine the causes for this variability, a statistical analysis was used to examine a number of variables believed to influence profitability. Four production and distribution variables and four market structure variables were examined in the analysis. These independent variables and the hypotheses regarding their expected effect on the profits of independent processors are set forth below. Profits (P) are measured by net income after taxes expressed as a percent of net worth.

PLANT SIZE (S)

It is expected that the larger the firm the greater its net profits on net worth. Because most independent processors operating have a single plant, firm size generally also measures economies of scale in plant manufacturing. As discussed earlier, various studies have shown that, up to a point, significant economies of scale exist in processing fluid milk. Because some firms operated more than one plant, the size variables for these plants was measured by total firm sales divided by the number of plants operated by it.

PLANT CAPACITY UTILIZATION (U)

Processing plants are engineered to operate over a predetermined range of output, with the minimum per unit costs achieved at or near full capacity utilization. Assuming all firms of a particular size operate plants with identical technology, profits will vary with the degree of plant utilization. The ideal measure of this variable is the percentage of the firm's existing plant capacity that is utilized. Because such information was not available, an alternative measure was devised: the dollar value of sales generated per dollar of assets. This is an appropriate surrogate for capacity utilization if all firms of a given size use identical technology for then deviations from the optimal sales-to-asset ratio would be caused by variation in capacity utilization. There are several obvious problems with this measure. First, there is no assurance that plants of the same size are using identical technology. Second, asset values are very susceptible to accounting practices, e.g., differences in depreciation policy. Third, a plant's assets may include nonmanufacturing assets. Finally, a given value of assets may be used to produce various product mixes. While acknowledging the above problems with this measure of capacity utilization, we would expect on *a priori* grounds that these deficiencies would result in a weaker observed statistical relationship than actually existed. We hypothesize a positive relationship between the capacity utilization variable and firm profits.

IMPORTANCE OF HOME DELIVERY (H)

Historically, sales directly to consumers have been one of the major outlets for fluid milk. Such sales have declined steadily over the years, from as high as 70 percent prior to World War II to about 12 percent today.[93] For a variety of reasons such sales are more costly to make and generally less profitable than sales to other outlets.[94] A few firms have managed to build up profitable routes of a variety of convenience items, but these are exceptions. It is therefore hypothesized that the greater the firm's home delivery sales the lower its profits. This variable is measured by using home delivery sales as a percent of a firm's fluid milk sales.

[93] Alden C. Manchester, *Sales of Fluid Milk Products, 1954-72*, Marketing Research Report No. 997, ERS, USDA, p. 6 and current estimates for this series supplied by A. C. Manchester of ERS.

[94] National Commission on Food Marketing, Technical Study No. 3, *Organization and Competition in the Dairy Industry*, 1966, pp. 61-64.

SALES TO GOVERNMENT OUTLETS (G)

The other distribution variable involves fluid milk sales to government installations, public schools, and all other local, state, and federal government agencies. In 1969, sales to these government outlets were estimated to be 8.4 percent of all fluid milk sales.[86] These outlets are important to independent processors for three reasons. First, often they are small and dispersed geographically. Therefore, the largest dealers and processing retail chains often do not actively seek their business. Second, government accounts are more stable. Prices fluctuate less and supply contracts are not cut on short notice. Finally, certain government sales contracts are exclusively available to small processors. The Small Business Administration Act provides that all or a portion of fluid milk purchases by military installations and other federal government institutions be set aside for competitive bidding by small, independently owned dairy firms. Thus, a significant proportion of the government sales outlets are designated for independent processors. The combination of the above factors tend to make government purchases a preferable outlet for many independents. It is therefore hypothesized that the greater the share of a firm's fluid milk sales made to government institutions the higher its profits.

MARKET SIZE (M)

Numerous economic studies have shown a positive relationship between concentration and firm profits.[87] Because no satisfactory measures of concentration could be derived for the markets in which the sample firms operated, we were forced to use market size as a proxy for concentration. Market concentration is negatively correlated with market size because small markets can sustain fewer efficient-size firms than large markets (Tables 3-10, 3-11). Since small markets tend to be more concentrated than large ones, and highly concentrated markets more profitable than unconcentrated ones, we hypothesize market size to be negatively related to firm profitability.

NEW ENTRY

Economic theory predicts the entry of additional firms in a market will increase competition, thereby tending to lower the profitability of firms already in the market.[87] Profits are lowered because new entry may have a price and capacity effect on the market. Additional productive capacity nearly always creates some excess capacity in the short run. Thus price and nonprice competition is initiated as the idled capacity seeks refuge.[88] Also, firms with displaced capacity often are forced to supply less profitable outlets.

[86] Manchester, *Sales of Fluid Milk, op, cit.*, p. 8. In 1970, 13.5 percent of the fluid milk sales of the surveyed independents went to these outlets. This was up from 9.8 percent in 1960 (Table 5-2).

[87] L.Weiss, "The Concentration-Profits Relationship and Antitrust," in H.J. Goldschmid and H.M. Mann (eds.), *Industrial Concentration*, Little Brown, 1974, pp. 184-232.

[87] J.S. Bain, *Barriers to New Competition.*

[88] When Harris studied 13 city price wars, he found that in 8 markets a new entrant was the primary or secondary casual factor perpetuating the war. In 6 of these markets, entry was the primary cause of the price war; more than any other variable. Edmond S. Harris, "Price Wars in City Milk Markets," (Washington, D.C., USDA, ERS, Agricultural Economic Report No. 100, October 1966), p. 73.

Three entry variables are included, differing by the type of firm entering. One entry variable is food chains, another is entry by other dairy processors, and the third is entry by both food chains and processors. Each type is hypothesized to exert a negative influence on profits. Because data were not available of the capacity added by new entrants, simple binary (dummy) variables were used to indicate if entry had or had not occurred during 1961-1970.

RESULTS OF REGRESSION ANALYSIS OF FACTORS INFLUENCING PROFITABILITY

Multiple regression analysis was used to test the hypothesis that the above variables were statistically related to firm profitability. The regression equation to be estimated by ordinary least squares is as follows:

$$p_i = a + b1S_i + b2U_i + b3H_i + b4G_i + b5M_i = b6D_i = b7C_i = b8I_i$$

where

P_i = After taxes profits expressed as a percent of net worth for 1970.

a = Constant term.

S_i = Size of plant expressed in dollars. For miltiple-plant firms average plant sales are used.

U_i = Capacity utilization rate expressed as the dollars of sales generated by one dollar of assets.

H_i = The percent of a firm's packaged milk sales to home delivery.

G_i = The percent of a firm's packaged milk sales to government institutions.

M_i = Market size measured by estimated value of 1970 demand.

D_i = The entry of another dairy processor into a firm's market area.

C_i = The entry of a processing retail food chain into a firm's market area.

I_i = The entry of both another dairy processor and a processing chain into a firm's market area.

The estimated multiple regression equation is presented in Table 5-6.[89] The results support most of the hypothesized relationships. The capacity utilization and government sales variables are significant. The home delivery variable has the predicted sign but it is not statistically significant. The plant size variable is not statistically significant.

Each of the three entry variable has the predicted sign, and is statistically significant. The test of significance involves testing the null hypotheses (the variable has no effect) versus the alternative hypotheses. If the t-value is not significant at some predetermined level, the alternative hypothesis is rejected.

[89] This equation used 80 observations for which all the necessary data were available.

Table 5-6. Multiple Regression Equation Explaining the Profit Rate of 80 Independent Dairy Processors for 1970 a

Profit	Intercept	Plant Size	Capacity Utilization	% Home Delivery	% Government Sales	Market Size	Dealer Entry	Chain Entry	Dealer and Chain Entry	
	a	S	U	H	G	M	D	C	I	R^2
P	10.76	0.00	2.19	-0.06	0.54	-0.00b	-17.77	-10.22	-13.22	0.40*
		(.55)	(2.20) **	(-1.08)	(3.93) *	(-1.14)	(-2.94) *	(-1.83) **	(-2.35) **	

a The first row of figures are the regression coefficients. The second row contains t-values. The statistical significance of the regression coefficients is tested by means of the one-tail t-test and the multiple regression coefficient by the F-ratio test. * indicates the coefficient is statistically significant at the 1 percent level and ** indicates coefficient is significant at the 5 percent level.

b Becomes zero when rounded to two decimal places.

S is positive and H and M are negative. These signs correspond to the hypotheses that the firm size variable should have a positive effect, and that the market size and home delivery variables should have a negative effect on profits. Although these variables are not statistically significant, influence should not be dismissed. These signs indicate they may exert the predicted influence on profits as suggested by other studies.

DISCUSSION OF THE RESULTS

The Profit Rate—The model is designed to identify significant factors explaining the profit rates among independent dairy processors. Six variables are identified as having significant influence on profitability. Forty percent of the profit variation of the sample is explained. This is a statistically significant amount. It is not surprising that a cross-sectional model of individual firms, especially small firms, as used here, does not have greater explanatory power. The variables are measured at only one point in time; in this case, 1970. Other studies have shown that the degree of explained variance increases substantially when profits for more than a single year are averaged in constructing the dependent variable. For example, an FTC model explaining the profitability of food manufacturing firms had an R^2 of .55 when the dependent variable used a three-year weighted average to measure a firm's profit rate.[88] However, when the same model was used to explain profit variance in individual years the R^2's were .20, .45, and .35. Use of profits for a single year captures transitory phenomena influencing profits in a given year. For example, some firms may be in temporary price war situations or individual firms may be having an unusually bad or good year for other special reasons. Over time these types of variations tend to average out. But in cross-sectional studies for a single year the above kinds of factors contribute a substantial amount of unexplainable variation. When this unexplained variance is added to the stochastic variance present in all regression models, we may expect relatively small R^2's. Consequently, our statistical findings permit us to make, with confidence, certain inferences concerning the factors influencing the profit rates of individual firms.

Profit rates are jointly dependent upon certain production, distribution, and structural factors. This model illustrates what is obvious to every businessman, i.e., that production efficiency is not the sole determinant of the profitability of particular independent dairy processors.

Also, the various coefficients are estimates for the population of independents. *Ceteris paribus*, the coefficients may be used to assess the profit performance of individual processors with certain characteristics and operating in certain market structures. Results are derived from all included firms and markets. However, we may expect exceptions to the general pattern because they possess some unique characteristic not measured in the model, e.g., superior management or an

[88] Federal Trade Commission, *The Influence of Market Structure in the Profit Performance of Food Manufacturing Companies* (Washington, D.C.: Government Printing Office, 1969), p. 25.

especially strong consumer acceptance for their products. Thus, although the model provides statistically significant explanatory power, caution must be used when attempting to predict factors determining the profit performance of an individual firm.

Plant size is the only production and distribution variable that is not significant, although it had the expected sign. This result is the major surprise in our analysis. A number of studies have demonstrated conclusively that there are substantial economies of scale in production. Our findings should not be interpreted as a contradiction of these studies, but rather reflect certain deficiencies in our data. First, it was necessary to estimate plant sales of a multiplant firm by dividing total firm sales by the number of its plants, a rather crude procedure. Perhaps more important, as noted below, in the last decade many of the sample firms grew substantially by acquiring other dairies. In the process, merging firms frequently ended up with excess capacity. As a result, by 1970 they had not had sufficient time to adjust their production operations to optimum levels for their new size. This is borne out in a multiple regression analysis in which merger is included as an independent variable.[101] Not only is the merger variable not statistically significant, but it has a negative sign, i.e., the larger a firm's share of growth that was attributable to merger, the lower its profits. An additional factor detracting from our results is that nearly all independents have multiple products. The variation in product mix among plants introduces variation that contributes to the nonsignificance of the firm size variable. If the proper data for measuring economies of scale were available, and if merging firms had had sufficient time to consolidate their operations in fewer plants, the variable would most likely have been significant.

Capacity utilization is the other production variable analyzed. It is significantly positive. If everything else is held constant, a one dollar increase in the sales-to-asset ratio would increase profits as a percent of net worth by 1.8 percent. However, caution must be used when making such statements. This variable is truly a child of the data. Real asset values are a function of the technical age of the assets. Accounting value may or may not reflect real asset values. Hopefully, variation caused by different accounting techniques among firms averaged out. If they did, and if the direction of the bias resulting from divergence of real and accounting asset values were known, the regression coefficient could be adjusted. Since it could not be adjusted, the existence of bias must be explicity recognized when evaluating the capacity utilization coefficient.

Both *distribution* coefficients have the expected effect on profits. The home delivery sales variable affected profits negatively, although the variable was not statistically significant, as explained above. Sales to government institutions had a statistically significant positive effect on firm profits. Both variables are measured in percentage terms. There were no particular measurement problems.

[101] Appendix E shows the results of a regression model which includes mergers as an independent variable. Although it was based on a smaller sample, the results for other variables are quite similar to those reported in Table 5-6.

Home delivery sales (see Chapter 3) are declining in demand and are high cost, low margin outlets. They are expected to have a negative relationship to profits. The model tends to confirm this expectation. Based on this finding, one would expect a profit maximizing firm to dispose of all its retail accounts in the long run. However, theoretical expectation as to what is best in the long run cannot be used to make business decisions in the short run. Many independents cannot effectively compete for the lower cost, high volume wholesale accounts, and in a sense are trapped with a large percentage of their sales in home delivery. Were these firms to dispose of their retail routes they would be even less profitable in the short run. Of course, the long-run outlook for most firms heavily dependent on home delivery is bleak, although some firms may actually have comparative advantages for retail sales, i.e., those with especially strong consumer attachments. Others may be situated in markets where the demand for home delivery milk is stable or increasing. So, it is not inconceivable that a firm might have profitable retail sales. However, given the results of this analysis we may expect firms depending on shrinking home delivery sales to continue to be less profitable than those less dependent on such sales.

Sales to government institutions constitute a significant sales outlet for independent dealers. Their profitability is substantiated by the regression results, which indicate these sales have a very strong positive effect on the profits of independents. Other things being held the same, an increase of 1 percentage point in a firm's share of packaged milk sales going to government institutions would increase the firm's profits by 0.54 percent on net worth.

Market size, which was used as a proxy for market concentration, has many of the same methodological problems associated with the firm size variable. Therefore, the nonsignificance most likely arises from measurement problems rather than incorrect theory.[102]

All the *market entry* variables conformed to their hypothesized relationships and were statistically significant. Other processor entry, chain entry, and both chain and processor entry exerted a strong depressing effect on profits.

The dummy variable for entry of other dairy processors is designed to measure the type of entry, not quantity of entry. The determining factor is that all entrants had to be regular dairy processors. Of the three entry variables, this one had the largest estimated coefficient. There may be one economic and one statistical reason for this result. Even if a dairy processor builds a plant, the competitive impact of its entry is different than that of a chain. Dairy processors enter and compete for most types of accounts. Thus, their competitive effect is felt directly by most existing firms in the market. Additionally, as the entering firm's sales are substituted for those of firms already in the market, the entrant creates excess capacity. Hence new entrants erode profits both because they exert a downward pressure on prices and because they create excess capacity for existing forms.

[102] A recent study found that the degree of market concentration is positively correlated with plant-retail price margins for fluid milk, Manchester, *op. cit.*, pp. 27-29. This margin measures the difference between the plant purchase price and the average price to consumers.

Chain entry, which also is statistically significant, differs from other processor entry in two respects. First, the direct price effect frequently is absent. Most chains carry private labels in their stores before they begin processing. Private label brands cause direct price competition when they are introduced. In most cases this competition took place before 1970, the year used in the analysis. After chains begin processing, they usually maintain their existing price levels. Therefore, chain entry into processing often does not have a *direct* effect on market prices: On the other hand, chain entry into processing precipitates a substantial *indirect* impact on profits. Retail food chains sell a substantial proportion of packaged fluid milk in the market. Prior to a chain's entry, typically its milk was processed by one of the largest dealers already in the market. As a chain began to process, the plant capacity used for private label packaging was idled. This excess capacity had to seek new outlets, thereby often resulting in keen price competition, and falling profits.

The adverse profit effects of chain entry does not affect all processors in the same fashion. Chains usually supply only their own accounts, which are composed primarily of high volume product lines. Thus, the most *direct* effect of chain entry is in segments of the market served mainly by large regional and national dairies, which may explain why the effect of chain entry on the profits of independents is less than entry by other dairies. However, it is possible to test statistically whether the estimated coefficients for the two types of entry differ significantly. A simple t-test is used to test the null hypothesis that the two entry coefficients are equal, versus the alternative hypothesis that they differ significantly. This test indicated that the alternative hypothesis must be rejected. The estimated effect on profits of processor versus chain entry are not significantly different. In other words, there is no statistical difference between the negative influence on profits resulting from these two types of entry.

The third entry variable—*entry by both processors and chains*—is also significantly negative. Using the same procedure described above, this coefficient was found not to be significantly different from the other two entry variables.

These findings regarding the influence of entry on profitability support the expectation of economic theory that new entrants may exert a powerful influence on competition and therefore profitability.

IMPACT OF MERGERS ON GROWTH OF INDEPENDENTS

Following the issuance in 1956 by the Federal Trade Commission of four complaints challenging mergers by the country's top four dairy processors, merger activity of these and other top dairies slowed during 1956-61. After the first decision in one of these cases in 1961, mergers by the top dairies came to a virtual halt (Table 4-1). The alleged purpose of the FTC'S policy was not to stop all mergers in the industry, but rather to channel merger activity away from the largest dairies to medium and small dairies. The preceding chapter documented that this objective apparently was

achieved. Despite the virtual halt in acquisitions by the largest firms, medium and small firms actually increased their acquisition activity. Here we examine the impact of mergers on the growth of independent dairies and, specifically, whether such mergers contributed significantly to the emergence of more viable independents.

ACQUISITIONS BY SAMPLE INDEPENDENTS

Of the 137 independent firms sampled that provided information of their merger history between 1960 and 1970, 79 made a total of 183 acquisitions. The 136 acquisitions for which sales information was given had combined sales of $96.2 million (Table 5-7). The 47 acquisitions for which no sales information was reported are believed to have been quite small. If we assume they averaged $100,000 each, these acquisitions involved sales of only about $5 million, which would increase to over $100 million the sales of companies acquired by the 137 sample firms.

The merger activity of these firms continued during 1971-74. A subsample of 84 of the previously surveyed firms made 32 acquisitions during 1971-74; these acquired firms had combined sales of $43 million (Appendix H). The average size acquired firm had sales of $1.4 million, which was twice the average size of those acquired during the 1960's.

If the acquisition activity of our sample firms is representative of the roughly 400 to 500 firms that constitute the remaining "hard core" of surviving independent dairy processors, independent dairies probably made fluid milk and related product acquisitions in excess of $500 million during 1961-74.

In addition, a separate survey by the authors showed that 12 cooperatives with fluid milk processing and distributing operations made 53 acquisitions of fluid milk and related product firms during 1961-71. These acquisitions involved sales of $62.2 million. Although it is not possible to estimate the total acquisitions of fluid milk operations by all dairy cooperatives, it is likely that they exceeded $100 million.[103]

The acquisitions made by independents and farmer cooperatives during 1961-74 were very nearly as great (measured in sales of acquired units) as the acquisitions of the top four corporations during the 1950's.[104] This is in sharp contrast to the about $12 million in acquired sales of the top four dairy processors during 1964-74.[105]

[103] In 1972 there were about 45 cooperatives with fluid milk operations. The 12 of these cited included the largest of these. Information concerning the size distribution of all cooperatives was not available to the authors.

[104] These totaled close to $700 million (Table 2-1).

[105] Table 2-2 and 2-3. Although the five firms under FTC orders requiring premerger approval made 13 acquisitions with sales totaling $53 million, Dean Foods made three of these with combined sales of $40.6 million.

Table 5-7. Merger Experience of 137 Independent Dairies During 1961-1970.

Size of Acquiring Firm, 1970 Sales	No. of Firms	No. of Companies Acquiring Facilities or Routes	Percent of Firms Acquiring	Number of Acquisitions					
				Total Number	Sales Information				
					Reported	Not Reported	Total Sales of Reported Acquisitions (000)	Average No. of Acquisitions	Average Sales of Reported Acquisitions (000's)
Less Than 500	9	0	0	0	N/A	N/A	N/A	N/A	N/A
500-999	24	10	42%	17	6	11	$ 716	1.7	$ 119
1,000-2,499	39	18	46	33	25	8	3,903	1.8	156
2,500-4,999	30	21	70	45	42	3	27,705	2.1	660
5,000-9,999	17	15	88	43	36	7	21,871	2.9	608
More Than 10,000	18	15	83	45	27	18	41,995	3.0	1,555
Total	137	79	58%	183	136	47	$96,190	2.3	$ 707

SIZE DISTRIBUTION OF ACQUIRED COMPANIES

Most acquisitions made by independents were quite small. Nonetheless, a number of relatively sizable acquisitions were made. During 1961-70, 30 of the firms acquired had sales of $1 million or more; this group had aggregate sales of nearly $60 million (Table 5-8). During 1971-74, 13 of the acquired firms had sales of $1 million or more, and accounted for 96 percent of all firms acquired during the period.

GROWTH OF ACQUIRING AND NONACQUIRING FIRMS

Acquisitions played an important role in the growth of those firms making acquisitions. Table 5-9 shows 86 firms for which 1960 and 1970 sales data were available. Whereas all firms grew an average of 79 percent, nonacquiring firms grew by 36 percent and acquiring firms by 95 percent. The contrast in growth between acquiring and nonacquiring firms was greatest in the small size classes. Whereas nonacquiring firms in sales classes below $2.5 million grew by less than 50 percent over the period, the acquiring firms in these classes grew by an average of more than 150 percent. In the two largest size classes the differences were less dramatic, although acquiring firms grew about twice as rapidly as nonacquiring firms. Acquisitions were also important to a subsample of firms during 1971 and 1974 (Appendices I and J). However, the growth impact was somewhat less pronounced.

The importance of acquisitions to the acquiring firms is further illustrated in Table 5-10. The 33 firms in the three size classes below $2.5 million made acquisitions very nearly as great as their 1960 sales. The larger independents made a relatively smaller volume of acquisitions, when sales of acquired companies are compared with the acquirers' 1960 sales. However, when acquisitions are compared with the sales growth of the acquired company between 1960 and 1970 a different picture emerges. Sales of acquisitions were less than half as great of the growth of companies with 1960 sales below $5 million. On the other hand, the acquisitions of the eight firms with sales over $5 million were about equal to these firms' total growth over the period. By either measure, acquisitions played an important role in the growth of the acquiring firms as a class.

Table 5-8. Size Distribution of Dairy Processors Acquired by 137 Independents, 1961-70, and by 84 Independents, 1971-74

Sales of Acquired Unit (000)	Acquired by 136 Firms, 1961-70		Acquired by 84 Firms, 1971-74	
	Number Acquired	Total Sales of Acquired Units (000)	Number Acquired	Total Sales of Acquired Units (000)
Under $100	20	$ 1,229	4	$ 240
100-249	29	5,015	4	475
250-499	28	9,491	2	870
500-749	18	12,000	5	2,600
750-999	11	9,774	2	1,550
1,000-2,499	23	31,558	6	8,800
2,500-4,999	5	16,123	4	19,940
5,000-9,999	2	11,000	3	12,500
Size Unknown	47	—	2	—
Totals	183	$96,190	32	$42,975

Table 5-9. Comparison of Sales Growth Between 1960-70 for 52 Acquiring and 34 Nonacquiring Independent Dairy Processors

1960 Sales (000)	All Firms				Nonacquiring Firms			Acquiring Firms			
	No. of Firms	1960 Sales (000)	1970 Sales (000)	Percent Change	No. of Firms	1960 Sales (000)	1970 Sales (000)	Percent Change	No. of Firms	1960 Sales (000)	1970 Sales (000)	Percent Change
Less Than 500	11	$ 3,147	$ 8,887	182%	4	$ 670	$ 1,470	119%	7	$ 2,477	$ 7,417	199%
500-999	20	14,697	28,608	95	11	8,439	12,511	48	9	6,258	16,097	157
1,000-2,499	30	47,825	103,519	116	13	19,534	27,472	41	17	28,291	76,047	169
2,500-4,999	14	53,366	110,527	107	3	8,547	12,768	49	11	44,819	97,759	118
More than 5,000	11	95,298	131,828	38	3	22,706	27,388	21	8	72,592	104,440	44
Totals	86	$214,333	$383,369	79%	34	$59,896	$81,609	36%	52	$154,437	$301,760	95%

Note: Fifty-one firms included in Table 5-8 are excluded from this table because 1960 sales and/or acquisition data were not provided.

Table 5-10. Importance of Acquisitions in the Growth of Acquiring 52 Firms, 1960-1970

1960 Sales Categories (000)	Number of Firms	Total Sales (000)			Acquisitions			Sales of Acquired Firms as Percent of:	
		1960	1970	Percent Change	Number	Average	Sales of Acquired Firm a (000)	1960 Sales	Sales Growth 1960 to 1970
Less than $500	7	$ 2,477	$ 7,419	199%	16	2.3	$ 2,303	93%	47%
500-999	9	6,258	16,097	157	13	1.4	4,300	69	44
1,000-2,499	17	28,291	76,047	169	41	2.4	28,000	99	59
2,500-4,999	11	44,819	97,759	118	31	2.8	15,891	35	30
More Than 5,000	8	72,592	94,440	30	21	2.6	23,808	33	109
Totals	52	$154,437	$291,762	89%	122	2.3	$74,302	48%	54%

a Sales based on 117 acquisitions for which data were given.

REGRESSION ANALYSIS OF FACTORS INFLUENCING FIRM GROWTH

Multiple regression analysis was used to identify the importance of several factors that were hypothesized to influence the growth of independents between 1960 and 1970. Several variables in addition to mergers were included because it was believed they might have an independent effect on total firm sales growth.

MERGERS (M)

It was hypothesized that the relative size of acquired units was the single most important factor influencing a firm's growth over the period 1960-1970. The *relative* importance of acquisitions was measured by a firm's acquisitions (measured by sales) as a percentage of its 1960 sales.

SIZE OF ACQUIRING FIRM (S)

It was hypothesized that small firms would grow less rapidly than large ones because they are less likely to have the resources required to expand. This variable was measured by each firm's sales in 1960.

IMPORTANCE OF HOME DELIVERY SALES (H)

As noted earlier, the market for home delivered milk has been declining for years and is less profitable than other market outlets. It was therefore hypothesized that the greater the percentage of a firm's sales in this market in 1960, the less rapidly would it grow. The variable was measured by a firm's home delivery sales as a percentage of its total sales.

IMPORTANCE OF FLUID MILK SALES (F)

Fluid milk sales are growing less rapidly than most other related dairy products, e.g., ice cream and specialties. It was therefore hypothesized that the more dependent a firm was on fluid milk sales the less rapidly it would grow. The variable was measured by taking fluid milk sales as a percentage of a firm's total sales.

STATE MILK CONTROL STATES (C)

Some states have laws that control the price at which fluid milk processors sell their milk. The effect of such controls is to prevent price competition. Insofar as independent firms are less able to compete effectively than larger ones, we would expect the existence of state milk control laws to encourage the growth of independents. A simple binary (dummy) variable was used to indicate whether or not the firm operated in a state with a milk control law.

SIZE OF MARKET (D)

There is reason to expect that small firms are able to compete more effectively in small markets than large ones.[106] We therefore hypothesized that the growth of independents was negatively correlated with the size of the markets in which they operated. This variable used the same market definitions described elsewhere in this report.[107]

SALES TO GOVERNMENT OUTLETS (P)

Many independent processors make a significant share of their fluid milk sales to federal government installations and to various local and state institutions. As noted above, independents selling a large share of their fluid milk sales to such outlets tend to have significantly higher profits than other independents. Although the impact of such sales on growth is not entirely clear, it seems likely that by enhancing firm profitability such sales would also enhance firm growth. We therefore hypothesize a positive relationship between the relative size of a firm's sales to public institutions and firm growth.

RESULTS OF REGRESSION ANALYSIS OF FACTORS INFLUENCING FIRM GROWTH

Multiple regression analysis was used to test the hypothesis that firm growth was statistically related to the above independent variables. The regression equation to be estimated by ordinary least squares is as follows:

$$G_i = a + b1\ M_i + b2\ S_i + b3\ H_i + b4\ F_i + b5\ C_i + b6\ D_i + b7\ P_i$$

where

A_i = Constant term
G_i = Percentage growth in firm sales between 1960 and 1970.
M_i = Mergers and acquisitions of firm.
S_i = Size of acquiring firm.
H_i = Home delivery sales of firm.
F_i = Fluid milk sales of firm.
C_i = Whether or not firm operated in state with milk price control law.
D_i = Size of market in which firm operated.
P_i = The percent of a firm's packaged milk sales to government institutions.

All but one of the independent variables have the hypothesized relationships, but three are not statistically significant (Table 5-11).

[106] *Infra*, pp. 68
[107] *Infra*, Table 5-3

Most significant is the *acquisition* variable. When all other things are held constant, an essentially unity relationship exists between mergers as a percent of a firm's 1960 sales and the percentage increase in its sales between 1960 and 1970. This indicates that acquisitions had a *direct* and *continuing* impact on a firm's growth which was almost identical to the amount of acquired sales. The regression coefficient of .98 should be interpreted as indicating that if a firm made acquisitions equal to 100 percent of its 1960 sales, its sales grew by .98 percent between 1960 and 1970, after adjusting for other factors influencing growth. This is not to say, of course, that mergers were responsible for all of the growth of merging firms. As shown in Table 5-10, mergers accounted for just over half of these firms' growth between 1960 and 1970. The remainder of their growth is explained by factors not included in the analysis. Perhaps the most important of these is the inflation in wholesale dairy product prices, which increased by 29 percent between 1960 and 1970.

A subsequent analysis was made of a subsample of these firms' growth for the period 1960-1974. Again, the merger variable was statistically significant (Appendix K). The regression coefficient of 1.34 indicates that mergers had a relatively larger impact on growth over this longer period.

Firm size does not have the hypothesized positive influence on growth. Although the regression coefficient is small, there was a slight tendency for large firms to grow less rapidly than small ones. Perhaps this is due to a bias in sampling only firms surviving in 1970. Since relatively more small than large independents failed or otherwise disappeared between 1960 and 1970, the small firms in our sample represent the surviving and therefore most successful small independents. Thus their growth experience is less representative of small firms generally than is that of the larger independents, fewer of which failed during the 1960s.

The *home delivery* variable has the expected negative sign and is statistically significant. This variable should be interpreted as meaning that the greater the percentage a firm's home delivery sales in 1960, the slower it grew.

The *government sales* variable did not have the expected sign nor was it statistically significant. Thus, whereas independent dairy processors with relatively large sales to government outlets generally were more profitable than other independents, the relative volume of such sales did not have a significant impact on their growth between 1960 and 1970.

Table 5-11. Regression Results of the Impact of Various Factors on the Rate of Growth in the Sales of 81 Independent Dairies Between 1960 and 1970a

	A Intercept	M Mergers as % of 1960 Sales	S 1960 Sales of Firm	H Home Delivery	F % Fluid Milk Sales	C State Milk Control Dummy	D Size of Market	G % Sales to Government	R^2
G	105.72	0.98	-0.00	-0.45	-0.16	11.0	-0.00d	-0.50	0.66
Growth in sales	(2.31)	(11.06) c	(-1.67) b	(1.71) b	(-0.35)	(0.79)	(-0.38)	(-0.68)	[20.02] d

a Fifty-six firms were excluded from the analysis because they did not provide data for one or more variables.
b A one-tail test indicates the coefficient is statistically significant at the 5-percent level.
c A one-tail test indicates that the coefficient is statistically significant at this one one percent level.
d Indicates that R^2 is statistically significant at the one percent level.
e Zero due to rounding.

Note: Numbers in parentheses are t - values. The value in a bracket is the F - ratio.

The other three variables, *fluid milk sales, milk control states,* and *size of market* all had the hypothesized signs but were not statistically significant.[108]

In summary, the relative rate of merger activity had the greatest explanatory power of the variables examined. It supports strongly the conclusion that mergers played a central role in the growth of the independent firms studied. It seems safe to infer that had many of these firms not made acquisitions during the 1960s they would have experienced very little or no growth. Although growth *per se* is no pancea to success, given the substantial economies of scale in the industry, mergers helped a number of independents achieve scales of operation which enabled them to achieve a size sufficient to enjoy most economies of scale in processing.

CHARACTERISTICS OF INDEPENDENTS DISCONTINUING BUSINESS BETWEEN JANUARY 1971 AND JULY 1975

Of 152 firms surveyed in 1975, thirty had discontinued business between January 1, 1971 and July 1975 (Table 5-12). This demise of one-fifth of the independents surveyed very probably represents the minimum percentage of discontinuances among all independents still operating in 1970, since the surveyed firms were larger than the average of all independents. Between 1967 and 1972, the total number of fluid milk processors declined from 2,988 to 2,024, or by about one-third.[109]

As shown in Table 5-12, the discontinuance rate was highest among the smallest firms. One-half of those with 1970 sales under $500,000 and one-third of those between $500,000 and $1,000,000 discontinued business in this four and one-half year period. On the other hand, only one dairy with sales over $10 million and two with sales between $5 million and $10 million discontinued business.

The discontinuing firms as a group had very low profits in 1970 (Table 5-13). In each size class the discontinuing firms had much lower average profit rates than the independents continuing in business. The lower profit rates of discontinuing firms very probably was caused, partly at least, by their heavier dependence on the less profitable sales outlets. They relied more heavily on home delivery routes and single-store retailers than did firms that continued in business (compare Appendices F and L). On the other hand, the discontinuing firms did a smaller share of their business with government purchases, which tend to be more profitable for independents. It is significant that the one firm in the largest size category that discontinued business had made 45 percent of its sales to home delivery routes in 1970.

[108] A similar regression was run for a subsample of 39 firms for which information was available for the entire period, 1960-74. The results were esentially the same, except for the size of the regression coefficient for mergers, as noted above (Appendix K).

[109] *Concentration Ratios in Manufacturing, op. cit.*

Table 5-12. Size of Independent Dairies Continuing and Discontinuing Business Between 1970 and July 1975

Firm Sales in 1970 (000)	Total Number of Firms	Firms Continuing in Business		Firms Discontinuing Business	
		Number	Percent	Number	Percent
Under $500	10	5	50.0%	5	50.0%
$500-999	33	22	66.7	11	33.3
$1,000-2,499	36	29	80.6	7	19.4
$2,500-4,999	35	31	88.6	4	11.4
$5,000-9,999	18	16	88.9	2	11.1
$10,000-25,000	18	17	94.4	1	5.6
Total	150	120	80.0%	30	20.0%

Table 5-13. Profit Rates for 1970 of 68 Firms Continuing in Business and 17 Discontinuing Business Between 1970 and July 1975

Firm Sales in 1970 (000)	Continuing Firms		Discontinuing Firms	
	Number	Average Profit Rate	Number	Average Profit Rate a
Under $500	0	—	1	negative b
$500-999	14	14.8%	5	3.3%
$1,000-2,499	15	10.4	6	0.8
$2,500-4,999	21	6.5	3	2.5
$5,000-9,999	10	10.0	2	−6.2
$10,000-25,000	8	6.0	—	—
Total	68	8.5%	17	0.7%

a Profit rates are expressed as net income as a percent of net worth. All profit data are for 1970.

b Firm reported that it experienced losses but did not report actual amount.

view of the size, low profitability, and market outlet characteristics of the scontinuing firms, it seems highly probable that many more independents will leave e industry by 1980. As shown earlier (Table 5-5), in 1974 average profit rates of dependents in all size classes were only about one-half as large as other small anufacturing corporations. This augurs ill for the future of most independents. This latively low profitability reflects, in part at least, that very few independents are rge enough to operate minimum optimum size plants. If we assume that a 40,000 uart-a-day plant represents the minimum optimum size of a fluid milk plant, this ould require annual sales of about $3.5 million at 1974 prices. Somewhat over half f the firms surveyed in 1975 had sales of $3.5 million or more in 1974. According to one source, there were at least 626 fluid milk firms with sales of $2.5 million or more n 1975 (Table 4-15). The sales of the smallest of these were somewhat below that required to support a plant bottling 40,000 quarts a day, the minimum size necessary to achieve most economies of scale in fluid milk processing. If we assume some of the 187 firms in the $2.5 million to $5 million class will grow sufficiently to support efficient plants and some smaller firms will grow enough to support such plants, there is the potential for about 500 viable fluid milk firms. This assumes, of course, that such small firms will have access to sufficient financial resources necessary to expand and modernize their operations. As indicated above (Table 5-13), even though some of the firms discontinuing business during 1971-1975 were large enough to operate efficient size plants, they had low or negative profits. This could have been due to a variety of reasons unrelated to scale of operations. For example, the largest independent discontinuing business during 1971-75 made most of its sales via home delivery routes, which are generally less profitable than other outlets. Based on the available evidence, we believe that at most, roughly 500 fluid milk processors will survive as viable competitors over the next decade. We may therefore expect a continuing exit of firms from the industry, mostly via merging with existing firms. This could involve something on the order of 20 percent of current industry capacity.

FTC POLICY ACCELERATED ACQUISITIONS BY SMALLER FIRMS

The merger rate of firms other than the top eight dairies accelerated following the initation of the FTC policy toward mergers by large dairy processors (Table 4-2). The acceleration in merger activity by medium-size dairies (as discussed in Chapter 4) and by small dairies presumably occurred because potential acquirers no longer had to compete with the largest firms in making acquisitions. Moreover, some small and meduum-size companies that otherwise would have sold out to the largest firms themsleves became potential acquirers.

Analysis of a sample of independent fluid milk processors demonstrates that acquisitions played a major role in their growth between 1960 and 1974. Independent firms not making acquisitions grew at a decidedly slower pace than those that did. And when other factors influencing growth are taken into account,

acquisitions account for much of the growth of many independents during the period.

Insofar as the FTC merger policy was responsible for the greater use of merger by independents in their growth, it resulted in the acceleration of the growth of many independents. Such growth was not without its costs, however. Very probably, some independents that sold out did so at lower property values than would have been the case had FTC policy not restrained larger dairy firms from bidding for these properties. Although it is not possible to determine how much sellers forfeited because of the FTC policy, surviving independents evidently view it as substantial. Ninety-six percent of surveyed independents responded *yes* to the question, "Do you believe independent dairies should be permitted to sell their business to whomever they wish?" On the other hand, however, 95 percent of the 146 responding firms reported that they wished to continue their daily business for the next five years, although about one-half of these firms indicated a willingness to sell their businesses, if they could find a suitable buyer. This was particulary true of firms with sales below $1 million, 53 percent of whom expressed a desire to sell out. On the other hand, only 29 percent of those with sales exceeding $1 million were interested in selling out.

Since 1970 was a relatively unprofitable year for small business, the high percentage of independents indicating a desire to continue in the fluid milk business suggests the likelihood that many of the sample firms (especially those with 1970 sales over $1 million) had hoped to remain, or develop into, viable competitors in the 1970's. By July 1975, however, one-fifth of the companies operating in 1971 had disconintued operations. It is perhaps significant that 25 of the 30 discontinuing companies reported "yes", in 1971, to the question, "Do you want to continue to operate your dairy business for the next five years?" Evidently, by July 1975 events had forced or encouraged these firms not to realize their continued operations as independent businessmen. Of course, many previous owner-operators continue in the dairy business as employees of the acquiring firm. Thus merger provided a means for exiting from the industry as owner-operators, permitting them to receive some return for their assets.

In considering the importance of mergers between 1960 and 1975 to many independents, many surviving firms doubtless will be beneficiaries in the late 1970's and 1980's of an FTC policy that continues to place some constraints on acquisitions by the largest firms. The beneficiaries of this policy may, of course, benefit at the cost of those firms wishing to sell out.

Maintenance of a competitive economy often involves a "trade-off" between protecting the interests of individual competitors and the broader public interest of protecting or enhancing the competitive process. Dairy merger policy involves such a trade-off. Although it is not possible to measure precisely the benefits and costs of a particular policy, the preceding analysis provides a basis for some conclusions concerning the wisdom of alternative policies for the future.

CHAPTER SIX-SUMMARY AND CONCLUSIONS

STRUCTURAL CHANGES

The FTC merger policy toward the fluid milk processing industry must be viewed within the changing structure of the industry. When the FTC initiated its first merger complaint in 1956, the industry was experienceing drastic organizational changes. During the decade of the 1950's the number of fluid milk processors declined from 8,185 to 5,328. This decline has continued, and by 1974 there were 1,619 fluid milk processors or only 20 percent as many as in 1950.

In large part this decline reflected rapidly growing economies of scale in processing fluid milk. Based on our analysis, we believe that fewer than 500 fluid milk processors will survive as viable competitors over the next decade. This means that over 1,000 fluid milk processors operating today are still too small to participate as viable long-term competitors. Although some of these may grow into the ranks of viable firms most will disappear either through liquidation or acquisition by larger units.

Although economies of scale in production dictate a demise of additional firms these economies do not appear so large as to make inevitable very high levels of concentration in particular markets. This inference follows because fluid milk markets, which traditionally have been quite localized, have grown sufficiently large so that most can sustain a fairly large number of efficient-size fluid milk plants. Studies show, for example, that a minimum optimum-size plant represented only 1 to 2 percent of consumption in the nation's largest metropolitan area and 8.5 to 17 percent in the 20th largest metropolitan area. If we apply the larger market definition used by Manchester (Table 3-11), many more markets could sustain sufficient efficient plants to permit relatively low levels of market concentration—say, where four sellers control less than 50 percent of sales. This is important because cross-sectional studies of many manufacturing industries,[110] as well as a recent study of the fluid milk industry,[111] indicate firms attain significant market power over price and other market decisions when most sales are held by four firms than by, say, ten or more.

But merely because economies do not make inevitable high concentration, it may nonetheless come about if some firms, through merger or other means, hold market shares much larger than is necessary to operate efficient-size plants. This is the case in many markets today, where four firms control well over 50 percent of fluid milk sales.

IMPACT OF FTC MERGER POLICY

The primary objective of the FTC's merger policy initiated in the early 1960's, as enunciated in its *Beatrice* decision, was to divert mergers from the largest dairy

[110] Weiss, *op. cit.*
[111] Manchester, *Market Structure, op. cit.*

processors toward medium-size and viable smaller concerns, and to prevent mergers among medium-size firms (Chapter Two). This policy was based on the assumption that while technological and other forces made it inevitable that many small dairies leave the industry, it was not inevitable that they be acquired by the largest firms. Moreover, there was an implicit assumption that technological and other forces would permit the survival and growth of a significant group of smaller and medium-size firms if they could grow rapidly enough to adjust to changing market conditions. The restraints placed on mergers of the largest firms were designed to permit the smaller dairy firms to grow more rapidly via merger without competing with the largest dairies in making acquisitions. The ultimate objective of the policy was to maintain a sufficient number of viable dairy processors to insure effective competition in the industry.

IMPACT ON LARGE DAIRY PROCESSORS

The most direct effect of the FTC policy was to channel the direction of merger activity away from the leading four firms to medium-size and independent ones. In the five years (1951-55) before the FTC first challenged fluid milk acquisitions by large firms in 1956, the top eight dairy processors acquired an average of 71 dairy processors annually. Between 1956 and 1961, before the FTC issued its first decision in one of these cases, these firms' merger activity slowed to 27 acquisitions annually. In the thirteen years (1962-75) following this decision, the top eight dairies averaged only four acquisitions annually, most of which were very small. The most apparent result of this policy was to stop the largest companies from expanding their share of the fluid milk industry, Between 1950 and 1958, when the largest companies were pursuing an unrestrained growth by merger policy, they expanded their share of national fluid milk sales by over one-third, from 17 percent to 23 percent. Since 1958, which essentially marked the end of these firms' growth by merger, their market share has declined steadily, until by 1972 it was back to the 1950 level, 17 percent.

Although these companies virtually stopped making dairy acquisitions after 1961, they participated actively in the great conglomerate merger movement that swept across American industry in the 1960's. During 1961-74 the top four companies acquired at least 278 companies for which they paid at least $1,344 million. With the exception of Kraftco, acquisitions contributed more to the growth of the largest dairy firms in the 1960's than during the 1950's. The result was that total sales of the top four firms as a group grew more rapidly in the 1960s than in the 1950s.

The post-1961 conglomerate merger growth experience of the leading dairy processors may be interpreted as the product of an FTC merger policy that essentially prohibited further dairy acquisitions by these firms. This may be partially true. But, had there been no restraints on dairy acquisitions, and had the top companies acquired a volume of dairy properties comparable to the nondairy properties that they actually acquired, they would in all likelihood have acquired

many of the remaining medium-size and leading independent dairy processors by 1975.

IMPACT ON MEDIUM-SIZE FIRMS

Despite the sharp curtailment of dairy acquisitions by the industry leaders after 1956, the *relative* merger rate of all other dairy processors actually increased (Table 4-2). Analysis of seven medium-size firms reveals that all but the largest made more acquisitions during 1961-75 than during 1950-60, and that these acquisitions contributed substantially to their post-1960 growth. One of these, Farmbest, Inc., was a direct progeny of FTC policy, as it was created when Foremost Dairy was compelled to divest itself of its Southeast Dairy Division. After making several acquisitions of its own, Farmbest, Inc. had sales of $104 million in 1974.

Southland Dairy was the most active acquiring medium-size dairy, acquiring at least 29 dairy processors, which were primarily responsible for the growth in its dairy sales of $28 million in 1960 to $174 million in 1974. Other medium-size dairies making multiple acquisitions in the 1960's were Fairmont, Dean, Knudsen, and Hawthorne-Mellody. As a group, the fluid milk and related product sales of the seven medium-size dairy processors studied grew by 183 percent between 1960 and 1974, or more than five times as rapidly as total industry sales.

The FTC policy apparently restrained somewhat the merger growth of some regional firms. This occurred partly because the two largest firms studied—Hood and Fairmont—already were so large as to fall near the lower size boundary of the FTC merger guidelines enunciated in *Beatrice* in 1965. In the case of another firm, Dean, the FTC enforcement policy appears to have been excessively restrictive, prohibiting at least one acquisition that would have been permitted by the *Beatrice* guidelines.

By 1974, the medium-size dairies studied had substantially larger nondairy than dairy product sales. This reflected in part the diversification of several dairies outside of dairy products and, even more importantly, the acquisition of two medium-size dairies by conglomerate enterprises. However, only one of the leading medium-size dairies was acquired by another dairy after 1961, Bowman Dairy by Dean. As a result of an FTC challenge of this acquisition, part of Bowman's properties subsequently were sold to smaller dairy processors.

Additionally, a number of firms joined the ranks of medium-size dairy processors after 1960. By 1974, there were about 65 firms with annual fluid milk sales between $20 million and $100 million. In conclusion, it appears that to date the FTC policy objective of encouraging an environment conducive to the survival and growth of medium-size dairy processors has been at least partially successful. The result is a less centralized fluid milk distribution system than may otherwise have been the case.

IMPACT ON INDEPENDENTS

The *relative* rate of merger activity among independent dairies (defined as firms with annual sales below about $25 million) increased since 1956, the year the FTC first challenged acquisitions of the largest firms. Analysis of the growth of mergers of a sample of independent firms showed that 137 firms reporting this information made 183 acquisitions with combined sales of about $100 million. For many firms, acquisitions appeared to account for most of their growth between 1960 and 1970. A resurvey of these firms in July 1975 revealed that they continued to rely quite heavily on acquisitions in their growth. Although firms making most extensive use of mergers were no more profitable than others, this experience is believed to reflect the fact that acquiring firms did not have sufficient time to adjust to their merger-induced larger size. In the short-run merging firms must operate in pretty much the same manner as previously separate entities, and frequently incur some added short-run costs associated with the merger. With time, however, the merged firms should be able to adjust to their larger size as they build new capacity and make other adjustments.

Some factors continue to create an environment hostile to the growth and survival of many independent fluid milk companies. Many independents are still operating small, high-cost plants. Most of these firms will either have to grow or sell out. Many independents still rely heavily on home delivery sales for a large part of their business. Firms relying heavily on such sales tend to be less profitable and to grow less rapidly than others. Because home delivery sales are still declining, independents relying heavily on such sales will be under increasing pressure to grow or sell out.

Independents in some areas have promoted state milk control laws fixing the prices at which they sell. Multiple regression analysis of our sample firms does not support the hypothesis that independent firms in such states grow more rapidly than in others. There is evidence that independents in such states tend to be somewhat more profitable than their counterparts in other states, although the difference in profitability is not statistically significant. Thus such laws apparently provide no long-term solution to problems faced by small firms.

On balance it appears that many independent dairy processors in our sample benefited from the FTC merger policy insofar as they made more acquisitions because they did not have to compete with the largest firms in doing so. However, some firms selling out to these independents may have received less for their assets than they would have had they been permitted to sell out to the largest firms. Additionally, more sample firms probably would have sold out to the largest firms had they been permitted to do so. Although the great majority (95 percent) of the sample firms expressed a desire to continue to operate their business for the next five years, about half also expressed an interest in selling their business if they could find a suitable buyer: about 53 percent of those with sales under $1 million and 29

percent of that with sales exceeding $1 million. By July 1975, one-fifth of the firms operating in mid-1971 had sold out or liquidated.

The responding independents were nearly unanimous (94 percent) in the view that they believed independent dairies should be permitted to sell their business to whomever they wished. Clearly, most independents do not endorse an FTC policy that places restraint on their individual rights to sell out to whomever they wish. Most of the 6 percent responding that some restraints on mergers were desirable commented to the effect that this was necessary to the survival of a competitive industry or helped independents who wished to stay in business.

ADMINISTRATION OF FTC POLICY

The FTC enforced strictly the merger guidelines initially set forth in its *Beatrice* decision in 1965. Although it had discretion in approving mergers under its consent agreements with five firms, it granted approval only in cases where the acquired firm was small, and usually in a weakened financial condition. The largest fluid milk acquisition approved by the FTC had sales of $12 million. As a general policy, the Commission required that the company to be acquired document that it had sought out other potential acquirers. In one instance the FTC refused to approve an acquisition that did not violate the guidelines set forth in *Beatrice.* In 1970 Dean Foods requested permission to acquire MacArthur Dairy of Miami, Florida, which was located over 500 miles from Dean's existing operations. Whereas, this type merger by a medium-size firm would have been permitted by the *Beatrice* guidelines, the FTC rejected Dean's request. The Commission could prevent the merger without taking legal action because Dean had entered into a consent agreement in 1967 which requires FTC approval of Dean's fluid milk acquisitions for a period of 10 years. But since this decree was not intended as an absolute prohibition of all mergers by Dean, the Commission was free to apply the standards spelled out in *Beatrice.* Its failure to do so apparently discouraged some similar acquisitions by other medium-sized firms. Hence, the Commission acted contrary to previously announced merger guidelines by preventing mergers that it had earlier found not to injure competition. The Commission's administrative decision in the proposed Dean-MacArthur merger represented the arbitrary application of different standards to a firm under a consent decree than to other firms. As noted previously (Chapter Four), Southland Corporation made a number of substantial market extension acquisitions of fluid milk processors, none of which were challenged by the FTC. Because of these acquisitions, Southland became as large as Dean without having any of its acquisitions challenged, some of which were larger than MacArthur.

In February 1975 the Federal Trade Commission approved Dean's request to acquire the R. Bruce Fike & Sons Dairy, Uniontown, Pennsylvania. Bruce Fike had sales of $12 million and represented a market extension merger outside Dean's existing operating territory. The approval of this acquisition may represent some relaxation of the FTC's enforcement policy toward mergers of this type.

Apart from acting contrary to its own declared policy objectives in the Dean-MacArthur premerger request, the more important question is whether, on balance, the Commission's policy and its enforcement had a beneficial impact on competition. Additionally, irrespective of its past impact, what policy should the Commission pursue in the future?

The Commission's enforcement policy commencing in 1956 had a powerful deterrent effect on merger activity by the top companies. This policy appears to have been primarily, if not totally, responsible for reversing the trend toward centralization of fluid milk sales among these top four companies. The policy also appears to have played a major role in accelerating the growth and increasing the number of medium-sized dairies. It enabled some of these companies to grow by merger without competing with the top companies in bidding for acquisitions. Additionally, it resulted in more medium-size companies by discouraging mergers among them, as well as preventing top companies from acquiring them.

The independents surviving today also may have benefitted from the policy to the extent that their growth was accelerated by acquisitions which they may not have made had they been forced to compete with the largest companies in making acquisitions.

Thus, although technological and other factors continued to encourage firms to sell out, the FTC policy appears to have succeeded in channeling practically all mergers toward dairies other than the top companies. The net result appears to be a more decentralized and competitive industry than otherwise would have been the case.

Another apparent salutary effect of the policy was that it encouraged large firms to enter new markets by internal growth. Of 145 surveyed independent firms reporting this information, 27 (18 percent) stated that one or more of the top eight firms entered their market by internal growth during 1961-74. This is important because it demonstrates that when firms are prohibited from entering a market by merger they frequently enter by internal expansion. Such entry is important, of course, because it is a major source of increased competition. This is borne out in our multiple regression analysis which found a significant negative relationship between entry by new firms and the profitability of firms already in a market.

But while the FTC policy appeared to promote a more competitive market structure, it may have done so at the expense of some independent firms who were forced to sell their properties at lower values than if they could have sold out to large firms. It is difficult to measure such costs. In most situations where the FTC approved an acquisition by the five dairy firms under orders requiring premerger approval, the Commission required some evidence that there existed no other acceptable buyers. On the other hand, there were literally hundreds of instances since 1961 where dairies sold out to other firms than the top eight. This suggests a relatively large market existed for the disposition of assets. Although the number of fluid milk firms is declining each year, the number of firms capable of making sizable acquisitions has

increased since 1961. Nonetheless in some parts of the country there may be only a few firms capable or interested in making acquisitions. In these instances the FTC must weigh carefully the potential losses to the sellers versus the potential benefits to competition. In view of the growing size of many markets there would seem to be few instances where acquisitions of firms with fluid milk sales of $1 million or less would materially affect market concentration. Thus the Commission might well take a "tolerant" view toward *isolated* acquisitions of such firms by even the largest firms, when other potential buyers are not available, even though the acquisition involves a direct competitor. Such an approach would not injure competition unless the Commission permitted a large acquirer to make multiple small acquisitions in a single market.

Perhaps the most critical determinant of future competition in the industry is the continued growth of viable independent firms and further geographic expansion of medium-size firms. There would seem to be little need to impose any restraints on mergers among small firms, say those with sales of $10 million or less, except in horizontal acquisitions in quite small markets.

On July 3, 1973, the FTC issued an enforcement policy statement enunciating what amounted to a slightly relaxed set of dairy merger guidelines.[112] The Commission announced that in the future it will focus particular attention on fluid milk acquisitions by dairy companies processing more than 1 billion pounds of Class I milk annually. At current prices this would involve a company with fluid milk product sales of about $125 million, and would affect about 10 companies. The Commission announced it would investigate all acquisitions by such companies where the acquired entity is believed to fall in the following categories:

(a) All fluid milk companies or distribution routes within a 150-mile radius of the acquiring company.

(b) Any fluid milk processing operation located within 150 to 500 miles where the acquired company processed more than 26 million pounds of Class I milk annually (annual sales of about $2.5 million).

(c) Any dairy plant located beyond a 500-mile radius where the acquired unit processed 26 million pounds annually. The probable competitive effects of such mergers are to be determined by considering a number of factors presumed to bear on the nature of competition.

(d) Any company that processes 300 million pounds of Class I milk annually.

[112] Federal Trade Commission, *Enforcement Policy with Respect to Mergers in the Dairy Industry*, Federal Register, Vol. 38, No. 127, July 3, 1973. See Appendix A.

These guidelines serve the useful purpose of notifying prospective acquirers which mergers are likely to attract FTC investigation, and therefore possible violation. As a general rule the nearly 1,000 fluid milk firms with sales under $2.5 million only fall into category (a), i.e., if they are acquired by companies with fluid milk product sales exceeding $125 million and are located within 150 miles of such firms' existing operations.

The approximately 500 companies with sales between $2.5 million and $30 million generally will fall in categories (a), (b) and (c), i.e,, when acquired by companies with sales exceeding $125 million. Presumably, they are least likely to be challenged when they fall in category (c) and most likely to be challenged when they fall in category (a).

The nearly 75 companies with sales exceeding $30 million fall in category (d), i.e., whenever they are acquired by one of the largest companies.

There are two exceptions to the above rules: (1) where "major regional companies" acquire fluid milk firms "ranking in the top four in adjacent markets," and (2) all horizontal mergers, i.e., mergers between direct competitors, will be governed by the Justice Department guidelines. These guidelines likely would seldom apply to mergers among small dairies. (Appendix B).

Our analysis of recent and prospective trends in the dairy industry indicates that there continues to be a need for careful monitoring of merger activity in the industry to prevent the elimination of viable actual or potential competitors. The Commission's guidelines seem to properly identify the sorts of mergers to be investigated to achieve this end. But as the Commission itself states, it has set forth these guidelines solely to direct its staff in identifying mergers to be investigated because they "raise significant questions of law or policy." However, there is the danger that the Commission may apply these guidelines as rules of law rather than merely as aids in identifying mergers to be investigated. Should this occur, the guidelines will have the effect of preventing all acquisitions of the type identified. Such a result would be unfortunate. Not only would it impose an unnecessary financial cost on companies wishing to sell out, but it would not enhance competition.

The Commission should be especially flexible in its approach toward acquisitions in situations where food chains create excess capacity in a market because of their integration into fluid milk processing. Such integration may cause disruptions in the market requiring the exit of large amounts of excess capacity. The Commission must accept that structural change is inevitable in these circumstances. In such situations competition may be enhanced if financially weakened companies merge with other firms. Although it would be preferable if the acquiring firm were not a direct competitor, there often are no such buyers available. Then the public interest may be best served if the Commission permits a horizontal merger. The difficulties inherent in applying rigid guidelines in such situations were demonstrated in the Dean-Bowman merger (See Chapter Two). Although the Commission won a legal victory in that case, it did not achieve any meaningful economic relief in the Chicago market. With the benefit of hindsight, the public interest probably would have been better served had the Commission not challenged the merger in the first place, or had simply required Dean to dispose of some Bowman properties outside the Chicago area, as it subsequently required in a consent decree. Successful future public policy in the dairy industry will require that the Commission adopt a flexible enforcement policy, one responsive to changing conditions in the industry.[113]

GENERAL IMPLICATIONS FOR SECTION 7 ENFORCEMENT

Perhaps some lessons relevant to general merger policy have been taught by the unfolding of public policy in this industry. It's clear that public policy can have an enormous impact, for good or ill, on the pattern of merger activity in an industry. This is documented by the contrast in merger activity prior to and after the passage in 1950 of the Celler-Kefauver Amendment to Section 7 of the Clayton Act. Between 1919, when the FTC initiated actions that had the effect of giving Borden and other larger dairies a green light to unlimited merger activity[114] and 1956 when the FTC first

[113] Based on a study which simulated future structural changes in plant numbers and sizes in the state of Ohio, Kilmer recommends a public policy that: (1) "Plants over 100,000 quarts will be limited to their current capacity and restricted to a 10 percent market share. No merger will be allowed." (2) "Plants under 100,000 quarts will be encouraged to merge with other plants to encourage exploitation of scale economies. A merger that results in a multi-plant firm will not be allowed. All plants have a 10 percent market share restriction. These plants will be restricted to a maximum of 100,000 quarts per day." R.L. Kilmer, "The Effects of Government Policy Instruments on Market Structure and Performance of the Ohio Fluid Milk Processing Industry," Ph.D. dissertation, Ohio State University, 1975 pp. 141-42.
These rules make no distinction between growth achieved by merger or internal expansion. As discussed above, growth by internal means is likely to have a more salutary effect on competition than growth by merger. This is why public policies draw a distinction between the two types of growth. Since Kilmer's rules focus almost exclusively on market shares and absolute size, they ignore the way in which merger policy may be used to encourage potential competition by permitting acquisitions outside the acquiring firm's existing market area. All such mergers would be prohibited by the rule prohibiting all mergers resulting in multiplant firms, irrespective of their impact on actual or potential competition. This rule cannot be justified on either competitive or efficiency grounds. Finally, the *per se* nature of all the proposed rules could not be applied under existing antitrust policy, and would require new legislation, a fact that the author apparently is unaware of. In sum, based on our analysis of the industry, we do not believe such restrictive rules would be in the public interest. They would be particularly harsh on small and medium-size firms, and would prevent the salutary effects of geographic market extension mergers that may promote potential competition and actual entry into markets that are highly concentrated.

[114] Chapter 2, p. 7. Although these actions may have unleashed the top dairie in their great merger spree of the 1920's, subsequent Supreme Court decisions prevented the FTC from stopping such mergers in any event. Chapter 2, p. 7.

challenged the top four dairies' acquisition under amended Section 7, the structure of the industry was drastically transformed via mergers. The result was that the leading dairy firms achieved their large absolute and relative size through their literally thousands of acquisitions, which included many viable firms. Although it may have been inevitable that most of the firms acquired between 1919 and 1956 be liquidated or acquired, it was not inevitable that they be acquired, especially the viable medium-size firms, by the top firms in the industry. Consequently, by the time the FTC intervened in 1956, mergers already had left an indelible imprint on the structure of the industry.[115] Especially important, acquisitions of medium-size and smaller viable competitors greatly reduced the number of potential alternative buyers of independent dairies seeking to sell out. As a result, some independents selling out after 1956 doubtless were forced to accept lower values for their properties than if there had remained more potential buyers.

Another factor impeding the effectiveness of public policy in this area is the growing vertical integration into dairy processing by food retailers. Such integration has the effect of reducing the number of viable fluid milk firms that can survive in certain markets, thereby increasing the number of firms wishing to sell out.

The above problems, which greatly complicate the implementation of effective merger policy in the dairy industry, almost certainly are not typical of all American industries. Clearly, there are few other industries where technological forces have dictated the demise of so much manufacturing capacity—the number of fluid milk firms declined by 80 percent between 1950 and 1974. In view of these admittedly vexing problems, even if we conclude that merger policy was only modestly successful in the dairy industry, this speaks well for the potential application of merger policy in other industries. For in the final analysis, even in this admittedly troubled industry, public policy appears to have succeeded in channeling the direction of merger activity in such fashion as to insure a more competetively structured industry than would otherwise have emerged. Nor has this been accomplished at any obvious sacrifice in economic efficiency. Inefficient capacity appears to have left the industry at about the same rate after the initiation of the FTC merger policy as before. Moreover, there has been a rapid and continuing rise in average labor productivity in the industry over the past 15 years. The merger policy has permitted substantial industrial adjustment to the changing technological forces and a rapid transition to more efficient production methods. This case study shows Section 7 has not prevented or greatly inhibited industrial reorganization required by changing technology and market conditions.

[115] Perhaps the greatest flaw in FTC enforcement policy was its tardiness after 1950 in applying amended Section 7 to the dairy industry. The apparent failure to challenge mergers of the top dairies before 1956 was the belief prevalent among most FTC officials that mergers eliminating potential competition could not be challenged under Section 7. This sentiment was still prevalent in the early 1960's when the dairy cases were being tried. In trying the cases the staff placed primary emphasis on horizontal mergers, which represented only a small minority of those challenged. This shortcoming in enforcement policy was not unique to the dairy industry, since neither the FTC nor the Justice Department had a well-defined position on mergers eliminating potential competition until the 1960's. Indeed, the FTC's *Beatrice* decision (Chapter 2) was the first and, perhaps, most comprehensive statement of the legal application of Section 7 to such mergers. But even today the boundaries of Section 7 toward such mergers are unclear.

CHAPTER SEVEN-APPENDICES

APPENDIX A. FEDERAL TRADE COMMISSION

ENFORCEMENT POLICY WITH RESPECT TO MERGERS IN DAIRY INDUSTRY CRITERIA FOR ASSESSING FUTURE MERGERS[116]

The merger activity of the four largest national dairies, which during the 1950's was creating high local concentration and consolidating it into high regional and national concentration through leading firm market extension mergers, was stopped during the last decade by FTC orders. The firms acquired in this movement were often middle-tier dairies whose size permitted them to expand internally most easily into new markets and to offer the greatest potential competition to the largest national dairies.

Following the expiration of these orders, beginning in 1972, the threat of renewed merged activity ruinous to competition in the dairy industry is again a possibility. Indeed, several large dairies not under Commission orders, and ranking just below the top four companies, have been using mergers to expand their market shares. Although the motivating force is a desire to increase sales, the reason large firms prefer making horizontal and market extension mergers rather than expanding internally is that the purchase of additional market shares through acquisition of established firms reduces the risk that competitive bidding for additional sales will cause price reductions and lower profits to all.

The same is true of geographic expansion into concentrated markets. Obtaining a significant position in such a market, other than by acquisition of a major established firm, is likely to intensify price competition due to price reactions of other processors unwilling to have their market shares eroded by a new entrant. A merger would not disturb the price structure and would be preferred by both the buyer and seller of the established market position. A resumption of leading firm market extension mergers would again threaten the preservation of a strong middle-tier of independent dairies. The preservation of this tier of viable independent companies is as essential to the competitive health of the dairy industry today as it was when the Commission cited it in its finding in Beatrice Foods Co., FTC Docket No. 6653.

Concentration has remained high in local and regional markets despite the deconcentrating effects of improvements in transportation equipment and the completion of interstate highways linking together previously separate local markets. These deconcentrating forces have been offset by the disappearance of hundreds of very small high-cost processors, other processors serving the rapidly declining retail home delivery channel of distribution, and by the continuation of high barriers to new plant entry caused by the difficulty in obtaining distribution outlets, moderate scale requirements, and no growth in industry demand.

[116] *Federal Register*.Vol. 38, No. 127, July 3, 1973. Home delivery sales and processing not done in the United States should not be included when computing sales volumes and market shares herein.

The only new plant entry has been by food chains vertically integrating into processing. A food chain with sufficiently large local or regional sales can overcome entry barriers because of its assured market for the output of a plant. The continued growth of food chains and their success in achieving consumer acceptance for private label milk has caused vertical integration into processing to increase sharply since the early 1960's. Vertical integration is the source of considerable market foreclosure to non-integrated dairies in many local markets and it may be causing smaller and new entrant food chains in some markets to face a cost disadvantage. Although the threat of food chain integration appears to have had a significant price effect, particularly through the wholesale and retail pricing of private label milk, the actual integration of food chains into processing has not been associated with further intensifications of price competition.

In view of the above facts which indicate a need for continuing to guard against concentration-increasing mergers, the Commision should make abundantly clear, insofar as possible, its future enforcement policy in the dairy industry. In doing so, the Commission wants it to be known that new developments in the dairy industry may cause it to change the enforcement policy as the competitive effects of the new developments become apparent.

Major criteria for assessing future fluid milk product industry mergers. The Commission has adopted the following enforcement criteria for initiating investigations of acquisitions which raise significant questions of law or policy under section 7 of the Clayton Act, as amended by the Cellar-Kefauver Act. These criteria are in no way to be considered applicable to acquisitions by companies under outstanding Commission orders requiring prior approval of the Commission with respect to acquisitions.

1. The Commission will focus particular attention on fluid milk company mergers and acquisitions by large dairy companies processing more than one billion pounds of Class I milk annually (or when combined with an acquired company processes that amount). Investigations will be made when the acquired entity is believed to fall within any of the following categories:

(a) Any fluid milk processing plant, distribution facility, or route (except those serving retail home delivery exclusively) within a 150-mile radius of existing plants or distribution facilities of the acquiring company, unless prior approval of the Commission has been granted.

(b) Any fluid milk processing company or plant located within a radius of between 150 and 500 miles of existing plants or distribution facilities of the acquiring company, and which in any of the three years prior to acquisition processed more than 26 million pounds of Class I milk annually (approximately 40,000 quarts a day or $2.5 million annual sales), unless prior Commission approval has been granted.[117]

[117] Reference to prior approval in this statement should not be interpreted to mean that companies must request Commission approval prior to the consummation of any merger or acquisition. However, the Commission shall continue to provide advisory opinions, as provided by its Rules of Practice, regarding the legality of particular mergers, and invites those contemplating mergers to avail themselves of this program in any situation where there is uncertain as to the legality of a prospective merger.

(c) Any dairy plant located beyond a 500-mile radius of existing plants or distribution facilities of the acquiring company and which in any of the three years prior to acquisition processed more than 26 million pounds of Class I milk, upon determination of possible anti-competitive effects due to an evaluation of the following: (i) The size and market position (s) of the acquired company or plant; (ii) the distance the acquired company's marketing area is separate from the marketing area of the acquiring company; (iii) concentration and entry conditions into the acquired company's markets; and (iv) the overall size and the local and regional market positions held by the acquiring company.

(d) Any company that processes 300 million pounds of Class I milk annually.

2. Acquisitions involving companies with combined annual processing of less than 1 billion pounds of Class I milk generally pose less of a threat to competition except, insofar as they involve the acquisitions by major regional companies of dairy companies ranking in the top 4 in adjacent markets. Mergers which involve such leading firms may pose a threat and will be investigated as will other mergers which exceed the guidelines established by the Department of Justice.[118] The Justice Department's guidelines specify that horizontal mergers or acquisitions will likely be challenged where four-firm concentration is 75 percent or more in any market and the acquiring and acquired firms hold the following market shares:

Acquiring Firms:	*Acquired Firms*
4%	4% or more
10%	2% or more
15%	1% or more

If the four-firm concentration is less than 75 percent, the guidelines indicate challenging mergers with these market shares:

Acquiring Firm:	*Acquired Firm*
5%	5% or more
10%	4% or more
15%	3% or more
20%	2% or more
25%	1% or more

3. For acquisitions involving dairy products other than fluid milk, the Federal Trade Commission Enforcement Policy with Respect to Product Extension Mergers in Grocery Products Manufacturing, announced on May 15, 1968, will apply unless a company is bound by an FTC order that implies a stronger prohibition.

[118] U.S. Department of Justice, Merger *Guidelines*, May 30, 1968 (Mimeo).

The above enforcement criteria are not to be construed as an expression of the views of the Commission or any individual Commissioner on the legality of any particular merger or acquisition. Rather, the Commission has chosen quantifiable standards to describe concisely those mergers and acquisitions in the dairy industry which merit special attention.

Pre-merger notification. In order to carry out the above enforcement policy in a fair and expeditious manner, the Commission will require that any company processing more than 300 million pounds of Class I milk annually, or when combined with an acquired company processes that amount, notify and provide special reports to the Commission at least 60 days prior[119] to making any acquisition having the following characteristics:

1. A fluid milk processing plant, distribution facility, or route (except those serving retail home delivery exclusively) located within a 500-mile radius of an existing plant or distribution facility of such company.

2. A dairy company which in any of the three years prior to acquisition made annual fluid milk sales in excess of $2.5 million or a processing plant which processed 26 million pounds or more of Class I milk.

(38 Stat. 721; 15 U.S.C. 46)

By direction of the Commission, dated June 19, 1973.

[SEAL]

Charles A. Tobin
Secretary.

[119] If the time schedule of the acquisition or merger does not permit notification 60 days prior to consummation, the notification and special report should be submitted as promptly as possible.

APPENDIX B. DEPARTMENT OF JUSTICE MERGER GUIDELINES APPLIED TO HORIZONTAL MERGERS[120]

I. HORIZONTAL MERGERS

Enforcement Policy. With respect to mergers between direct competitors (i.e., horizontal mergers), the Department's enforcement activity under Section 7 of the Clayton Act has the following interrelated purposes: (i) preventing elimination as an independent business entity of any company likely to have been a substantial competitive influence in a market; (ii) preventing any company or small group of companies from obtaining a position of dominance in a market; (iii) preventing significant increases in concentration in a market; and (iv) preserving significant possibilities for eventual deconcentration in a concentrated market.

In enforcing Section 7 against horizontal mergers, the Department accords primary significance to the size of the market share held by both the acquiring and the acquired firms. ("Acquiring firm" and "acquired firm" are used herein, in the case of horizontal mergers, simply as convenient designations of the firm with the larger market share and the firm with the smaller share, respectively, and do not refer to the legal form of the merger transaction.) The larger the market share held by the acquired firm, the more likely it is that the firm has been a substantial competitive influence in the market or that concentration in the market will be significantly increased. The larger the market share held by the acquiring firm, the more likely it is that an acquisition will move it toward, or further entrench it in, a position of dominance or of shared market power. Accordingly, the standards most often applied by the Department in determining whether to challenge horizontal mergers can be stated in terms of the sizes of the merging firms' market shares.

Market Highly Concentrated. In a market in which the shares of the four largest firms amount to approximately 75% or more, the Department will ordinarily challenge mergers between firms accounting for, approximately, the following percentages of the market:

Acquiring Firm	*Acquired Firm*
4%	4% or more
10%	2% or more
15% or more	1% or more

(Percentages not shown in the above table should be interpolated proportionately to the percentages that are shown.)

Market Less Highly Concentrated. In a market in which the shares of the four largest firms amount to less than approximately 75%, the Department will ordinarily challenge mergers between firms accounting for, approximately, the following percentages of the market:

[120] Deparment of Justice, *Merger Guidelines,* May 30, 1968, pp. 7-12.

Acquiring Firm	*Acquired Firm*
5%	5% or more
10%	4% or more
15%	3% or more
20%	2% or more
25% or more	1% or more

(Percentages not shown in the above table should be interpolated proportionately to the percentages that are shown.)

Market With Trend Toward Concentration. The Department applies an additional, stricter standard in determining whether to challenge mergers occurring in any market, not wholly unconcentrated, in which there is a significant trend toward increased concentration. Such a trend is considered to be present when the aggregate market share of any grouping of the largest firms in the market from the two largest to the eight largest has increased by approximately 7% or more of the market over a period of time extending from any base year 5-10 years prior to the merger (excluding any year in which some abnormal fluctuation in market shares occurred) up to the time of the merger. The Department will ordinarily challenge any acquisition, by any firm in a grouping of such largest firms showing the requisite increase in market share, of any firm whose market share amounts to approximately 2% or more.

Non-Market Share Standards. Although in enforcing Section 7 against horizontal mergers the Department attaches primary importance to the market shares of the merging firms, achievement of the purposes of Section 7 occasionally requires the Department to challenge mergers which would not be challenged under the market share standards of Paragraphs 5, 6, and 7. The following are the two most common instances of this kind in which a challenge by the Department can ordinarily be anticipated:

(a) acquisition of a competitor which is a particularly "disturbing," "disruptive," or otherwise unusually competitive factor in the market; and

(b) a merger involving a substantial firm and a firm which, despite an insubstantial market share, possesses an unusual competitive potential or has an asset that confers an unusual competitive advantage (for example, the acquisition by a leading firm of a newcomer having a patent on a significantly improved product or production process) . There may also be certain horizontal mergers between makers of distinct products regarded as in the same line of commerce for reasons expressed in Paragraph 3 (i) where some modification in the minimum market shares subject to challenge may be appropriate to reflect the imperfect substitutability of the two products.

Failing Company. A merger which the Department would otherwise challenge will ordinarily not be challenged if (i) the resources of one of the merging firms are so depleted and its prospects for rehabilitation so remote that the firm faces the clear probability of a business failure, and (ii) good faith efforts by the failing firm have failed to elicit a reasonable offer of acquisition more consistent with the purposes of Section 7 by a firm which intends to keep the failing firm in the market. The Department regards as failing only those firms with no reasonable prospect of remaining viable; it does not regard a firm as failing merely because the firm has been unprofitable for a period of time, has lost market position or failed to maintain its competitive position in some other respect, has poor management, or has not fully explored the possibility of overcoming its difficulties through self-help.

In determining the applicability of the above standard to the acquisition of a failing division of a multi-market company, such factors as the difficulty in assessing the viability of a portion of a company, the possibility of arbitrary accounting practices, and the likelihood that an otherwise healthy company can rehabilitate one of its parts, will lead the Department to apply this standard only in the clearest of circumstances.

Economies. Unless there are exceptional circumstances, the Department will not accept as a justification for an acquisition normally subject to challenge under its horizontal merger standards the claim that the merger will produce economies (i.e., improvements in efficiency) because, among other reasons, (i) the Department's adherence to the standards will usually result in no challenge being made to mergers of the kind most likely to involve companies operating significantly below the size necessary to achieve significant economies of scale; (ii) where substantial economies are potentially available to a firm, they can normally be realized through internal expansion; and (iii) there usually are severe difficulties in accurately establishing the existence and magnitute of economies claimed for a merger.

APPENDIX C. RANK OF EIGHT LARGEST FLUID MILK AND RELATED PROCESSED PRODUCTS FOR 1958, 1963 AND 1967 AND THE 20 LARGEST IN 1967 (millions)

Company	1967 Value of Shipments	1967 Percent of Total	1963 Value of Shipments	1963 Percent of Total	1958 Value of Shipments	1958 Percent of Total
Borden	$ 402a	9.02%a	$ 372	8.67%	$ 373	9.07%
Kraftco	390	8.76	357	8.34	365	8.89
Beatrice	194	4.35	176	4.14	132	3.21
Foremost	138	3.10	135	3.17	177	4.30
Top 4	$1,124	25.23%	$1,042	24.32%	$1,047	25.47%
Hood & Sons	110	2.47	92	2.15	88	2.15
Carnation	105	2.36	91	2.12	82	2.00
Southland	97	2.17				
Hawthorne	93	2.08				
5th to 8th	405	9.08				
Dairylea Coop	88	2.08				
Fairmont	85	1.92	78	1.82		
Safeway	76	1.71	59	1.37	40	.97
Dean	60	1.36b	320	7.46		
Pet	59	1.32				
Farmbest Co.	55	1.24				
Arden-Mayfair	45	1.01			58	1.41
Knudsen	39	.88			—	—
Challenge (Coop)	35	.78			268	6.53
Lehigh (Coop)	35	.78				
Certified Grocers	25	.57				
Kroger	21	.48				
9th to 20th	623	14.13				
5th to 8th	58	1.41				
	268	6.53				
Total Top 20	$2,153	48.32%				
U.S. Total	$4,455	100.00%				

a Figures are rounded and do not necessarily add to totals.
b Excluding operations divested by order of the Federal Trade Commission.

Source: FTC *Dairy Report, op. cit.*, pp. 59-60.

APPENDIX D. VERTICALLY INTEGRATED FOOD CHAINS, YEAR OF INTEGRATION AND POUNDS OF CLASS I MILK PROCESSED IN 1970-71

Year Integrated	Company	Pounds of Class I Milk Processed (year) Million Pounds	
Large National Chains			
1929	Arden-Mayfair a	567	(1970)
1930	Safeway Stores, Inc. a	1,141	(1970)
1932	Ralph's a	95	(1971)
1934	The Kroger Company a	775	(1970)
	Daitch Shopwell	25 (est) c	
1936	Southland Corp. a	1,166	(1970)
1952	Jerseymaid Partnerships	268	
	Alexander's Markets		
	Thriftmart a		
	Market Basket		
	Vons a		
1956	Fred Meyer, Inc.	20 (est) c	
	Certified Grocery of Ill. (Vol)	199	(1971)
1958	Consolidated Foods b	160	(1971)
1960	Cook United, Inc. a g	46	(1970)
	Winn-Dixie Stores, Inc. a	188	(1971)
	Stop & Shop, Inc. a	70	(1970)
1961	Scot Lad Foods, Inc. (Vol)	70 (est) c	
1962	Borman Food Stores a	92	(1971)
1964	Shopping Bag		
1965	Richmond Food Stores, Inc.	60 (est) c	
1966	Acme a	168	(1970)
	A & P a	265	(1971)
1968	Jewell Companies a	261	(1970)
1969	Giant Food a	96	(1970)
1969	Luck Stores, Inc. a	231	(1970)
1969	Allied Supermarkets a	108	(1971)
1971	Colonial Stores a	77 e	(1971)
1971	J.S. Dillion a	20 c	
Not Known	Associated Groceries of Alabama (Coop)	2 d	
Not Known	Spartan (Coop)	120 d	

Smaller Supermarket Chains	*Affiliated Dairy Company*	
Beaty Grocery Co. (Vol)	Hy-Klas Dairy	30 d
Economy Stores (Coop)		25 (est) c
Associated Food, Inc. (Coop)	Associated Dairy, Inc.	24 (est) c
Gibson Discount	Mid-West Creamery Co., Inc.	21
Star Markets	Heicklon Farms	15 d
Milgram Food Stores, Inc.	Meyer Dairy, Inc.	13 d
Harts Food Stores, Inc. g		5 d

Temple Stephens Co.	Stephens Produce Co.	3 c
Smaller Convenience Store Chains		
Cumberland Farms		332 f
United Dairy		94 f
Farm Stores		69 f
Wawa Dairy Farm		62
Isaly a		20
National Convenience Stores		13 d
Nite Owl Food Mart, Inc.		N.A.
Highs		N.A.
		7,016

a Ranked among 40 largest corporate chains of 1967.
b Was a member of 40 largest but by 1967 had become a voluntary chain.
c FTC staff estimates based on retail sales.
d Based on *1971 Dairy Industry Supply Association Directory.*
e Plant started, December 20, 1971. It is projected that the plant will process 1.5 million pounds of Class I milk per week by the middle of 1972.
f Based on estimates by other industry members.
g No longer in fluid milk processing in 1975.

Source: Economic Report on the Dairy Industry, *op. cit.*, p. 102.

APPENDIX E. REGRESSION COEFFICIENTS FOR 1970 PROFIT PERFORMANCE OF 67 INDEPENDENT DAIRIES a

P	Constant	S Plant Size	U Capacity Utilization	R % Retail Sales	G % Gov. Sales	M Market Size (000's) of Dollars	Z Merger as % of Growth	D Dairy Entry	C Processing Chain Entry	I Entry Chain & Dealer	W State Milk Control	R^2
Profits as %	10.56	-0.00	2.07	-0.09	0.44	-0.00	-0.03	-19.6	-7.88	-11.83	3.80	0.38
Networth	(1.28)	(-0.44)	(1.76) b	(-1.25)	(3.22) c	(-0.47)	(-0.30)	(-2.70) c	(-1.17)	(-1.79) b	(1.19)	[3.47] d
N = 67												

a Three-firms were dropped from the regression because their net worth was so small as to make P (profits as % of net worth) extremely large. Sixty-seven were lost because there was incomplete data for one or more variables.
b Indicates the coefficient is significantly different from zero at the 5-percent level using a one-tail test.
c Indicates the coefficient is significantly different from zero at the 1-percent level using a one-tail test.
d F-test indicates that the R^2 is significant at the 1-percent level.

APPENDIX F. PERCENT OF PACKAGED MILK SALES SOLD THROUGH VARIOUS ACCOUNTS IN 1974, FIRMS CLASSIFIED BY 1970 SALES VOLUME

1970 Sales (Thousands of Dollars)	Number of Firms a	Average Sales (000)	Retail Food Chains	Affiliated Independent Food Retailers and Wholesale Buyers	Individual Retail Stores	Sales to Government Installations, Schools, etc.	Home Retail Sales	Sales to Distributors	Sales to Own Milk Depots or Convenience Stores	Sales to All Other Outlets
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Under $500	0	—	—	—	—	—	—	—	—	—
$500-999	12	962	15.8%	0	18.3%	12.4%	35.2%	12.2%	2.5%	3.7%
$1,000-2,499	20	2,307	18.8	0.2	17.8	15.8	38.4	3.1	3.5	2.4
$2,500-4,999	19	5,492	17.3	3.5	21.4	19.1	22.7	6.8	2.2	7.0
$5,000-9,999	11	11,165	21.9	4.9	28.1	8.5	16.8	10.1	7.4	2.3
$10,000 or More	10	24,687	18.7	9.3	33.8	10.5	13.2	10.9	2.7	0.4
Totals	72	$ 7,385	18.4%	3.0	22.6%	14.3%	26.9%	7.7%	3.5%	3.5%

a These were the firms that provided account distribution data for 1960 and 1970. Packaged fluid milk represented over 80 percent of these firms total sales.

Note: Percents may not sum to 100 percent due to rounding error.

APPENDIX G. COMPARISON OF FIRM SIZE WITH THE SIZE OF THE MARKET AND SHIPMENTS OUT OF THE MARKET IN 1974

1970 Sales (000)	Number of Firms a	Market Size—Millions of Pounds of Fluid Milk b/								Average Percent of Firms Packaged Milk Sales Sold More than 50 Miles from Major Markets c
		Under 250 (3)		250-499 (4)		500-999 (5)		1,000 or More (6)		
(1)	(2)	No.	Percent	No.	Percent	No.	Percent	No.	Percent	(7)
Under $500	0	—	—	—	—	—	—	—	—	—
$500-999	12	4	33.0%	6	50.0%	2	17.0%	0	—	3%
$1,000-2,499	21	6	29.0	11	52.0	3	14.0	1	5.0%	9
$2,500-4,999	20	10	50.0	4	20.0	2	10.0	4	20.0	15
$5,000-9,999	11	3	27.0	2	18.0	2	18.0	4	37.0	17
$10,000 or More	11	1	9.1	1	9.1	5	45.5	4	36.4	22
Totals	75	24	32.0%	24	32.0%	14	19.0%	13	17.0%	13%

a Some firms were dropped because suitable market definitions could not be delineated.

b Market definitions and volumes were adapted from "Spatial and Temporal Aspects of the Demand for Food in the U.S. Fluid Milk," R. Raunikar, J.C. Purcell, and J.C. Elrod, University of Georgia, Agricultural Experiment Station Research Bulletin #61, June 1969.

c Based on 69 firms that provided the necessary information.

APPENDIX H. MERGER EXPERIENCE OF 84 INDEPENDENT DAIRIES DURING 1971-1974

Size of Acquiring Firm 1970 Sales (000)	Number of Firms	Number of Companies Acquiring Facilities or Routes	Percent of Firms Acquiring	Number of Acquisitions			Total Sales of Reported Acquisitions (000)	Average Number of Acquisitions	Average Sales of Reported Acquisitions (000)
				Total Number	Sales Information				
					Reported	Not Reported			
Under $500	2	0	0	0	0	0	0	0	0
$500-999	15	2	13.3%	3	3	0	$ 200	1.5	$ 67
$1,000-2,499	21	6	28.6	6	5	1	1,620	1.0	524
$2,500-4,999	23	6	26.1	6	6	0	7,555	1.0	1,259
$5,000-9,999	12	6	50.0	8	8	0	13,300	1.3	1,662
$10,000 or More	11	6	54.6	9	8	1	20,300	1.5	2,538
Totals	84	26	31.0%	32	30	2	$42,975	1.2	$1,432

APPENDIX I. SALES GROWTH BETWEEN 1970 AND 1974 FOR 26 ACQUIRING AND 56 NONACQUIRING INDEPENDENT DAIRY PROCESSORS

1960 Sales (000)	All Firms				Nonacquiring Firms				Acquiring Firms			
	Number of Firms	1970 Sales (000)	1974 Sales (000)	Percent Change	Number of Firms	1970 Sales (000)	1974 Sales (000)	Percent Change	Number of Firms	1970 Sales (000)	1974 Sales (000)	Percent Change
Under $1,000	17a	$ 12,566	$ 14,318	13.9%	15	$ 11,106	$ 12,118	9.1%	2	$ 1,460	$ 2,200	50.7%
$1,000-2,499	22	35,509	49,746	40.1	16	25,010	35,501	41.9	6	10,499	14,245	35.7
$2,500-4,999	20	70,636	110,871	57.0	14	49,578	70,897	43.0	6	21,058	39,974	89.8
$5,000-9,999	12	84,076	134,420	59.9	6	38,663	60,360	56.1	6	45,413	74,060	63.1
$10,000 or More	11	170,412	272,737	60.0	5	73,350	104,254	42.1	6	87,062	168,483	93.5
Totals	82	$363,199	$582,092	56.0%	56	$197,707	$283,130	43.2%	26	$165,492	$298,962	80.6%

a Includes one firm with 1970 sales of $302,000 and 1974 sales of $350,000; all other firms in this size class had sales exceeding $500,000 in 1970.

APPENDIX J. IMPORTANCE OF ACQUISITIONS IN THE GROWTH OF 26 ACQUIRING FIRMS, 1970-1974

1970 Sales Categories (000)	Number of Firms	Total Sales (000)			Acquisitions			Sales of Acquired Firms as Percent of:	
		1970	1974	Percent Change	Number	Average	Sales of Acquired Firm a (000)	1970 Sales	Sales Growth 1970 to 1974
Less than $500	0	—	—	—	—	—	—	—	—
$500-999	2	$ 1,460	$ 2,200	50.7%	3	1.3	$ 200	13.7%	27.0%
$1,000-2,499	6	10,499	12,421	32.3	5	1.0	1,620	15.4	84.3
$2,500-4,999	6	21,058	39,974	89.8	6	1.0	7,555	35.9	39.9
$5,000-9,999	6	45,413	74,060	63.1	8	1.3	13,300	29.3	46.4
$10,000 or More	6	87,062	168,483	73.6	8	1.3	20,300	23.3	24.9
Totals	26	$175,492	$297,138	70.4%	30	1.2	$42,975	24.5%	35.2%

a Sales based on 30 acquisitions for which data were given.

APPENDIX K. REGRESSION RESULTS OF THE IMPACT OF VARIOUS FACTORS ON THE RATE OF GROWTH IN THE SALES OF 39 INDEPENDENT DAIRIES BETWEEN 1960 AND 1974a

	M	S	H	F	C	D	
	Mergers as Percent of 1960 Sales	1970 Sales of Firm	Percent Home Delivery	Percent Fluid Sales	State Milk Control Dummy	Size of Market	R^2
G Percent Growth in Sales	1.34 (3.04)	-0.01 (-1.67) b	-1.76 (-1.72) b	1.25 (0.55)	-7.0 (-1.30)	0.00d (0.02)	.42 [3.26] c

a Complete data were available for 39 of the respondents.

b A one-tail test indicates the coefficient is statistically significant at the 5 percent level.

c Indicates that R^2 is statistically significant at the 1 percent level.

d Zero due to rounding.

Note: Numbers in parentheses are t-values. The value in a bracket is the F-ratio.

APPENDIX L. PERCENT OF PACKAGED MILK SALES SOLD THROUGH VARIOUS ACCOUNTS IN 1974 BY 25 FIRMS DISCONTINUING BUSINESS BETWEEN 1970 AND JULY 1975

1970 Sales (Thousands of Dollars)	Number of Firms a	Average Sales (000)	Retail Food Chains	Affiliated Independent Food Retailers and Wholesale Buyers	Individual Retail Stores	Sales to Government Installations, Schools, etc.	Home Retail Sales	Sales to Distributors	Sales to Own Milk Depots or Convenience Stores	Sales to All Other Outlets
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Under $500	4	$ 174	8%	2%	10%	24%	39%	1%	1%	15%
$500-999	7	679	7	1	24	10	48	3	3	4
$1,000-2,499	8	1,543	8	1	41	7	39	4	—	—
$2,500-4,999	3	3,985	8	—	35	8	36	10	2	2
$5,000-9,999	2	5,924	6	—	29	4	11	50	—	—
$10,000 or More	1	12,014	—	14	10	10	45	4	8	9
Totals	25	$ 2,144	6%	4%	28%	8%	34%	15%	2%	3%

a These were the discontinuing firms that had provided account distribution data for 1970.

Note: Percents may not sum to 100 percent due to rounding error.