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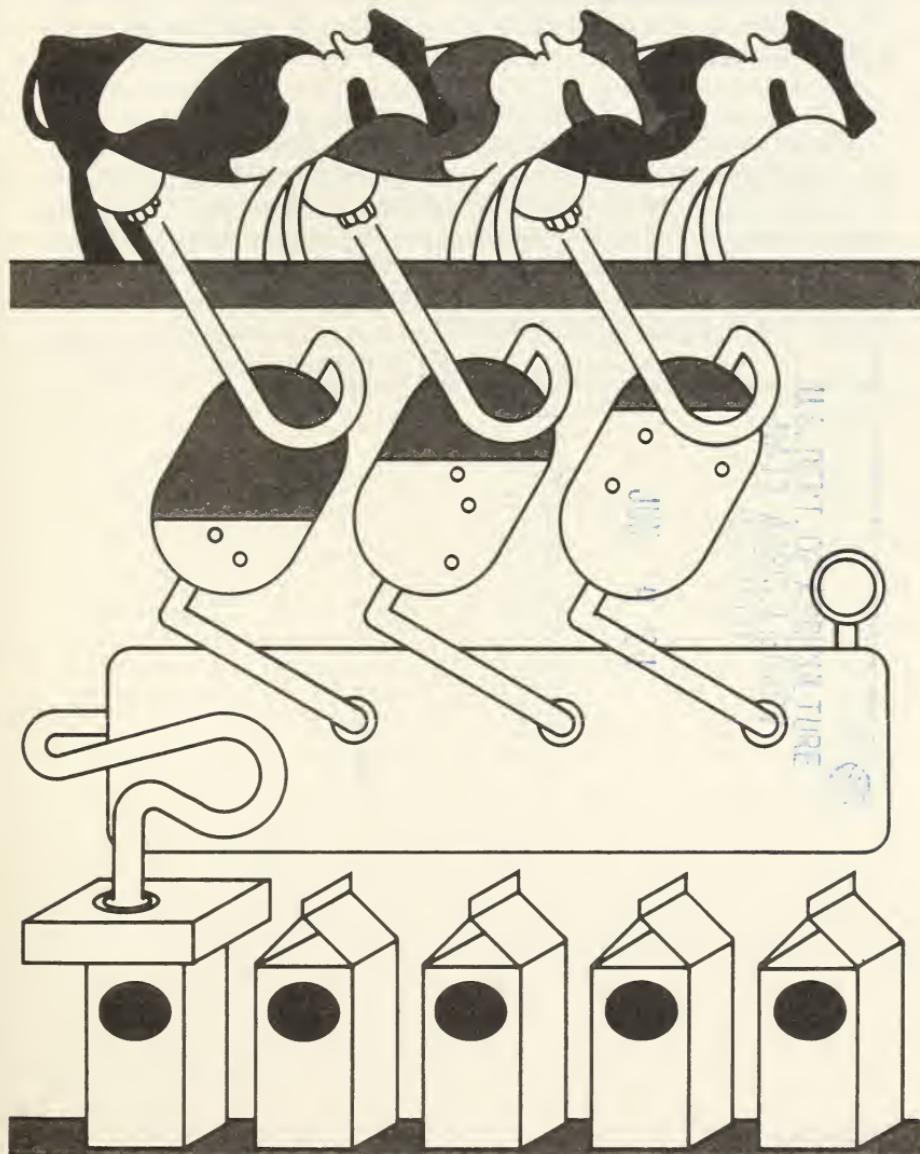
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Cooperative Fluid Milk Processing

A Perspective of Opportunities and Problems



Abstract

Cooperative Fluid Milk Processing: A Perspective of Opportunities and Problems

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Three successful and three less successful specialized fluid milk processing cooperatives were compared to determine if there were consistent differences in operating and financial policies and other selected factors. Successful cooperatives' management consistently made use of carefully planned capital investments and members allowed their cooperatives to build adequate member equity to finance feasible and profitable projects.

Key words: Dairy, cooperative, fluid milk processing

Preface

Dairy farmers marketing milk through cooperatives have chosen various routes to sell output. The majority have elected to sell most of their milk in raw form to other firms for processing and manufacturing into consumer products. Many farmers have organized cooperatives to manufacture milk into finished or semifinished form or process (package or "bottle") fluid milk for sale to stores or directly to consumers. Cooperatives have gradually but steadily assumed a larger share of the Nation's manufactured milk product business. Cooperative milk processing, however, has a more checkered history.

This report examines some of that history, provides perspective on how operating and marketing problems have affected cooperative fluid milk processing, and explores what opportunities might exist in this segment of the dairy industry. Experiences of six cooperatives specialized in processing offer some insight. Three have experienced continuing success in terms of growth and financial strength. The others were less successful. This report ponders the question: Do the common elements in the planning, direction, and experience of the successful cooperatives differ from the less successful?

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Highlights and Conclusions

The leaders of many dairy cooperatives are continuing to examine potential costs and benefits of entering or expanding in the fluid milk processing industry on behalf of cooperative members. For insight, the experiences of two groups of dairy processing cooperatives, three financially successful and three less successful, were analyzed to determine patterns of difference in policies. Geography, history, membership organization, operations, leadership, management, and financial practices were compared.

A consistent contrast of policies appeared in only two areas: hired management's approach to planning and the creation and use of member equity. Successful cooperative managers consistently approached each capital investment project with careful conservative planning and members permitted their cooperatives' leaders to develop and carry out good equity building programs to finance feasible and profitable projects.

Even with the limited sample of firms examined, some concluding guidance is possible for cooperatives looking at the market structure confronting fluid milk processing cooperatives.

- While vertically integrated fluid milk processing operations of chain stores or other central buying organizations are increasing their market share, an ample share remains for other firms. This pattern

likely will persist as many central buying firms choose not to process. The trend in table 1 of many nonintegrated firms leaving the industry will gradually remove overcapacity. Remaining well-operated firms should prosper.

- Vertically integrated chain stores or other central buyers have pointed the way to serving markets competitively. Careful and

perhaps conservative planning of capital investments, operation at near capacity, and major attention to distribution costs put the three successful cooperatives in competitive positions concurrent with adequate sales growth.

- No clear-cut conclusion can be made as whether milk producers can achieve more benefits from owning fluid processing businesses, given the burden of investing required equity capital. The three successful cooperatives have provided members with both needed market security and a high return on capital through milk prices, dividends, equity growth, or some combination. The less successful may have been burdens on members, at least during their period of low financial performance. As a general observation, it would appear that further cooperative entry into fluid processing may be justified if market security objectives need to be met, if fully adequate per member equity capital requirements can be achieved, and if performance projections are high.

- Factors are pinpointed that seem to have led to consistently better financial performance and business growth for some cooperatives. These were conservative yet adequate change in business direction in response to changing market structure systems, avoidance of excessive external debt, and above all, careful and thorough analysis of projects.
- The three successful cooperatives should serve reasonably well as models for cooperative entry or expansion into fluid processing, regardless of whether the cooperative is specialized or a large regional with fluid processing that is intended to provide only a portion of the firm's market outlet.

Cooperative Fluid Milk Processing: A Perspective of Opportunities and Problems

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AN INDUSTRY PERSPECTIVE

A strong structural change is continuing in the fluid milk processing segment of the dairy industry. A major cause is the concentration of firms that buy and retail much of the fluid packaged milk and soft products (cream, ice cream, yogurt, cottage cheese, and sour cream). These are the central buying organizations, primarily for the large supermarkets and convenience stores.

Many medium and large food chains and food wholesalers are successfully seeking to capture the processing and product distribution cost savings available through vertical integration. These savings become available when affiliated retail stores pre-order dairy products, store personnel stock dairy cases, and large orders are dropped at each delivery point. Further savings come from policies of no returns, no credit costs, and the chain's ability to build a plant closely tailored to a specific volume so the plant can operate near capacity.

Competing chains not choosing to vertically integrate into processing have been able to obtain price concessions from their dairy suppliers to match integrator's costs, but frequently have not permitted the supplier to achieve the same distribution economies. Further, nonintegrated suppliers are confronted with only a few but very large buyers, creating a competitive environment with very low unit processor margins. They may also have difficulty profitably serving low-volume accounts such as small stores and restaurants.

Coupled with the change in the structure of buyers, the 1960's and early 1970's brought a sharp change in processing, packaging, and materials handling technology. These changes, among others, included new high-capacity High Temperature Short Time (HTST) pasteurizers, welded clean-in-place milk piping, more automatic methods of homogenizing and butterfat control, high-capacity packaging machines, in-plant blowmolding

of plastic bottles, casers, stackers, and totally new concepts in cooler storage and loading. This new technology had the potential to drastically reduce labor and most other per-unit input costs, but adopting it required large-volume operations and substantial capital.

A drastic decline in fluid processing plant numbers occurred, dropping 72 percent from 4,103 in 1964 to 1,135 in 1979. Cooperative plants fell 59 percent from 267 to 110 (table 1). The extent of the cooperative decrease was lessened somewhat by the more recent entry of some regional dairy cooperatives into fluid processing. Note, however, the 71-percent increase in the number of dairy plants operated by integrated supermarkets, most of which are high-volume operations. These trends seem to be continuing into the 1980's.¹

Plants that closed and firms that quit were of all sizes. Conglomerate firms or those with large fluid processing plants caught in a competitive cost-price squeeze were forced to appraise return on investment. If corporate profit objectives could not be met, even efficient and competitive operations may have been closed. Many smaller plants or firms with small plants lacking sufficient sales volume to justify new technology, or that were undercapitalized for modernization, had to close. Those smaller and some medium-size operations attempting to adapt to more modern milk distribution systems, similar to the vertically integrated operations, often found sales concentrated in one or a few large accounts. They were vulnerable to price pressures or loss of these accounts.

COOPERATIVE PERSPECTIVE

The same changing structure of competition and technology affected cooperative fluid milk processing.

Many bottling cooperatives were established in the 1920's and 1930's, in small and medium-size cities. They were generally small and specialized in home delivery. Using more inexpensive equipment and much hand labor, fixed costs were a smaller proportion of total costs, somewhat easing the problem of raising capital from members. Producers generally organized these cooperatives believing dealer milk processing margins were excessive.

After World War II, competitive pressures forced many small processing

¹Lough, Harold W. Fluid Milk Processing Market Structure, ESS Staff Report No. AGESS810413, U.S. Dept. of Agr. Econ. and Stat. Serv. April 1981.

Table 1—Number of fluid milk processing companies and plants in December, selected years

Type of firm	1964	1970	1979	Change, 1964-79
- - - - Companies - - - -				
National firms	7	7	9	+29
Regional firms	8	7	4	-50
Local firms:				
Multi-unit	99	44	20	-80
Single unit	3,234	1,609	731	-77
Regional cooperatives	n/a	n/a	(⁴)	
Local cooperatives:				51
Multi-unit	35	23	13	
Single unit	152	83	31	-80
Integrated supermarkets	23	29	35	+ 52
Total	3,558	1,802	847	
Overall change				-76
- - - - Plants - - - -				
National firms	264	196	162	-39
Regional firms	71	57	17	-76
Local firms:				
Multi-unit	229	118	50	-78
Single unit	3,234	1,609	731	-77
Regional cooperatives	n/a	n/a	39	
Local cooperatives:				31
Multi-unit	115	102	40	
Single unit	152	83	31	-80
Integrated supermarkets	38	51	65	+ 71
Total	4,103	2,216	1,135	
Overall change				-72

n/a = Not available.

cooperatives out of business or to merge with larger cooperatives. A number of these cooperatives, however, survived and grew.

By the mid-1960's, two parallel structural changes began to affect processing cooperatives. One was the emergence of integrated chain store processing operations. Their low distribution and other costs increased

competitive pressures. The other change was the emergence and growth of large regional dairy cooperatives, both those that specialized in milk manufacturing operations and those marketing/bargaining cooperatives selling more than half their milk in raw form, sometimes known as "full service" regional bargaining cooperatives. In the process of formation and growth, they merged or consolidated with a number of specialized processing cooperatives including some of significant size. They also acquired noncooperative processing firms. Since 1973, the number of cooperatives specializing in fluid processing has fallen from 40 to 28, but the cooperative share of the market increased from 9 percent to an estimated 20 percent of all milk processed nationally.

Producers within their cooperatives are confronted with a changing structure of both cooperatives and noncooperatives. A number of questions about changing market structure face members of cooperatives:

- If integrated fluid processing plants of chain stores continue to capture a larger share of the market, what type of firm will be left to serve the nonchain market or chains not choosing to integrate? If these markets are not well served, how would this affect producer welfare?
- How can nonintegrated processing firms competitively operate to serve their markets profitably and efficiently?
- Are the total benefits to producers including the issue of protecting Class I sales high enough to justify producers buying plants serving the nonintegrated market? Are long-range benefits, in relation to required producer capital contributions, higher than leaving this capital on the producer's farm?
- Why have some fluid milk processing cooperatives been consistently successful in terms of financial strength while others have been less successful or forced to close processing plants?
- Can specialized regional or local cooperatives enter or expand into fluid processing by using the successful cooperatives as models for decisionmaking?

Sample Cooperatives

Six cooperatives examined in this study are not typical. Not many dairy cooperatives specialize in processing fluid milk. The three successful ones have performed considerably better than the average dairy cooperative, if

measured in terms of return on member equity, price paid for milk, cash patronage refunds paid, or some combination. Less successful dairy processing cooperatives have at times been financial burdens to members.

Individual cooperatives are examined at different times. The condition, operations, and policies of the successful cooperatives were reviewed for the past 2 or 3 years, while the less successful ones were examined during the last 8 years when earnings were down. One of the less successful cooperatives merged with a large regional bargaining cooperative and closed its processing operations. Another merged with a large regional cooperative and the third has been reorganized. Two of them are making good financial recoveries. In both cases, the management team responsible for the recovery was hired by the boards of directors during the year of lowest performance. However, the means employed by these boards and management teams to "rescue" the cooperatives are not directly a subject of this study.

A number of constraints were, necessarily, applied to this analysis so inferences from the experiences of these six cooperatives must be chosen carefully.

With one exception, the names of the cooperatives examined cannot be revealed, thus limiting the extent of detailed operating description to avoid disclosure. The one exception is Prairie Farms Dairy, Inc., Carlinville, Ill. Agricultural Cooperative Service has published a study, "Prairie Farms, Inc., Economic Impact of a Dairy Cooperative."² It provides a detailed description of the cooperative. Information from the report is incorporated in this study.

Another problem was collecting detailed data and determining policies of earlier leaders in the less successful cooperatives during an era of problems.

As with any business, circumstances occurring outside the firm, such as rapid growth of a community or successful growth of a cooperative's major customers, can lead to success, regardless of policies. As the Prairie Farms study illustrates, however, success often can be achieved only by properly adapting to changing circumstances.

²Cook, Hugh L., Robert P. Combs, and George C. Tucker. "Prairie Farms Dairy, Inc., Economic Impact of a Dairy Cooperative." Agricultural Cooperative Service Research Report No. 12, July 1982.

Three Successful Cooperatives (A, B, and C)

COOPERATIVE A (PRAIRIE FARMS) Prairie Farms Dairy, headquartered in Illinois, has 18 plants and 23 distribution points. It distributes products in seven States, but most business is concentrated in Illinois and metropolitan St. Louis. Most sales are to stores in small cities and rural areas in this heavily agriculturally oriented region of the Corn Belt. Population and economic growth have been stable.

The cooperative's operating area has become less dairy oriented in recent decades. Nearly half of its raw milk supply comes from other cooperatives in dairy States to the north. Almost 700 producer-members, principally in Illinois, supply the rest.

History Prairie Farms was organized in 1938 as one of 10 buttermaking creameries sponsored and partly financed by the Illinois Agricultural Association, (statewide Farm Bureau). Some of them, including Prairie Farms Creamery of Carlinville, acquired condensers and driers during World War II and converted to whole milk deliveries. In 1949, the cooperative purchased equipment to process and package fluid milk in paper cartons. In 1954, it began expanding fluid processing through 36 acquisitions, 9 cooperative mergers, and formation of 3 subsidiaries jointly owned with other cooperatives. The cooperative's growth strategy has included these elements:

- Acquire firms to enhance efficiencies of existing plants or expand the sales area.
- Limit buying costs, wait for firms to approach with an offer to sell out, rather than to seek out acquisitions.
- Offer to maintain employment for owners and top management of acquired or merged firms with the understanding that further personal growth in Prairie Farms would depend on performance.
- Stay out of the Chicago metropolitan area and concentrate on being the dominant seller in smaller cities and towns in the trade area, except for St. Louis.
- Avoid heavy new capital investment, such as an entire new plant. Most modernization consisted of converting old plants to specialized plants processing one or a small number of closely related items.

- Develop and maintain farmer membership only in the basic trade area, purchasing supplementary supplies from other cooperatives. This eliminates investment in hard product reserve manufacturing facilities. Because the cooperative is primarily engaged in fluid processing, residual milk supplies for manufacturing would be highly variable with high unit manufacturing costs.

More than half of the cooperative's raw milk supply is purchased from other cooperatives. Milk from these cooperatives is treated as patron milk. These cooperatives vote and participate in Prairie Farms' earnings. It is unusual for a nonfederated cooperative to rely to this extent on other cooperatives for its milk supply.

Prairie Farms is more specialized in its basic industry—fluid and related product processing—than most dairy cooperatives of this size. Only two operations depart from this strategy, yet even they tie into fluid and soft product marketing. One is PFD Supply, specializing in supplying a complete line of paper, meat, and other food items, including ice cream mix, to fast food outlets. This business accounted for almost 15 percent of the cooperative's dollar sales in 1978. The cooperative manufactures butter in a St. Louis plant, generating about 7 percent of sales. Ice cream, mix, and ice cream novelties reach 15 percent of sales but many consider this as a typical joint operation with fluid processing.

Plants and Operations The Prairie Farms study illustrates the extensive physical scope of the cooperative's operations:³

"Most of the 18 operating plants are also distribution points. Of the 23 distributing points without plants, 12 are in Illinois, 6 in Indiana, 3 in Missouri, 1 in Nebraska, and 1 in Tennessee. In general, all products handled by Prairie Farms are distributed from these distribution points. Major exceptions are the ice cream specialties plant in Lafayette, Ind., and the two novelty plants in St. Louis."

The processing plants are specialized, usually to one product or a small number of closely related products. Five plants process only packaged milk, three process only milk and ice cream mix or ice cream, and three make ice cream specialties, one makes butter, and a plant specializes in cottage cheese and related products. Only one plant makes several products. Advantages to specialization include economies of volume, making best use of facilities, and retaining the trained personnel of the acquired operation.

³Ibid., p. 21.

While the operating plants are specialized, they are positioned in Prairie Farms' trade area to readily supply all distribution points. The Prairie Farms report notes: "Possible savings in transportation cost from producing finished products at an increased number of locations with perhaps less specialization at each operating plant would likely be offset by a combination of (1) increased per-unit costs of each product resulting from the lower volume of production at each of the expanded number of plants, (2) an increase in the number of production specialists required to manage a large number of plant operations, and (3) a possible increase in capital expenditure requirements to set up smaller but more numerous production facilities."

Most of the cooperative's facilities are small to medium capacity and relatively old, although continuous updating of process and materials handling technology is being carried out. The cooperative tries to operate between policies of minimal capital investment and reasonable labor efficiency, simultaneously striving for product quality.

Distribution is carried out through 25 distributors with 5 percent of sales, 75 vendors with 15 percent of sales, and 500 company paid drivers accounting for 80 percent of sales. Prairie Farms has a staff of 65 for sales, route supervision, and distribution point management. About a fourth of sales are through distribution points.

The cooperative competes for all types of accounts, from single small town groceries to major chain accounts and institutions. Cooperative policy allows local managers to make pricing decisions within certain guidelines as a means of maintaining flexibility and providing opportunity for initiative. Products transferred from plants to sales points are assigned a cost on the basis of production cost at Carlinville or another large facility. If several plants specialize in one product, the lowest cost plant determines the "charge out" cost. The cooperative has not participated in "price wars" and maintains a well-publicized schedule of volume and/or delivery method discounts. Size and a broad array of customer accounts appear to have insulated Prairie Farms from the occasional loss of accounts due to price cutting.

Organization The cooperative has seven districts, each with about an equal number of members. The board consists of 24 directors, one of whom is appointed by the Illinois Agricultural Association. This includes four

executive committee officers. This is a large board considering its membership. The cooperative does not conduct an intensive member relations program. Formal member communications are concentrated in a series of district information meetings just prior to the annual meeting. The annual meeting is brief with voting carried on by proxy.

Full board meetings are held as often as monthly with more frequent executive committee meetings as needed. There are no board tenure limits or rotation.

The management style of Prairie Farms could best be described as "manager centered." The manager has held that position since the cooperative was organized in 1938. Major responsibility for all operations has been delegated to the manager. In turn, the manager has widely decentralized decisionmaking to local plant and sales management, more than in most similar cooperatives.

Top management compensation has been reasonably competitive with similar size noncooperative firms while middle or upper level salaries are very competitive, judging by the loyalty and long tenure of the cooperative's staff.

The extensive use of wholly owned subsidiaries deserves special mention. The cooperative has two wholly owned subsidiaries and participates with two large regional marketing/bargaining cooperatives in three jointly owned operations. PFD Supply, Inc., markets mostly nondairy products to fast food outlets. Ice Cream Specialties produces and markets frozen novelties. These firms have taxable earnings that, after taxes, are carried into the parent cooperative as unallocated retained earnings and used as permanent capital. The jointly owned subsidiaries are owned on a 50/50 investment basis, with earnings passed back to the parent cooperatives on this basis. In each, the other cooperative provides raw milk and Prairie Farms the management. Earnings from these subsidiaries become part of the parent cooperatives' earnings and are allocated to members.

Financial Policies A broad analysis of Prairie Farms financial policies suggests a strategy of maximizing sales while minimizing capital investment in fixed assets. Consequently, the cooperative has been aggressively competitive in a price competitive industry and yet has maximized net margins for members.

The cooperative's cash patronage refund record in cents per hundredweight marketed is a measure of its success:

Decade	Range
1940's	8 - 10 cents
1950's	15 - 25 cents
1960's	18 - 38 cents
1970's	20 - 55 cents

Leadership has been conservative in using borrowed capital. Net worth/total asset ratios have ranged from 0.75 (in 1963) to 0.46 in 1981, higher than most other processing cooperatives and the dairy industry in general.

Table 2 illustrates the cooperative's financial policies.

COOPERATIVE B This cooperative has achieved financial success somewhat comparable to Prairie Farms (Cooperative A), yet physical assets were employed quite differently.

The cooperative is headquartered in a fairly heavy milk producing four-county area, although the geographic region in general is not dairy oriented. Three-fourths of members' milk is reloaded and shipped more than 100 miles to the cooperative's large bottling plant in a large metropolitan area. Since World War II, this large metropolitan area has experienced considerable growth in population and income. The economy of the area is growing.

The dairy farm structural change has paralleled the change in the rest of the Nation. Manufacturing grade milk production has almost disappeared. Grade A production has consolidated into fewer but larger specialized farms.

History The cooperative was organized in the 1920's to provide an alternative local market for manufacturing milk. Up until World War II, most volume was made into cream and condensed milk, although a small fluid bottling operation was started. Membership, volume, and operations were expanded during and after World War II. A large number of members began converting to Grade A milk production. Markets for increasing shipments of raw fluid grade A milk were developed with noncooperative handlers in distant cities but these were not considered secure.

In 1959, one of these handlers, a long-time large raw milk customer, offered

to sell the family-owned business to the cooperative. While the firm's sales were expanding rapidly, processing was done in three old facilities. Because of the owners' ages, the family did not desire to embark on a modernization program. Over a year's period, the cooperative undertook a series of feasibility studies, performed by staff, an accounting firm, and Farmer Cooperative Service (now Agricultural Cooperative Service). With positive study results, the business was purchased and within 4 years all operations were consolidated in a large new facility. Since that time, the cooperative has sharply reduced manufacturing operations at the headquarters plant, converted the small bottling facility there to a high-volume "white plant" processing only high-volume fluid milk items, acquired a distribution point in a smaller city, and purchased and converted another processing plant to a soft product operation.

Cooperative B attempts to meet all fluid needs from members' milk. Seasonal and weekend reserves are balanced by a regional marketing/bargaining cooperative in the same area. The cooperatives are patrons of each other and, as with Prairie Farms, patronage earnings are shared. Cooperative B has limited the entrance of new members to those needed to meet processing needs, now totaling about 350 producers. While competition occurs to a small extent between the two cooperatives for well-located, high-quality producers, the two cooperatives have long maintained close and amiable working relations for their mutual benefit.

Plants and Operations A major factor in the long-term success of this cooperative has been the operating efficiency of its plants, particularly the large-capacity facility constructed in the mid-1960's in the metropolitan area. Confronted with the need to close the three old facilities in very poor condition and consolidate into a new one, management again began a program of careful planning. Working with an experienced dairy process engineering firm, management designed the new plant both for maximum labor and utility efficiency and throughput expansion flexibility. The process engineering firm was encouraged to design innovative and forward-looking features into the plant. Some examples included on-line fat standardization, propylene glycol brine for cooling using centrifugal freon compressors, and long-span ceilings in filling, process, and warehouse spaces. With an eye toward projected growth of sales and a predictable sharp increase in labor costs, the capital investment budget needed to achieve these goals was not restricted. The resulting plant is, even today, one of the more efficient in the Nation by any measure. A daily processing and load-out capacity of more than 125,000 gallons can be reached with fewer than 30 hourly employees excluding engineers. Only two salaried people provide direct plant supervision. The cooperative's other plants have been brought near this

Table 2—Consolidated balance sheet summaries for Prairie Farms with comparative financial ratios,
selected years, 1939-78¹

Item	1978	1972	1967	1963	1957	1954	1950	1946	1941	1939
1,000 dollars										
Assets:										
Current	28,244	9,520	4,778	2,359	1,242	321	140	244	22	9
Other	17,282	10,520	4,806	2,825	1,805	488	447	206	28	27
Total	45,526	20,040	9,584	5,184	3,047	809	587	450	50	36
Liabilities:										
Current	17,556	7,241	3,204	1,133	991	177	123	167	12	9
Other	7,056	4,525	1,532	140	284	67	52	—	—	4
Total	24,612	11,766	4,736	1,283	1,275	244	175	167	16	13
Net worth:										
Preferred stock (total)	4,967	2,588	2,340	2,256	1,490	366	296	124	23	21
Retained margins ²	15,947	5,686	2,508	1,645	282	199	116	159	11	2
Total	20,914	8,274	4,848	3,901	1,772	565	412	283	34	23
Total liabilities and net worth	45,526	20,040	9,584	5,184	3,047	809	587	450	50	36

	Selected financial ratios ³					
Current ratio, Prairie Farms Dairy	1.61	1.31	1.49	2.08	1.25	1.81
Current ratio, Industry Median	1.40	1.20	1.30	1.45	1.49	1.95
Net Worth/Total Assets, Prairie Farms	.46	.41	.51	.75	.58	.70
Net Worth/Total Assets, Industry Median	.42	.55	.42	.46	.58	.60
					.58	.55
					—	—

— = None or not available.

¹Data for fiscal years ending September 30 except for 1963 that ended February 28.

²Includes other equity of \$140,000 in 1967 and \$321,000 in 1963.

³Prairie Farms financial ratio computed from unrounded data.

Source: Prairie Farms Dairy, Inc. Economic Impact of a Dairy Cooperative. ACS Res. Rpt. No. 12, ACS, Dept. of Agriculture. July 1982.
p. 31.

standard, partly through specialization and partly through management efforts.

The metropolitan area plant serves as a "mother" plant. Besides producing fluid milk, it also processes ice cream mix, cottage cheese, and drinks. The small headquarters plant serves the rural area and packages only fluid milk, including school milk. Small-volume items such as buttermilk, creams, and cottage cheese are shipped from the "mother" plant. The other plant, about 60 miles away, specializes in packaging sterile cream for sale to restaurants, airlines, and institutions. The cooperative operates one distribution point in a small city 60 miles from the major metropolitan area. Formerly a handler, the facility was purchased to extend the cooperative's sales area.

The large metropolitan area where the large processing plant is located is unique both in the extent of vertical integration of fluid processing by grocery chains and in the heavy concentration of grocery sales in a few firms. This cooperative has adapted its sales program to become, by far, the major residual supplier to smaller nonintegrated chains, drug stores, schools, and institutions. To minimize costs in servicing high-cost, lower volume accounts, the cooperative leases a highly specialized truck fleet carefully designed to service various types of accounts. Some trucks have hydraulic lifts, and size and type of trucks are determined by route volume and length. The object is to maximize daily delivery volumes with minimum lease expense.

Wide diversification in sales accounts and the cooperative's dominant sales position with nonintegrated accounts in both the major metropolitan area and its rural headquarters area minimize concentration of sales accounts. Less than 25 percent of sales are made to five supermarket chains. In 1980, the cooperative served 8 to 10 school systems and several large Government installations. The main plant performs this sales effort with only 3 salaried salespeople and working route foremen for almost 70 routes. About 15 to 20 routes serve the rural areas near the headquarters plant. Still other rural delivery routes operate from the cooperative's newly acquired distribution point.

Organization Membership of Cooperative B is relatively compact, partly as a result of geography and partly of policy. With higher marketing returns than other outlets, the cooperative has been able to be highly selective in accepting new members. The cooperative operates its own farm bulk pickup system and most trucks are able to run two routes a day.

This compact procurement area and continuing financial success has

permitted the cooperative to operate with a minimum of formalized member relations programs. A 12-person board of directors is elected from 11 districts. One director is appointed by the State university. The four-person executive committee is elected by the board and includes the general manager who is the secretary-treasurer. Membership meetings consist of one local district meeting and one annual meeting a year at which only half pints of milk are served. Many members maintain contact with their cooperative by visits to the headquarters office.

The board meets monthly and the executive committee less often, although informal contact with hired management is considerable. Long tenure is the tradition for both directors and hired management.

Cooperative B has had only two managers, and the current general manager served several decades as assistant general manager. Management depth can best be described as "lean," with a bare minimum of salaried personnel. Each of the three major plant locations has a manager, one of whom is the association's assistant general manager. Periodically, they briefly rotate positions to be familiar with all cooperative operations.

Under each of the plant managers is an operations manager and one or two sales managers. All major and many lesser proposed projects and changes in operating policies are analyzed at length by the four-person management team of general manager and plant managers before presentation to the board. Cooperative B's manager stated that there have been three basic operating policies during the cooperative's entire history:

- Producers control the beginning or "raw" end of the marketing chain and therefore control the tail end through ownership of the processing and delivery business.
- For all projects, "crawl before you walk and walk before you run." This strategy implies careful indepth studies are the rule in decisionmaking.
- Never go to the board of directors before the entire top hired management staff is sold on the merits of a project.

Compensation for this management team is competitive with industry levels and higher than for many similar size cooperatives.

Financial Policies The cooperative has always provided equity financing from retained earnings, with a retain revolving period from 5 to 9 years, currently at 9 years. No operating assessments or capital retains have been charged to members.

Debt financing has been used only sparingly. The purchase of the large metropolitan area business was financed partially from a large retained earnings balance largely accumulated and rolled over from the war years and partially from long-term payments to the former owners. The new modern plant was financed from sale of unneeded properties and a facility loan from the bank for cooperatives. A later expansion of the large plant used low interest county industrial development bonds.

In recent years, earnings have been about \$1 per hundredweight with about 45-50 percent paid in cash and the rest retained. Initial milk pay prices are established each month by the board and generally have been established at or just below prices paid to local members of the regional marketing/bargaining cooperative in the procurement area. A major long-term financial (or operating) policy has been to carefully hold down all costs. This is reflected in the austere physical appearance of the cooperative's offices and other facilities, minimum expenses for public and member relations, and small management staff level.

A recent year condensed statement of operation reveals the financial strength of Cooperative B. Note particularly the current ratio of 1.7 and 33.6 percent return on patrons' equity. This performance is typical of the cooperative's history in recent decades.

COOPERATIVE C Cooperative C is similar to Cooperative A (Prairie Farms) in the way it acquired and developed its physical assets and in the means employed to achieve sales growth and financial strength.

The cooperative is in or on the edge of a heavy milk-producing area. Several manufacturing plant markets for raw milk are within and adjacent to the cooperative's membership area. Fluid markets are in two medium-size metropolitan areas and several smaller cities and towns. The overall economic health and population of the nonagricultural sector during recent decades is best described as stable or declining slightly.

The cooperative's 1,000 members are nearly all within 75 miles of the home office. The membership of another smaller fluid milk processing cooperative and that of several regional marketing/bargaining cooperatives overlap those of Cooperative C, but C's position in its procurement area is quite dominant.

History The historical structure of dairy cooperatives in Cooperative C's area reveals a tendency for farmers to form many small bargaining associations, some with fewer than a dozen members, and for these

COOPERATIVE B, STATEMENT OF OPERATIONS

Sales	\$61,803,407
Less cost of goods sold	45,806,743
Gross margin	\$15,996,664
Hauling revenues	663,084
Margin for expenses	\$16,659,748
Less operating expenses	13,549,686
Operating income	\$3,110,062
Other income	240,245
Net income	\$ 3,350,307

ASSETS

Current assets:	
Cash	\$4,771,791
Accounts and notes receivable	5,023,165
Inventories	933,032
Prepaid expenses	153,054
Total current assets	\$10,881,042
Fixed assets (less depreciation)	
Real estate, equipment and vehicles	\$4,243,962
Construction in process	2,514,424
Other assets	1,231,380
Total assets	\$18,870,808

LIABILITIES AND EQUITY

Current liabilities:	
Patronage distributions	\$2,413,403
Accounts payable	3,610,005
Accrued expenses	334,252
Other current liabilities	25,237
Total current liabilities	\$6,382,897
Industrial bond advances	2,519,016
Total liabilities	\$8,901,913
Patrons' equities	9,968,895
Total liabilities and equities	\$18,870,808

organizations to persist. From the 1930's until the late 1960's, economic conditions often encouraged these small cooperatives to form federations to perform certain joint marketing functions.

Rarely did these cooperatives merge. Area producers apparently believed grassroots control of further marketing projects could be better maintained through use of smaller organizations. A few of these small organizations grew in size and took over small fluid processing businesses of handler customers going out of business. Eventually, separate federations of small cooperatives, one in each of the two city markets, were operating processing plants and beginning to compete with each other. At the same time, all of these cooperatives were federated to jointly operate reserve balancing facilities and for market order representation. By 1970, the cooperatives' leaders were convinced a stronger, more centralized organization was needed to provide the member financial support for required facility modernization. The two federations merged into one new federation and this marks the real origin of Cooperative C.

The small "parent" cooperatives placed total marketing and membership functions into the federation and remained merely as membership groupings or districts. Later, the cooperatives reorganized as a centralized organization.

The cooperative, as did Prairie Farms, embarked on a program of acquiring processing firms. Each acquisition was studied to assure it would complement the cooperative's growth strategy. This strategy required the new acquisition to yield an acceptable return on investment either by improving the efficiency of the cooperative's existing plants by adding throughput, or if the acquired plant was to be operated, by being able to achieve corporate earning standards on its own.

Cooperative C is now the dominant fluid milk processor in the two major markets and most of the smaller surrounding ones. It supplies most of the raw fluid milk to other fluid processors and manufacturing plants in its trade area. It operates two medium-size processing plants, one in each major city, and three small "white" plants in rural areas. The latter three plants are nonregulated by milk market orders. Their nonpooled status allows the cooperative to earn an operating margin above that obtainable if Class I payments would have to be pooled. Cooperative C manufactures cottage cheese and some specialty cheese in one of the fluid plants and operates a small ice cream mix plant.

Plants and Operations The cooperative has not yet made a major capital investment in new facilities, although one of the predecessor federations constructed a modern plant in 1960. This plant and the others have been continually remodeled and modernized and for the most part are reasonably efficient. While the cooperative's volume of processed milk sales has grown to the point where a new high-volume modern plant could be supported, the cooperative has opted, for the time being, to concentrate on making optimal use of older facilities. Among the reasons for this approach are: (1) the geographic separation of major wholesale markets where higher finished product delivery costs could eat into operating cost savings of a single new plant; (2) the advantage of using unregulated plants; and (3) management's long-time priority policy of seeking an immediate maximum return on assets and equity.

While most of the facilities appear old, management continually monitors operating efficiencies and often employs outside consultants to review operating standards and results.

Very little vertical chain store integration into dairy processing has taken place in the cooperative's sales area. Cooperative C and its competitive processing cooperative have together achieved a dominant market sales position and, by providing effective low-cost, high-volume service, seek to forestall vertical integration. Chain store market fragmentation may also help, as only a few chains have a milk sales volume to justify a plant. The top four customers account for only 30 percent of total plant volume.

The cooperative makes about 40 percent of sales through independent subdealers, thereby avoiding the costs of serving scattered low-volume outlets. Major accounts and institutions are served in company trucks. Product pricing practices are guided by computer programs that take all cost factors into account.

Organization Cooperative C uses a delegate system to conduct business at annual meetings. The cooperative's territory is divided into three "areas." At the area annual meeting, members elect 1 delegate for each 15 members. Delegates in each area then elect area directors, who also must be delegates. At the annual delegate meeting, four at-large directors, who do not need to be delegates, are elected. In total, the cooperative has 57 delegates, 11 area directors and 4 at-large directors. All serve 3-year terms. Besides the "area" annual meeting, a midyear "area" member information meeting and a spring annual total membership meeting are held, the latter mostly a social rather than a business function.

The board and executive committee meet monthly. Committees of the board include membership, quality, hauling, and finance. The manager and board or executive committee work together exceptionally close on capital budget formulation, acquisition, and certain other matters.

The cooperative's general manager was the manager of one of the predecessor cooperatives and has been the only general manager of the present organization. The manager has long emphasized careful cost control and high return on assets employed in each operation. He has used a "cost center" approach to monitor and achieve good operating results.

Considerable operating independence has been assigned to division managers but high performance is demanded. Unlike Prairie Farms and Cooperative B, considerable turnover has occurred in the top management team. Second level managers include two division managers, one in each city, and staff directors for employee relations, finance, and membership and field services. Compensation levels are well above average for similar size cooperatives, although this is due mainly to a policy of giving a wide scope for managers in any one position to develop their own careers.

Financial Policies This cooperative has gone through an extensive evolution in its equity financing structure. Prior to 1979, it used the traditional revolving fund method. That year, a base capital program was established, currently at about \$1.30 per hundredweight of milk produced the previous year.

As stated in the cooperative's annual report, the base capital program "... provides for active producer-members to supply the basic equity capital needs of the cooperative in proportion to their use of the cooperative's facilities, that is, in proportion to their milk production. Thus, the financial program will stabilize equity capital at levels as determined by the board of directors and will provide more certainty of the financial strength of the cooperative in the future."

A recent-year condensed statement of operations shows a particularly strong member equity position, which far exceeds the value of fixed and other assets. Thus, Cooperative C is positioned for future capital investments. At the same time, the cooperative was able to provide distributable proceeds equal to 17 percent of this high level of member equity.

COOPERATIVE C, STATEMENT OF OPERATION

Operating revenue	\$117,325,667
Cost of operations:	
Advances to producers	92,714,419
Milk and products purchased from other sources	8,666,658
Operating and other expenses, net	14,234,188
	<hr/>
	\$115,615,265
Distributable proceeds	\$1,710,402
Per hundredweight ratio:	
Advances to member producers	\$11.83
Distributable proceeds	.22

ASSETS

Current assets	\$13,818,973
Investments	1,846,372
Property, plant and equipment, net	6,323,462
Other assets	632,227
	<hr/>
Total assets	\$22,621,034

LIABILITIES AND EQUITY

Current liabilities	\$11,683,341
Long-term liabilities	857,462
Members' equity	10,080,231
	<hr/>
Total liabilities and members' equity	\$22,621,034

Three Less Successful Cooperatives (X, Y, AND Z)

COOPERATIVE X This cooperative consolidated into a large regional marketing/bargaining cooperative and is presently operated as a division. All of its processing facilities were sold or closed down after consolidation.

History Cooperative X was organized in the early 1970's as a result of merger of a large city market's dominant bargaining cooperative and a mid-sized bottling cooperative. The predecessor cooperatives were organized in

the 1920's and 1930's.

The cooperative was both the dominant supplier of raw milk to the city's handlers and the operator of one of the two largest processing plants, with about a 20-percent share of the market's fluid and soft product sales. The metropolitan area's economy and population during the past two decades was expanding moderately. The widespread producer membership of about 2,000 was in a region with a highly diversified agricultural economy. Only a few counties could be described as dairy specialized. Through the 1960's and 1970's, much of the region experienced a sharp decrease in the total number of milk producers and considerable consolidation of production into larger surviving specialized dairy farms. A significant portion of the membership, in one part of the procurement area, operated very small dairy farms.

Over time, the city market grew while nearby production dropped, becoming a "short" market. High Class I sales forced the cooperative to reach ever farther for milk supplies. A large portion of member milk supplies came from 100 to 200 miles, along with considerable supplementary supplies from still more distant cooperatives. Membership was widely scattered over three States, and was heavily interspersed with members of several competing dairy cooperatives.

Merger of the two predecessor cooperatives occurred partly to rescue the smaller processing cooperative from financial difficulties. A larger membership base helped provide the equity needed to upgrade and expand the processing plant. For several years, the newly formed cooperative was able to slowly improve its financial strength. Membership and the volume of milk supplied remained stable. However, it was pointed out that to achieve producer unity the larger bargaining cooperative had agreed to accept a higher value for the processing cooperative's fixed assets than was justified by their past earning record. The process of writing down these asset values, about \$1.5 million, was a financial burden that hindered the new cooperative's ability to build equity and reduce debt.

By the mid-1970's, several factors in local milk marketing began to affect Cooperative X. As the dominant supplier of raw milk to local handlers, the cooperative's leadership was reluctant to aggressively compete for expanded sales through processing. As a result, processing volume grew slowly or not at all, while unit costs rose. Complicating the cost problem, processing was done in only one plant in an old four-story building crowded on a small lot

near the city center. Remodeling costs would have been high in relation to gains in productivity engineering.

At this point, a national noncooperative dairy firm began competing aggressively on a price basis for large local accounts, supplying them from a large modern plant in the nearest large city. The resulting deterioration in marketing margins, besides adversely affecting X, forced the cooperative's largest raw milk buyer into financial difficulties. The cooperative then acquired this firm for the value of the account receivable for raw milk, about \$600,000. The hope was that combining these two operations would lower unit costs.

At this time, the cooperative drew on the resources of Farmer Cooperative Service (now ACS) and a dairy processing consultant engineering firm to evaluate alternatives. It was determined that both the cooperative's old plant and the newly acquired facility were extremely high-cost operations. With the combined volumes, however, a new modern plant could easily achieve cost savings sufficient to self-liquidate the new investment and allow the cooperative to regain a cost competitive market position. However, the cooperative would have had to sharply increase member equity levels to obtain necessary initial debt financing. With a membership widely dispersed among competing cooperatives' procurement territory, leadership was reluctant to implement the required capital retain deduction. The required retain level would be high. Old facilities had little salvage value and member equity level was low. Because the earnings history of the cooperative had been low, it was felt producers would lack confidence in the cooperative's ability to make a new plant work as well as forecast. Thus, the cooperative's leadership accepted another alternative, and consolidated with a large regional marketing/bargaining cooperative and liquidated the fixed assets.

Operations and Plants Some elaboration of plant operations may provide an insight to the cooperative's major problem area.

The plant originally owned by the predecessor processing cooperative was constructed before World War II. It was quite large in square footage, but was difficult to adapt to modern high-capacity automated equipment. Heating and refrigeration systems were totally outmoded. A complete shutdown would have been required to totally remodel the facility. Shutdown meant locating a plant to temporarily process 40,000 gallons of milk daily.

The other plant, acquired for receivables, processed between 30,000 and 40,000 gallons daily but was in poor condition and was operating well over capacity. Neither plant had ground space to allow development of an efficient finished product handling and load-out system.

While Prairie Farms and Cooperative C operated in old structures, they carried on a continual program of modernization, disposing of facilities that could not achieve established efficiency and quality standards. Management of Cooperative X fully realized the need for a sustained program of modernization, but the burden of writing down overvalued assets and a perceived competitive member relations problem prevented the cooperative from making needed capital investments.

Product distribution methods of Cooperative X did not differ greatly from those of the three successful cooperatives except in two ways. First, the metropolitan area market held on to home delivery longer than most others, eventually causing a distribution cost problem. Second, the congested environment of the processing plants required using several distribution depots located fairly near the plants. These depots were expensive to operate, particularly because of the extra supervision costs. Attention was given to operating each distribution route efficiently through routing, optimal use of vehicles, and minimizing small volume stops.

The feasibility analysis for a new plant projected a 3- or 4-year payout by eliminating 125 positions and a \$200,000 annual saving in utilities costs and reduction in product loss.

Organization The cooperative's membership was divided into 18 districts. One director was elected by each district and two at-large directors were elected at the annual meeting. No delegate system was used. Both the manager and most of the board had long tenures. A unique feature was that the manager was also president. He operated a dairy farm in partnership with a relative. The board met monthly and the executive committee less often.

As a matter of policy, the second level management team often met with the board. While management and board exercised normal separation of responsibilities, board and management communications were exceptionally close, probably due in part to the manager's dual position as president of the board.

Compensation of top and mid-level management was considerably lower than similar organizations and probably contributed to considerable turnover in some second level management positions.

The general manager used more of a vertical management structure, placing considerable responsibility on the plant manager who also supervised sales, distribution, and plant accounting. Staff positions reporting directly to the general manager included field supervisor, office manager, data processing, and the full-time general counsel, who also served as assistant general manager.

Finance As pointed out, Cooperative X was formed fairly recently from a medium-size pure bargaining association and a smaller processing cooperative that owned a fairly large capacity plant. The bargaining association had enjoyed many years of successful operations and, typically, had no reason to create a large member equity reserve. The processing cooperative had experienced modest earnings but leaders recognized the need to provide for greatly increased equity and debt financing to modernize and improve profitability. In other words, retains from earnings weren't able to do the job.

After cooperative "X" was formed, the financial objectives envisioned by both cooperatives' leaders began to be achieved. With a modest 8 cents per hundredweight member operating assessment and capital retain from a larger membership base, some operating improvements were made and earnings improved. The 400 former members of the processing cooperative realized the benefit of a generous payment for their equity in the operating plant, and the new cooperative was able to write down more than \$1.3 million of this equity. All producers received more than 20 cents per hundredweight above the Federal order minimum for milk from all the cooperative's operations. However, the extremely sharp competitive situation during the mid-1970's left Cooperative X with an uncompetitive plant and insufficient equity to obtain financing needed to adapt to this situation.

Cooperative X was unable to capitalize on the large volume of sales from taking over the large handler. A strong member equity position, such as developed by Cooperative B, would have allowed Cooperative X to construct a fully competitive profitable facility, probably able to provide earnings sufficient to cover debt repayment requirements and a reasonable return on member equity.

A part-year statement of operations illustrates Cooperative X's dilemma.

COOPERATIVE X, STATEMENT OF OPERATIONS**Revenues:**

Sales of dairy products - net	\$19,429,883
Less cost of sales	17,735,024
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Gross margin from sales	\$1,694,859
Marketing fees and other income	447,676
Total gross margin and other revenue	\$2,142,535

Operating expenses:

Selling and delivery	\$1,336,934
Administrative and general	531,909
Interest, principally Bank for Cooperatives	97,418
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Total operating expenses	\$1,966,261
Income from operations	\$176,274
Other charges:	
Amortization of imputed interest on obligation to stock redemption trust	17,641
Unconsolidated subsidiary loss	1,558,452
<hr/>	
	\$ 1,576,093
Net margin (loss)	(\$1,399,819)

ASSETS**Current assets:**

Cash	\$84,484
Accounts and notes receivable—trade (less allowance for doubtful accounts of \$171,122)	4,510,626
Account receivable—wholly owned subsidiary	363,483
Inventories:	
Finished product and products in process	282,924
Raw products, materials and supplies	492,603
Prepaid expenses	181,686
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Total current assets	\$5,915,806

Investment and other assets:

Equity in Bank for Cooperatives	206,430
Other investments	46,024
Notes receivable—trade (less current portion of \$21,961)	16,124
Note receivable—wholly owned subsidiary	1,209,409
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Total investments and other assets	\$1,477,987
 Property, plant, and equipment:	
Land	642,361
Buildings and improvements	1,660,441
Equipment and motor vehicles	5,207,954
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	\$7,510,756
Less—accumulated depreciation	5,874,264
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Property, plant, and equipment-net	\$1,636,492
	\$9,030,285

LIABILITIES AND EQUITY

Current liabilities:

Bank overdraft	\$2,161,330
Notes payable	746,685
Current portion of long-term debt	845,757
Accounts payable—producers, haulers and trade	3,284,334
Accrued taxes and expenses	309,466
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0 Total current liabilities	\$7,347,572

Long-term debt:

Installment and mortgage notes	\$1,200,687
Installment obligation—Preferred Stock	
Redemption Trust (less unamortized imputed interest of \$50,122)	865,854
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Less—portion due within 1 year	\$2,066,541
	845,757
<hr/>	
Long-term debt—net	\$1,220,784

Members' equity:

Unallocated reserves	(609,168)
Allocated reserves	1,071,097
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Total members' equity	\$461,929
	\$9,030,285

COOPERATIVE Y This cooperative encountered a severe financial problem in the mid-1970's. A new top management team was brought in. The cooperative has reorganized in a different form and is making a strong recovery. This report examines Cooperative Y only up to the period of financial difficulty, at which point bankruptcy was one option being considered by its board and major lender.

Geographic Setting This cooperative is in a medium-size city within 50 miles of a large metropolitan area and several other medium-size city markets. Because of rapid urbanization, milk production in the area was (and still is) moving away from the cooperative's plants. Membership was scattered among members of several other pure bargaining and regional marketing/bargaining cooperatives. While much of the membership was reasonably compact and within 75 miles of the cooperative's plants, a significant portion was widely dispersed and required long-distance farm-to-plant hauling.

Dairying is the most important agricultural enterprise in the region and some counties have a high concentration of milk production. The proximity to several major fluid and soft product markets provided dairy farmers with many alternative market outlets, either through membership in other cooperatives or directly to handlers.

During the two decades prior to the mid-1970's, the economy and population of the cooperative's market grew, not quite at a "boom" rate, but above average for the Nation and as much or more than other cooperatives in this report.

History Cooperative Y began processing milk shortly after it was organized in the early 1930's with about 360 members. It grew steadily to a peak membership of 3,400 members by 1957. Growth made Cooperative Y one of the larger cooperative fluid milk processors nationally. Its large processing plant was at one time among the Nation's most modern. The cooperative's trade name was widely known by consumers. Years of successful financial results created a long waiting list of prospective members.

In the 1960's and early 1970's, a series of events and management decisions placed a heavy strain on the cooperative. First, the Federal Milk Market Order that regulated much of the cooperative's trade area shifted from an individual handler pool to a marketwide pool, reducing the producer price advantage held by a "bottling" cooperative with a high fluid utilization. At the same time, the cooperative embarked on an aggressive program to

acquire additional sales, purchasing one large fluid processing firm within its trade area and another medium-size firm in an adjacent area. The cooperative's growth strategy centered on combining its own and the purchased firms' fluid processing business in the newly purchased plants and converting the cooperative's old principal plant into a high-capacity, modern soft product and cheddar cheese facility.

Much of the fluid sales business of the purchased firms was in home delivery. This business began to decline rapidly in the late 1960's. The wholesale business that replaced home delivery had much lower per unit profit margins and required major new investments in vehicles and finished product load-out systems. The cooperative was left with two large unneeded and new garages for home delivery trucks. As a means of utilizing the nearly completed garage at the headquarters plant, it was converted into a cheddar cheese manufacturing facility.

To finance these acquisitions and make operating changes, the cooperative relied primarily on debt capital, both bank loans and interest bearing debentures. To remain competitive in milk procurement, Cooperative Y did not turn to members for increased equity contributions. To provide the volume of milk required by the expansion, the cooperative turned increasingly to other cooperatives and more distant supplies, raising milk costs and further reducing operating margins.

By the mid-1970's, large operating losses were recurring, threatening the life of the cooperative, though sales of fluid, soft, and hard products were expanding at a reasonable rate.

Plants and Operations At this point, the cooperative was operating two fluid processing plants with a combined capacity of almost 275,000 gallons per day, at only 50-percent capacity; a cheese plant with a capacity of 120,000 pounds of cheese per day; and soft products manufacturing capacity of more than 200,000 pounds per day milk equivalent. The facilities, while underutilized, had the advantage, unlike Cooperative X, of being either already efficient or easily adaptable to the use of new labor efficient technology. At the same time, most of the plant investments, with the exception of the new cheddar cheese plant, were made during a preinflation time and were partly depreciated. Full utilization of these assets would make Cooperative Y competitive with any of its competition on a unit-cost basis. The challenge confronting Cooperative Y was to improve sales and to maintain the support of its then dwindling membership while enlisting the help and participation of other cooperatives.

Little detail is available concerning the sales policies and practices of Cooperative Y during the years of financial pressure. It is known that at one point fluid milk and ice cream sales tended to be concentrated in one large account, making the cooperative vulnerable to loss of business and low unit margins. Though the cooperative's trade name was well known, most packaging was done in private label. The cheese business was tied almost exclusively to one national account. During the late 1960's and early 1970's while a few competing handlers left the processing business, two major supermarket chains integrated vertically into bottling. The cooperative did, however, at least manage to slowly increase its market share in this period.

Organization The cooperative had long operated with a small board of one director elected from each of seven districts at local districts meetings. By the mid-1970's, this was increased to nine directors, including two elected at large at the cooperative's annual meeting. There is a history of long tenure of directors. Some directors on the reorganized cooperative's board even precede the earlier financial crisis. Board meetings were held monthly with occasional meetings of the executive committee.

This cooperative always attempted to keep members informed with attractive newsletters, district or local meetings, and well-planned annual meetings.

Possibly, the critical problem that led to Cooperative Y's crisis lay in a lack of effective communication between hired management and the elected board. The growth of Cooperative Y until the mid-1960's was largely guided by one manager. With a strong earnings record, the board, similar to some others described in this report, tended to place a high level of trust and confidence in this individual. On his death, a new manager with a forceful personality assumed the same position vis-a-vis the board. The new expansion and acquisition programs proposed in the mid-1960's, some originally planned by the deceased manager and some by the new manager, were accepted by the board even in the face of some contrary advice from consulting firms. The board also continued a policy of using highly leveraged debt financing for these projects, even though the extent of new capital investment in relation to existing assets far exceeded the annual asset growth historically experienced by the cooperative. Using debt financing was typical of many noncooperative firms in the late 1960's and early 1970's but not typical of most agricultural cooperatives.

Financial Policies For years, this cooperative did not rely to any extent on member patron equity to finance growth, at least not in the traditional manner. Most capital was raised through sale of dividend-bearing preferred

stock and then, debentures. These instruments were sold to members, banks, the union pension fund, and the general public. The general philosophy was that while farmers own the business they should invest their money on their farms and let the public provide the firm's capital.

An earlier ACS analysis of the cooperative graphically describes the changes that led to a financial crisis in 1975:

"During the 5-year period from February 1, 1970, to January 31, 1975, Cooperative Y working capital decreased from \$2.3 million to a deficit of \$1.4 million, or a decrease of \$3.7 million. An \$8.7 million net decrease in net worth; repayments of about \$8.9 million of term obligations; \$9.1 million expenditures for fixed assets; about a \$1.0 million increase in investments in the Bank for Cooperatives' C stock; and \$0.8 million for other prepaid items and adjustments to the pension fund—in aggregate exceeded the \$15.9 million of term loans obtained during the period, elimination of the \$2.8 million of intangible assets from the balance sheet; and \$5.0 million of depreciation charges retained."

"The \$8.7 million reduction in net worth reflects the "biting of the bullet" during the year ending January 31, 1975. At that time, net worth was adjusted downward by \$5.7 million for losses that could be attributable to prior years as well as the "water" represented by the intangible assets. Taking into account these adjustments as well as the reported operating losses and gains for the 5-year period, the cooperative's net worth decreased by \$2.4 million as a result of net operating losses; payments of \$3.5 million as dividends on common and preferred stock; conversion of \$1.5 million of equity (preferred stock) capital to debt (debentures) capital; the writeoff of \$2.7 million of nonproductive assets; and redemption of about \$92,500 of capital stock. The only meaningful contribution to net worth during the 5-year period was the \$1.5 million of per-unit capital retains invested by producers. At present, Cooperative Y has no per-unit capital retain program."

"As a result of the decrease in net worth from \$11.3 million at January 31, 1970, to \$2.7 million at January 31, 1975, the cooperative's creditors—both secured and unsecured—have changed their relative position vis-a-vis its total assets from a 64-percent financing position at January 31, 1970, to a 92 percent position at January 31, 1975."

The condensed statement of operations further illustrates Cooperative Y's difficult position.

COOPERATIVE Y, STATEMENT OF OPERATIONS

Revenues:	
Net sales	\$79,484,079
Other	712,384
	<hr/>
	\$80,196,463
Costs and expenses:	
Cost of milk	
less assessments of	\$1,108,088
	\$57,803,478
Purchases other than milk	5,862,732
Operating	14,390,102
Depreciation	1,847,793
Interest	2,171,829
	<hr/>
	\$82,075,934
Net loss	\$ (1,879,471)

ASSETS

Current assets:	
Cash	\$99,260
U.S. treasury bills - at cost	800,000
Notes and accounts receivable	3,153,261
Inventories	2,308,006
Current portion of registered debenture sinking fund	343,700
Prepaid expenses	377,997
	<hr/>
Total current assets	\$7,082,224
Investments and other assets:	
Stock and equity in Bank for Cooperatives	\$1,782,114
Due from producers	773,543
Registered debenture sinking fund, less current portion	361,245
Other	459,271
	<hr/>
	\$3,376,173
Property, plant and equipment - at cost:	
Land	\$256,951
Buildings and building equipment	20,861,659
Machinery and equipment	12,440,747
Transportation equipment	\$4,404,118
Furniture and fixtures	442,630
	<hr/>
Less accumulated depreciation	\$ 38,406,105
	<hr/>
Fixed assets	15,607,643
	<hr/>
Total assets	\$ 22,798,462
	<hr/>
	\$ 33,256,859

LIABILITIES AND STOCKHOLDERS' EQUITY

Current liabilities:

9-1/2% note payable to Bank for Cooperatives	\$900,000
Due to producers	3,927,210
Accounts payable and accrued expenses	2,448,290
Current portion of long-term obligations	2,885,702
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Total current liabilities	\$10,161,202
Long-term obligations, less current portion	\$ 20,427,222
Stockholders' equity:	
6% Preferred stock, cumulative, par value \$100 a share:	
Authorized 125,000 shares	\$11,166,900
Issued and outstanding 111,669 shares	
Common stock, par value \$50 a share:	
Authorized 100,000 shares	
Issued and outstanding 32,234 shares	1,611,700
Unallocated accumulated deficit	(10,110,165)
<hr/>	
	2,668,435
	\$33,256,859

COOPERATIVE Z After experiencing a severe financial crisis in the late 1970's, this cooperative merged into a large regional marketing/bargaining cooperative operating in the same membership and marketing area and is operating successfully as an independent division. Most of the present top management team joined Cooperative Z just prior to the merger.

Cooperative Z was headquartered in a medium-size city adjacent to a large metropolitan area and several other large cities. Just prior to the merger at the height of its financial crisis, the firm operated one large-size and two medium-size fluid processing plants along with an ice cream plant and another manufacturing facility. At that time, plans already had been made to consolidate the three fluid plants into two. Products were distributed throughout almost the entire large State where the cooperative was headquartered and into adjoining States. Economic growth and population of this area was stable in the 1960's and 1970's.

The agricultural economy of much of the procurement area is dairy oriented. It is a fairly low-cost milk production area with a large reserve supply. Competition for a cooperative milk market came from the dominant large regional marketing/bargaining cooperative, and in earlier years from several small cooperatives, some with small milk manufacturing facilities. While there was always competition for members between Cooperative Z and the large regional, these cooperatives had long worked closely and amiably in market order development, milk promotion, and other programs.

History This cooperative began as a noncooperative firm organized in the early 1930's. Shortly after World War II, the owners sold the firm to a cooperative organized from producers then supplying raw milk. The former principal owner remained as the general manager until the mid-1960's. During this period, the cooperative acquired numerous processing firms quitting the business but soon incorporated most volume into its own plants.

In the mid-1960's, on the retirement of the original manager, a new manager began a program of rapid and wide-ranging acquisition and sales growth. Merger with another smaller processing cooperative about 140 miles away and purchase of a noncooperative firm expanded the cooperative's distribution area statewide.

In the early 1970's, the cooperative acquired a large processing firm in the nearby metropolitan city market. This firm was essentially a captive of a large food chain, as it had only the one account. While the plant was modern, the firm had been experiencing severe labor problems and an unfavorable sales price for finished products. The cooperative was unable to return this operation to profitability and was soon forced to close it down with an asset writedown of more than a million dollars. This loss contributed to a need to conserve capital, which prevented the cooperative from completing all the modernization projects contemplated for its other plants. In turn, this tended to reduce the cooperative's competitiveness in the highly competitive milk marketing environment and reduced overall earnings. Nevertheless, throughout this period, sales volume grew and some improvements were made to enhance processing and packaging efficiency.

Acquisition of other processing firms to expand sales continued during this period, but the cooperative was increasingly unable to coordinate and consolidate sales and processing efforts. As operating losses began to mount, the cooperative's board increased members' operating assessments and capital retains. Finally, the Bank for Cooperatives called its loan and helped arrange for a merger of Cooperative Z into the large regional.

Plants and Operations At the time of the merger, the cooperative operated five plants. The large headquarters plant had a capacity of more than 80,000 gallons per day and had been frequently expanded and remodeled. Ample land was available for truck loading and expansion but the processing and loadout systems had evolved into a mix of efficient and inefficient subsystems. No long-term coherent plan existed for modernizing the facility. Another small plant on the opposite side of the State, operated

partly as a "white" plant, was reasonably efficient but housed in an old building. Another facility, about 140 miles from headquarters, was housed in a new building and, with a capacity of about 40,000 gallons daily, operated as a full-line plant with reasonable labor efficiency. An analysis of fluid processing records of Cooperative Z showed a labor efficiency of only about 130 gallons of finished product per manhour of hourly labor, excluding engineering. This contrasted to more than 260 gallons per manhour for Cooperative B and more than 160 for Cooperatives A and C.

A large, old building 25 miles from headquarters housed a condensed milk and ice cream mix operation to balance member milk supplies with fluid and ice cream sales requirements. A few blocks from headquarters was a large, efficient ice cream plant. Several other plants purchased in the 1960's and 1970's were stripped of equipment and later sold. The cooperative operated a large distribution reload depot in a corner of the State about 200 miles from headquarters.

Cooperative Z's top management was considered "sales oriented," rather than "cost oriented." A long-held strategy was to "purchase" sales rather than "steal" sales through cost-price competition. One result was a confused and uncoordinated network of sales routes from acquired processing firms. Possibly one reason for top management's emphasis on rapid acquisition of sales business was that the general manager's compensation was set as a percentage of sales, although this percentage was reduced somewhat as sales grew and inflation increased sales values.

Delivery cost analyses were not given priority attention during Cooperative Z's period of rapid growth, as evidenced by the fact the new management team just prior to merger made these analyses a top priority. In so doing, new management consolidated a large number of routes and greatly reduced truck fleet requirements and costs.

The large size and geographic scope of the cooperative's sales territory precluded any severe problem of sales account concentration. The four largest accounts amounted to 50 percent of total sales, with the largest single account at 15 percent. With extremely slim operating margins, however, the loss of the largest single account contributed to moving the cooperative into an operating loss.

Management gave priority attention to providing good customer service. Accounts receivable were never a serious problem. The cooperative would serve any account as desired, although high-cost accounts had products priced without a discount. However, lacking good distribution cost controls, there was always a question concerning route profitability.

Organization The cooperative had about 1,200 members in the early 1970's, dropping to 700 at the time of merger. Originally, a 15-person board was elected at large. Later, 15 equal-size districts were organized with a director from each district plus 3 at large. The average director served one or two 3-year terms. Considerable emphasis was placed on a strong member relations program, with a monthly newsletter and regular district or regional member information meetings.

The executive committee of the board was given considerable responsibility and met monthly, and later more often. The full board met quarterly until the late 1970's, when more frequent meetings became necessary.

As with most of the other cooperatives in this report, this was a "manager centered" organization. The board and executive committee rarely, if ever, questioned recommendations made by the manager, probably because of the many years of successful performance. Second level management did not meet with the board or executive committee. Considerable authority on day-to-day operations and planning was assigned to second and third level management, even perhaps as one individual reported "too much authority." The general manager, however, made major acquisition and certain other decisions with no lower level staff input. Also, little was expected in the way of cost reports from the management team.

Some years prior to Cooperative Z's merger, the management structure consisted of the president (general manager) and two vice presidents assigned to functional areas of operations and milk procurement. The milk procurement vice president supervised the field department and an economist. Operations included plants, sales, accounting, and convenience stores (a small wholly owned subsidiary).

Finance As did most of the other processing cooperatives in this study, Cooperative Z was initially able to finance its operations, growth, and expansion entirely from retained earnings, a strong attraction for membership during the early years of growth. In addition to current earnings, retained earnings were revolved in 7 to 10 years. By the mid-1970's, because of the acquisition program, it had to levy a 14-cent capital retain and stretch out the capital revolving period. In addition, long-term debt began to increase rapidly, both from banks and "member investment certificates." Prior to merger, interest costs on debt began to exceed operating earnings. With a bank imposed requirement to pay members no more than net earnings or to deduct losses from milk checks, the ability of the cooperative to maintain membership was strained.

Condensed statement of operations for 1973 and 1978 illustrates the financial strain that developed for Cooperative Z.

COOPERATIVE Z, STATEMENT OF OPERATIONS

	1973	1978
Net sales	\$77,664,286	\$115,642,424
Other income	520,470	1,293,680
Total revenue	\$ 78,184,756	\$116,936,104
Payment to members for milk	46,878,350	59,856,877
Cost of operations¹:		
Purchases	12,234,505	26,196,170
Direct labor and related costs	11,779,383	7,554,093
Other costs of products sold	2,270,010	4,095,319
Delivery and selling	793,033	14,165,375
General and administrative	2,344,653	4,179,642
Depreciation and amortization	1,095,366	1,433,303
Interest expense	462,100	979,586
Net loss in closing out operations	—	2,347,771
Net cost of operations	30,979,050	60,951,259
Distributable proceeds (loss)	327,356	(3,872,032)

ASSETS

Current assets:		
Cash and certificates of deposit	\$141,638	\$998,605
Accounts and notes receivable	8,890,720	11,565,454
Allowance for doubtful accounts	(173,430)	(528,459)
Inventories	3,236,879	4,746,096
Prepaid expenses	331,000	807,494
Total current assets	12,426,816	17,589,190
Investments:		
Stock and certificates	387,681	999,801
Cash value of life insurance and other assets	1,126,818	261,563
Total investments	1,514,499	1,261,364
Property, plant, and equipment	18,702,469	24,139,540
Less accumulated depreciation	(10,254,302)	(14,563,524)
Net	8,448,167	9,576,016
Leased assets	—	976,425
Less accumulated amortization	—	38,491
Net	—	937,934
Other assets, intangible	1,048,936	1,685,759
Total assets	23,438,418	31,050,263

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LIABILITIES AND EQUITY

Current liabilities:

Accounts payable members	2,790,116	5,306,445
Accounts payable trade	2,819,266	6,037,295
Long term debt due within 1 year	1,137,715	5,601,471
Accrued expenses	1,799,328	1,668,987
Other liabilities	205,936	132,829

Total current liabilities	8,752,361	18,747,027
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Long term liabilities and lease obligations	5,968,778	7,880,366
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Equity:

Capital stock	1,200	0
Certificates of indebtedness	5,390,965	3,142,883
Investment certificates	2,563,752	4,962,589
Capital retained	411,408	846,119
General reserves	22,598	58,727
Distributable proceeds	327,356	0
Unallocated losses	—	(4,587,448)

Total equity	8,717,279	4,422,870
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Total liabilities and equity	23,438,418	31,050,263
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¹Some cost items are not comparable between years because of changes in accounting methods.

POLICY PATTERNS

Size of Cooperative

It can be hypothesized that larger fluid processing cooperatives would have a better chance of success by accepting the conventional view of American industry. However, except for the larger Prairie Farms business volume, both successful and less successful cooperatives in this study were of similar size. Therefore, factors other than relative size contributed to their success. For example, Cooperative B was slightly smaller but outperformed the somewhat larger less successful cooperatives.

Economies of scale of individual plant operations are important in determining the potential level of unit processing costs. Successful Cooperatives A and C both operated a number of plants with lower volume throughput than most of the plants operated by Cooperatives X, Y, and Z. It appeared that operating "mother" and "white" plants in conjunction with each other and the level of labor-saving and quality-enhancing technology were more important than simply size.

Membership and Member Relations

Cooperative leaders often remark on the importance of maintaining ongoing and intensive member relations and education programs. These, it is said, are necessary to gain producer support for cooperative supply growth and the often expensive capital projects in fluid milk processing. It is difficult to believe otherwise in cooperative organizations. Firms in this study approached member relations quite differently. In the absence of measures of effectiveness, no conclusions can be drawn on the relationship of approach to business success. Consistently good financial performance tends to negate the immediate need for a strong member relations program but, nevertheless, producers still need to be aware of what their own business is planning and accomplishing.

Marketing Environment

This includes the environment for procurement of raw milk and for marketing of processed products.

Again, no discernible pattern surfaced between successful and less successful cooperatives. One successful cooperative procured raw milk from members in areas where there was little competition from alternative markets but two faced intense pressure from strong competitive cooperatives and buyers. The less successful cooperatives' members were all in competitive markets. Perhaps merely because success tends to create success, the successful cooperatives were able to develop more compact procurement areas nearer to their plants. It is conjectural whether this difference contributed significantly to lower procurement costs with a resulting better financial performance.

The economic and population growth of the six regions did not appear to have a bearing on the degree of success of the six cooperatives. Two of the successful cooperatives were in economically stagnant or declining areas while two of the less successful were in areas experiencing strong economic growth.

It would be useful to correlate the cooperative's level of success with the level and effectiveness of its direct competition. Other than relying on the traditional economist's measures of market share and concentration ratios, this is difficult. The fluid processing industry always has been intensely competitive. Participants in this study all described the high degree of competition. It is probably fair to conclude that all six cooperatives faced a similar high degree of direct competition during their growth years.

Plants

Cooperative leaders in the capital-intensive fluid processing industry are often confronted with the need to make major investment decisions concerning plants: remodel, build a new facility, or "let it go another year." "Letting it go" often allows a cooperative to pay out healthy operating margins to members but can inhibit future earnings capability. The plant decisions made by the six boards of directors over the years appear to have been critical to cooperative success or failure. Yet, no clear-cut decision pattern emerged between the two groups. Two of the successful cooperatives, A and C, opted to make only necessary and continual modernization investments in mostly old buildings. Only Cooperative B constructed a completely modern plant. Among the less successful cooperatives, Y and Z operated relatively new or modernized plants that had the potential to achieve competitive labor and utility input efficiencies. However, these latter two cooperatives made poorly planned investments or purchased additional businesses that could not pay their way. Losses from these capital investments became a drag on otherwise potentially profitable operations.

Cooperative success appeared to be rooted in continuing timely and carefully planned investment decisions to make significant changes in plant operations in response to changes in market structure and available technology.

Management (Directors and Hired Management)

No clear pattern surfaced between the two groups on structure or tenure of boards or tenure of management. Both groups had both large and small boards and most tended to have a history of long tenure.

Board and hired management relationships varied within each group. Cooperative A and B could be considered "manager dominated." C's manager and management team always worked closely with directors. Cooperative X's manager and his team also worked closely with directors, while Y and Z were generally more "manager dominated."

More important than board-manager relations was the way the managers and their management teams approached the task of capital investment decisions. Managers of the successful cooperatives had detailed and extensive analysis made of each proposal. They often employed extensive outside advice. When projects were determined as feasible, they went to their boards for approval. Whether the boards "rubber stamped" hired

management recommendations or exhaustively debated proposals seems irrelevant. The boards of successful cooperatives were presented with well-studied proposals.

By contrast, managers of two of the less successful cooperatives, Y and Z, appear to have made numerous capital investment decisions with a lack of adequate analysis as to their worth. The boards of these cooperatives tended to approve projects recommended by the manager, although they were not always given adequate supporting analyses. They can be faulted for not exercising adequate oversight responsibility. Both the board and manager of Cooperative X insisted on thorough analyses of projects but had difficulty in making a decision. It appears, in retrospect, that both the board and manager may have been overly conservative on investment decisions designed to keep the cooperative competitive.

It is significant to consider the pattern of changes that occurred when the cooperatives changed general managers. Successful Cooperative B and less successful Cooperatives Y and Z changed managers in the mid-1960's on the death or retirement of predecessors with long periods of service.

Cooperative B's new manager carefully followed his predecessor's methods and strategies. By contrast, new managers of Cooperative Y and Z instituted new growth strategies that within 5 years adversely affected their cooperatives' financial strength. Even from this admittedly limited observation, boards might consider extra precautions during periods of leadership transition concerning policies of growth and investment.

Financial Strategy

The ability of a processing cooperative to grow and respond to changes in market structure depends on its past record of financial strength, measured largely by its equity position and consequent credit rating. Equity levels and credit worthiness depend on past earnings and how those earnings were used.

Agricultural cooperatives have a fundamental problem. As user owned and controlled businesses, they exist only to enhance the extent and security of members' farm income. Earnings are allocated to member-patrons. Yet, if the cooperative is to grow and respond to market changes, some or even most of the earnings must be "plowed back" into the cooperative to guarantee or enhance future earnings.

The successful cooperatives differed from the less successful in several respects. Cooperatives A, B, and C minimized the use of debt financing,

and between years of heavy capital investment, worked to reduce or eliminate long-term debt. This policy differed somewhat from the conventional corporate wisdom of the 1960's and 1970's to utilize debt leverage to a maximum safe extent.

Cooperative B, in particular, deliberately built a strong equity position anticipating large future capital requirements. Cooperative C has embarked on a strong base capital equity building program that was difficult to sell to producers undergoing a cost-price squeeze on their farms.

By contrast, the less successful cooperatives were unable to adequately or rapidly respond to required major capital investments dictated by market competition. In the case of Cooperative X, it was feared a heavy capital retain program needed to finance a new plant would erode membership. In Cooperative Y's case, member-patrons never had been required to finance their own business and finally debt service requirements foreclosed new investments. Cooperative Z dissipated a strong equity base on purchases of sales rather than investing in cost reduction projects.

Table 3 illustrates selected financial ratios that contrast the two groups. In some past years, a particular cooperative may have been more or less financially strong than shown.

As noted earlier, financial data were reviewed for recent years for Cooperatives A, B, and C and for the year of greatest loss for X, Y, and Z. Differences between the two groups are strong when comparing current ratios, equity as a percentage of total assets, and the long-term debt-to-equity ratios. These are measures of particular interest to lending institutions and illustrate well why the less successful cooperatives were all required to either liquidate or reorganize. The three successful cooperatives at the time of this analysis were all operating as valuable extensions of members' farm businesses.

Table 3—Six fluid milk processing cooperatives' selected financial measures

Financial measure ¹	Three successful co-ops			Three less successful co-ops		
	A	B	C	X	Y	Z
Current ratio ²	1.61	1.70	1.18	0.81	0.70	0.94
Equity percent of total assets ³	45.9	52.8	44.6	19.5	8.0	14.2
Dollars of sales per dollar of total asset	4.53	3.31	5.19	5.16	2.41	3.77
Dollars of sales per dollar of fixed assets ⁴	11.94	14.72	18.55	5.28.50	3.52	11.12
Long-term debt to equity ratio	.33	.25	.09	2.64	7.66	1.78
Total sales (\$1,000)	206,320	62,466	117,326	546,632	80,196	116,936

¹Represents different years among the cooperatives.

²Current assets divided by current liabilities.

³Equity" may include some debt paper held by producers.

⁴Includes leased assets less accumulated amortization.

⁵Five-month operating statement used. Sales for a full year are estimated and include raw milk sales.

U.S. Department of Agriculture Agricultural Cooperative Service

Agricultural Cooperative Service provides research, management, and educational assistance to cooperatives to strengthen the economic position of farmers and other rural residents. It works directly with cooperative leaders and Federal and State agencies to improve organization, leadership, and operation of cooperatives and to give guidance to further development.

The agency (1) helps farmers and other rural residents obtain supplies and services at lower costs and to get better prices for products they sell; (2) advises rural residents on developing existing resources through cooperative action to enhance rural living; (3) helps cooperatives improve services and operating efficiency; (4) informs members, directors, employees, and the public on how cooperatives work and benefit their members and their communities; and (5) encourages international cooperative programs.

The agency publishes research and educational materials, and issues *Farmer Cooperatives*. All programs and activities are conducted on a nondiscriminatory basis, without regard to race, creed, color, sex, or national origin.