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Financial Statistics of the Largest Dairy Cooperatives, 1980–1995

Abstract

Farmer cooperatives are a major force in the U.S. dairy industry. Their share of U.S. milk marketings rose from 53 percent in 1950 to 88 percent by 1995. Dairy cooperatives held an estimated $5.4 billion in assets in 1995. Members owned about 37 percent of the assets and creditors financed the balance with either short- or long-term debt. Hence, the financial status of dairy cooperatives is vital to not only cooperative member-owners and management but also to creditors. This study presents a compilation of financial data obtained from the annual reports of the nation's largest dairy cooperatives between 1980 and 1995. Financial data and ratios are presented for the group as a whole. The data and derived information can be used by cooperative management and creditors to gauge the financial health of an individual dairy cooperative compared with the large cooperative dairy industry.

Key Words: Cooperatives, dairy cooperatives, financial performance, ratio analysis, balance sheet, income statement.

Financial Statistics of the Largest Dairy Cooperatives, 1980 - 1995

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Preface

This publication profiles the balance sheet, operating statement and key financial ratios for the largest U.S. dairy cooperatives between 1980 and 1995. Annual financial data from individual balance sheets and income statements of the largest U.S. dairy cooperatives are consolidated by year. Ratios were derived from the financial statements of an individual cooperative and averaged by year.

Balance sheets and operating statements were common sized for analysis. Financial ratio analysis examines liquidity, capital structure, solvency, asset utilization, operating performance, leverage, return-on-equity and selected hundredweight (cwt.) ratios. Dairy cooperative management can use the financial measures as benchmarks to assess individual cooperative performance against that of the largest dairy cooperatives in a study year.

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Highlights

Assets for the average large dairy cooperative grew 5.1 percent annually between 1980 and 1995. But, the relative composition of assets changed during the 16-year study period. The current assets share of the balance sheet declined along with its largest component, accounts receivable. Inventories, the second largest current asset, went through a series of limited contractions and expansions. Investments in other firms expanded in the 1990s. Property, plant and equipment averaged 31.6 percent of total assets and grew 5.4 percent annually.

Equity financed 37 percent of total assets while current liabilities supported 46.6 percent and long-term debt 16.4 percent. Current liabilities were the largest financial resource, with equity supporting a growing share. Amounts due members was the largest account among current liabilities, averaging 20.8 percent of assets. The percentage of long-term debt on the balance sheet showed little variation during the study period. But, equity financing increased, growing from 1980's low of 32 percent to a high of 38.9 percent by 1993. Equity played a more substantial financial role in dairy cooperatives, with positive unallocated reserves averaging 41.8 percent of assets.

Total sales and revenues for the average large dairy cooperative climbed 3.1 percent annually. Cost of goods sold annually amounted to 91.8 percent of total sales and, as a percent of total sales, was fairly consistent with only small annual variations. Yet, during a few of the study years, a small increase in the cost of goods sold without a corresponding increase in sales squeezed margins throughout the operating statement, resulting in extremely low profits and major losses for some cooperatives. But, cost of goods sold was not the only factor to determine success or failure in a given year.

Gross margins averaged 8.2 percent of total sales, with little variation. Surprisingly, when gross margins were at their lowest levels in the early 1980s, operating margins were at or above average. But, in the early 1990s, while gross margins were at or near average levels, operating margins were at study lows. Other items on the income statement also had substantial effects on profitability outcomes.

Operating margins declined when administrative and selling expenses and/or operating expenses could not be contained. In 1990, high cost of goods sold coupled with growing administrative and selling expenses resulted in the lowest operating margin of the study period. In 1991, although cost of goods sold was slightly less than average, both administrative and selling expenses and operating expenses were above the norm, reducing operating margins to near the study low.

While every item on the operating statement plays a role in profitability, high administrative and selling expenses as a percent of total sales seemed to be a common factor in years of low profitability. However, interest expenses and other income and expense items also affected annual outcomes.

Net margins from operations averaged 1.06 percent of sales, reaching highs in the mid to late 1980s and again in the mid-1990s. The highs in the late 1980s came about when cost of goods sold, as a percent of total sales, was at its lowest levels and administrative and selling expenses were just beginning to escalate.

Net margins after taxes averaged nearly 1 percent of sales but higher levels occurred in the late 1980s. But, after-tax net margins were at their lowest levels in the early 1990s when extraordinary expenses reduced profits further.

Highlights

Dairy cooperatives distributed 29 percent of net margins back to members as cash patronage refunds. Losses were typically absorbed by unallocated reserves. Total patronage refunds, cash plus non-cash, averaged 74 percent of net margins.

Return on equity (ROE) averaged 15.4 percent of sales but ROE before interest and taxes averaged 20.1 percent, up nearly 5 percent. Returns slumped dramatically in the early 1990s as net incomes for many cooperatives dropped and some cooperatives reported major financial losses. Setbacks in 1991 were severe. The average return on equity slumped to the study low of 5.8 percent. However, returns improved between 1992 and 1995, with ROE ratios growing in most years. The greater returns on equity in the early 1980s reflected the influence of the higher financial leverage multipliers of the period.

The leverage multiplier, total assets divided by equity, averaged 2.8 with the highest numbers occurring in the early 1980s. The high multipliers combined with elevated returns on total assets to bring about the highest returns on equity. But, the high interest rates and debt levels of the early 1980s also created a much riskier operating environment. In response to higher interest rates, many dairy cooperatives increased equity financing. And, as equity gained a larger share of the balance sheet, the financial leverage multiplier declined through 1986. However, for the dairy cooperatives as a group, there was not much change between 1986 and 1994.

Return on total assets (ROTA) averaged nearly 6.3 percent. And, the ROTA measure before interest and taxes was higher, nearly 8 percent. Returns were higher in the 1980s, with the highest occurring in the early 1980s. The ROTA measures in the 1990s have a way to go to get back to the levels seen in the 1980s.

Profit margins averaged 1.6 percent of sales and were at their highest in the late 1980s. Declines in administrative and selling expenses, and operating expenses brought margin improvements in the 1990s. For instance, operating margins were higher, averaging 1.5 percent of sales.

Total asset turnover dropped from 5.5 turns in 1981 to 4.4 by 1986 and remained low through the balance of the study period. This slowdown in asset turnover inhibited improvements in ROTA and ROE during the first half of the 1990s.

Sluggish sales growth coupled with additions to property, plant and equipment (PP&E) slowed the fixed asset turnover rate in the 1980s. The turnover rate declined from the high of 20 times in 1980 to the low of 14.2 by 1989. Some recovery was evident in the 1990s as sales growth outpaced additions to PP&E. Moreover, fixed asset turnover during the closing years of the study averaged 16.3 times, showing some improvement over the 14.6 average for the 1988-91 period.

Inventory turnover averaged 46 times per year, but there was a large contrast between the higher rates of the mid-l 980s and the slower turnovers in the first half of the 1990s. Inventory turnover rates peaked in the 1980s, averaging nearly 50 times through 1988, but, the slowdown that began in 1989 continued through 1993. Inventory turnover declined to the study low of 35 times, but modestly improved in the closing years of the study. The accounts receivable turnover rate was fairly consistent, averaging almost 15 turns per year.

A slowdown in fixed asset and inventory turnover rates reflected the overall slump in total asset turnover. And, although fixed asset turnover showed some signs of improving in the first half of the 1990s, inventory turnover remained slow and appeared to be a challenge for the second half of the 1990s.

The capitalization and solvency ratios show improving strength in member financing and indicate resilience in long-term solvency despite the profitability challenges of the study period. While the financial structure of the larger dairy cooperatives appears to be strong in the long run, an examination of liquidity suggests some short-term challenges.

Between 1982 and 1989, dairy cooperatives carried a quick ratio at or slightly above 1, indicating the ability to maintain short-term liquidity. However, in the 1990s the ratio began to fall. A drop in receivables as a percent of total assets, coupled with a decline in cash accounts, contributed to the quick ratio slipping below 1. Hence, short-term liquidity is becoming more dependent on inventory turnover and the quality of accounts receivable.

The current ratio averaged 1.4 and did not dip below 1 at any time during the study period. The lowest measure of 1.2 occurred in 1980 and grew quickly to 1.4 by 1982 as current liabilities declined faster than current assets. The measure hovered around 1.4 through much of the study but dropped in 1994 and 1995 when receivables and inventories declined. If trends in the quick and current ratios are considered together, it becomes apparent that inventory turnover is critical to maintaining short-term liquidity. But, inventory turnover slowed in the early 1990s.

The per-cwt ratios provide mixed signals. The net-income-per-cwt measure shows signs of sluggish recovery following 1991's low. However, sales per cwt is declining as growing milk production is processed into lower-value products, depressing milk prices and sales. The equity- per-cwt measures were relatively stable, with some limited growth in the 1990s as equity increased in response to market risk. The debt-per-cwt measure also declined as cooperatives shifted to more member financing in lieu of outside debt capital. After a decline, the assets-per-cwt measure stabilized in the 1990s.

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Overview

Every industry is confronted by a business atmosphere that affects financial performance. Since the early 1980s, the Federal dairy price support program has become more market oriented. Market forces instead of Federal support prices now play a key role in determining dairy prices and, ultimately, the mail box price for milk. Milk and dairy product prices have become more variable, resulting in fluctuating inventory values, just one of many factors that influence profitability.

The boards and managers of cooperatives respond to the stress of business cycles and member demands in different ways when making milk payment decisions and annual allocations of net income. These events make it difficult for the management of an individual dairy cooperative to gauge financial performance compared with the entire dairy industry. Yet, managers and directors want information that adequately represents the financial performance of the cooperative dairy industry and that can be used as a yardstick for measuring their own performance against that of the industry.

Although the number of milk marketing cooperatives in the United States is on the decline, their physical size and share of all milk marketed off U.S. dairy farms is growing (table 1). Dairy cooperatives' share of milk marketed from U.S. dairy farms rose from 1980's estimated 71 percent to 88 percent in 1995—up 1 percent during each year of this study.

In 1995, dairy cooperatives held about $5.36 billion in assets, 53 percent more than $3.5 billion in 1981. Members owned about 37 percent or $2.0 billion. Member equity grew from a low of 33.4 percent in 1981 to a high of 39.4 percent in 1986 before declining to 37.6 percent in both 1992 and 1995. And, equity ownership remained fairly strong, in the 37- to 39-percent range, through the early 1990s. The financial performance of U.S. dairy cooperatives is vital not only to cooperative member-owners and management but also to creditors. Yet, it is difficult to gauge financial performance compared with that of others in the dairy industry.

Because of their organizational nature, cooperatives may have differing performance goals and overall missions than investor-owned firms (IOFs). IOFs are primarily driven by stockholder investors seeking to maximize returns on investment, while cooperative management and members often place the value of service to member-owners first. Establishing an assured market for their farm produce or a place to buy farm supplies at a competitive price is often the more important goal of cooperative members. Return on member equity as measured in the traditional sense is not the highest priority. Hence, cooperative managers focus not only on the bottom line but also on service to members. Consequently, comparing dairy cooperative financial data to that of investor-owned dairy firms may be only of limited value.

Dairy cooperatives need a more appropriate basis upon which to evaluate or compare financial performance to firms with similar missions-other dairy cooperatives. While financial reports were not available for all U.S. dairy cooperatives in every year, annual data was available for many of the larger dairy cooperatives.

The dairy cooperatives included in the RBS largest cooperatives database represent about two-thirds of the assets, dairy sales, and member equity found in all U.S. dairy cooperatives during the period 1980-95. This report compiles annual financial data from the balance

Table I- Number of dairy co-ops, milk sales, equity, and share of milk marketed off farm, selected years.

Year	Dairy co-ops	Net milk sales	Gross milk sales	Assets	Net worth	Share of Market Activity
	Number	$1,000				Percent
1950	2,008	N/A	2,032,000	N/A	N/A	N/A
1955	1,826	2,431,522	2,909,594	N/A	N/A	N/A
1960	1,541	3,055,521	3,679,523	N/A	NIA	NIA
1965	1,286	3,769,721	4,897,604	N/A	NIA	NIA
1970	956	5,126,314	6,062,368	N/A	NIA	NIA
1975	656	7,851,029	8,822,593	N/A	N/A	N/A
1980	465	13,666,105	15,137,380	N/A	N/A	71
1981	446	15,051,776	16,572,275	3,496,721	1,168,636	72
1982	427	15,776,154	17,976,595	3,831,590	1,333,491	77
1983	401	16,765,593	19,067,092	3,925,897	1,380,812	77
1984	384	16,707,616	18,757,254	4,086,384	1,492,873	78
1985	383	15,959,869	18,504,648	4,079,322	1,558,511	78
1986	345	14,821,044	16,477,608	3,942,169	1,552,468	78
1987	298	16,548,290	18,115,112	4,104,300	1,578,200	76
1988	287	17,792,748	19,320,221	4,219,600	1,634,200	76
1989	259	18,339,045	19,850,349	4,443,700	1,689,400	80
1990	264	20,719,087	21,930,190	4,426,200	1,679,600	81
1991	264	18,819,073	19,719,306	4,376,300	1,700,500	81
1992	265	20,238,617	22,204,390	4,528,300	1,701,600	82
1993	258	20,510,188	22,680,477	4,547,900	1,735,800	86
1994	247	21,502,540	23,139,135	4,960,900	1,834,500	86
1995	241	21,783,809	23,668,484	5,359,900	2,013,500	88

Source:USDA, RBS, Statistics Staff

sheets and income statements of these dairy cooperatives and should be representative of all dairy cooperatives.

Key financial ratios were calculated from the financial data of the individual cooperatives' annual statements. The ratios were averaged to develop a representative financial performance ratio for use by dairy cooperative management and others as competitive yardsticks in gauging their individual performance during the 16-year span.

This report focuses on financial performance measures for dairy cooperatives with a significant amount of member equity at risk. Consequently, one functional type of dairy cooperative was not included in the data group-the bargaining cooperative. Cooperatives that were primarily bargaining in nature or that reported significant sales from non-dairy operations were also excluded.

The exact number of dairy cooperatives included each year depended on the availability of annual data. Consequently, the number of cooperatives used in the yearly calculations varied between 26 and 30. In some cases, a cooperative failed to provide a financial report or was involved in merger or dissolution and no longer produced an individual report. In 1995, the mix of cooperatives among the largest dairy firms changed because of earlier mergers, divestitures and dissolutions. The data reflects the impact.

Total Assets

In 1980, total assets of the 24 largest dairy cooperatives approached $1.57 billion. By 1995, 27 cooperatives reported assets of nearly $3.64 billion. Assets averaged a 5.1-percent annual growth rate. The composition of the assets also shifted during the 16-year study period.

Current assets annually account for the largest share of total assets, averaging nearly 60 percent. But, percent current assets declined through most of the study period, from 63.2 percent to 56 percent (figure 1). Accounts receivable were the largest component, averaging 34.5 percent of total assets. And, receivables declined from a study high of 40.2 percent in 1981 to 31 percent in 1991 before expanding slightly to 33.2 percent by 1994, and closing the study at 32.5 percent in 1995.

Inventories, the second largest current asset, averaged 17 percent of total assets. And, as a percent of total assets, inventories went through a series of limited contractions and expansions (figure 2). The low of

Figure 1- Current Assets as a Percent of Total Assets, 1980-95

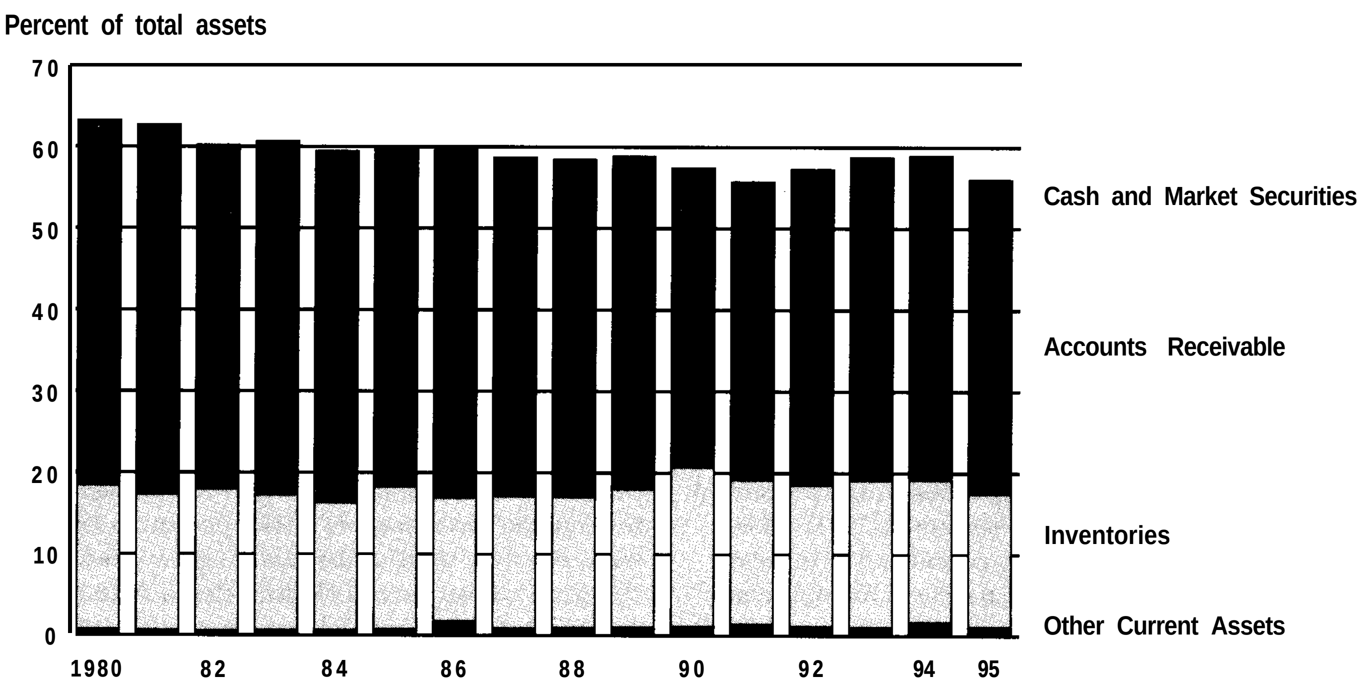
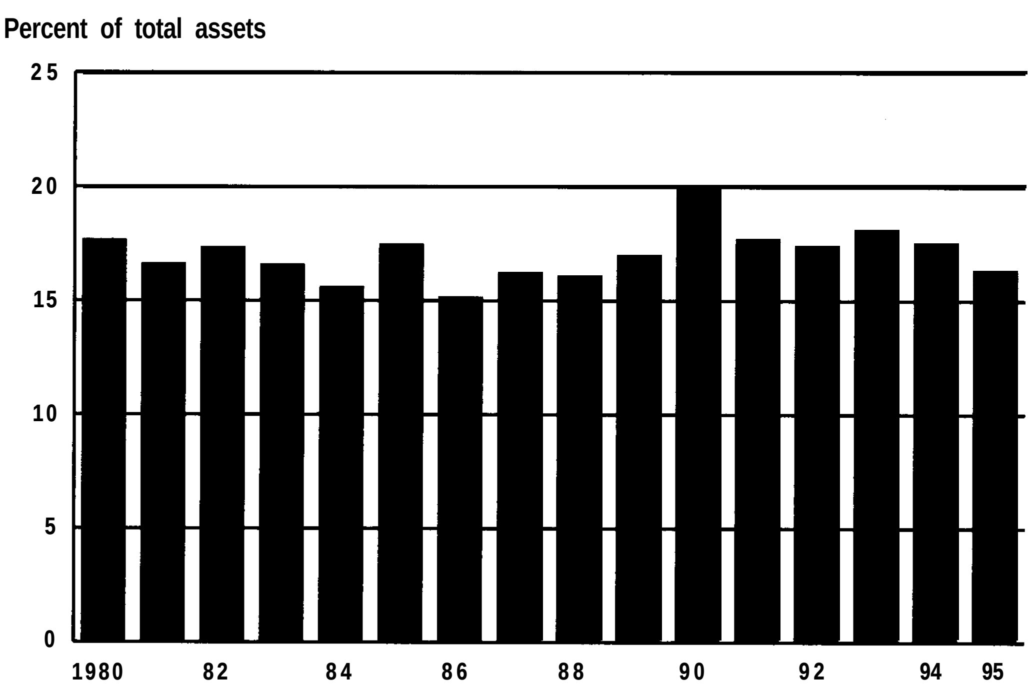


Figure 2— Inventories as a Percent of Total Assets, 1980-95



15.2 percent occurred in 1986 and the high of 19.5 percent, just four years later in 1990. Inventory changes reflected market conditions and the fluctuating prices of milk and milk products (cheese and non-fat dry milk). And, at times, changing inventory evaluations created significant challenges to the dairy industry.

Investments in other firms grew from 5.5 percent to 10.5 percent of total assets. However, expansion was primarily a trend of the 1990s (figure 3). Although investments demonstrated some growth in the early 1980s, they hovered around 6 percent of total assets for the balance of the decade. Investments share of total assets did not expand until the 1990s, jumped to 7.1 percent in 1993, and advanced to nearly 10.7 percent in 1995. Overall, additions to investments in the Banks for Cooperatives averaged about 8.1 percent a year. However, investments in other cooperatives with 20 percent or more ownership grew at a 29-percent rate during the study period and drove the investments late in the period.

PP&E share of the balance sheet grew slowly during the 1980s. Fixed assets expanded from 28.8 percent of total assets in 1980 to 33.9 percent by 1991, before contracting to close the study period at 30.3 percent (figure 4). PP&E averaged 31.6 percent of total assets and grew 5.4 percent annually. During the mid-1990s, the dairy cooperatives sold off unwanted assets, merged and restructured.

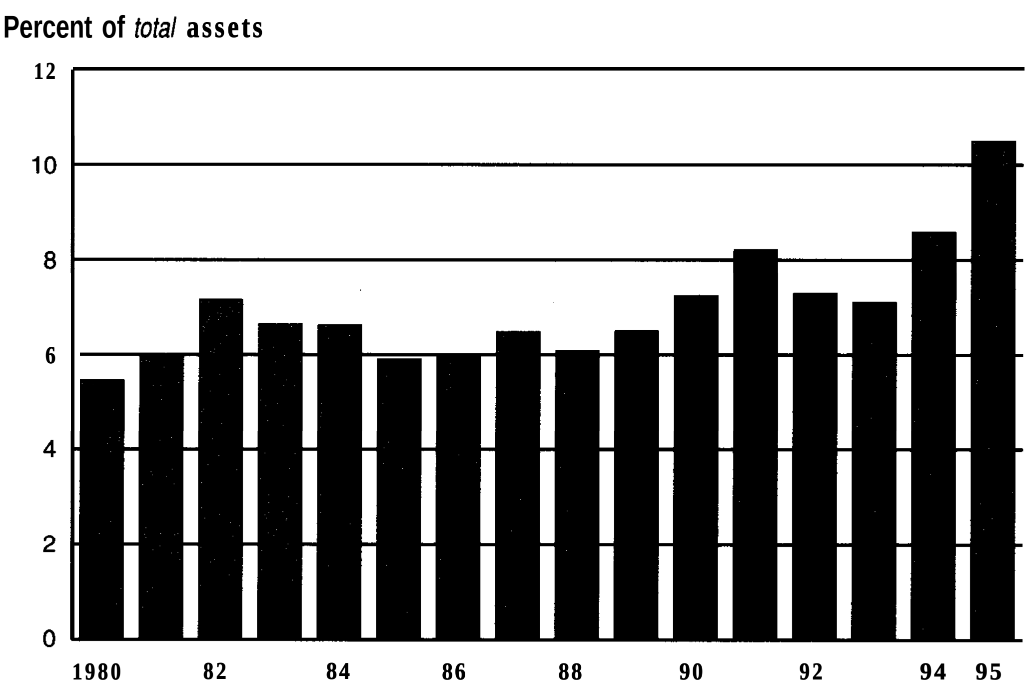
Financial Structure

Although current liabilities finance the largest portion of total assets, equity's role grew in most years of the study. Member ownership strengthened in the early 1980s and remained in the 37 to 38 percent range for the balance of the study. Equity financed an average 37 percent of total assets while current liabilities supported 46.6 percent and long-term debt 16.4 percent.

Like current assets, the current liabilities share of total assets declined in the 1980s before expanding in the 1990s (figure 5). Current liabilities declined from 52.2 percent of total assets in 1980 to 42.8 percent in 1991 before expanding to 49.2 percent by 1994 and closing the study period at 46.2 percent.

Among the current liability accounts, short-term debt averaged 6.6 percent of total assets with little annual variation. Although trade accounts payable averaged 15 percent, it began the study period at 15.7 percent and, for the most part, slowly declined through the 1980s to a low of 13.7 percent in 1989. But, trade-payables share of the balance grew quickly in the 1990s to 17.3 percent in 1994, and closed at 16.3 percent in 1995. Did cash-flow problems cause a slowdown of

Figure 3— Investments as a Percent of Total Assets, 1980-95



payments? Or, was cooperative management slowing trade payments in lieu of enhancing payments to members?

For most of the study period, amounts due members was the largest account among current liabilities, averaging 20.8 percent of assets. Notably, the percentage declined during the study period (figure 6). The

Figure 4— Property, Plant, and Equipment as a Percent of Total Assets, 1980-95

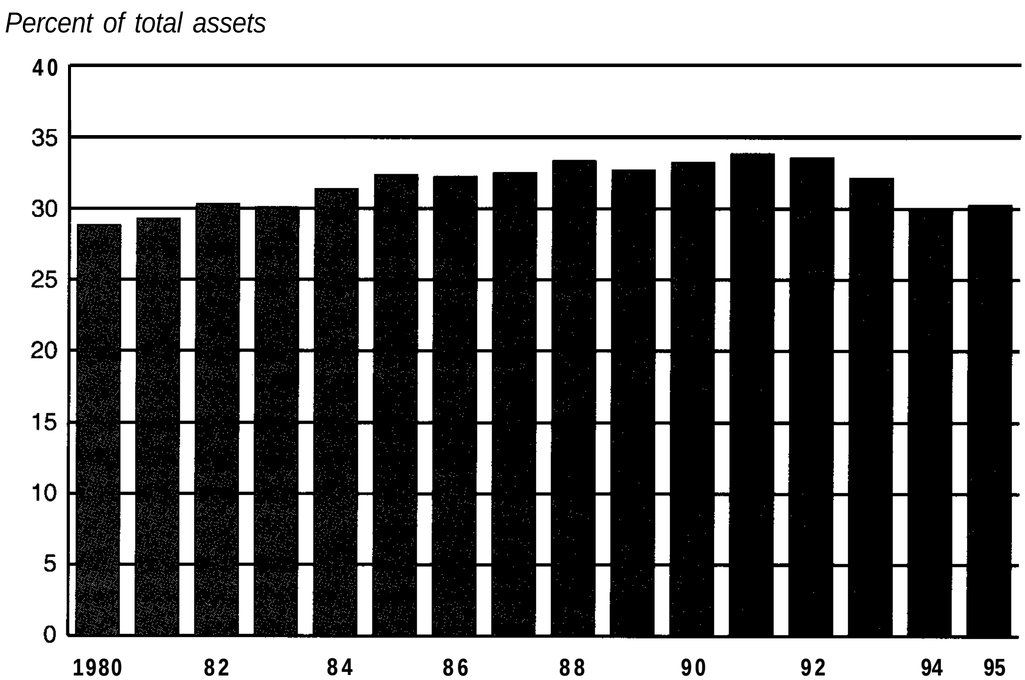
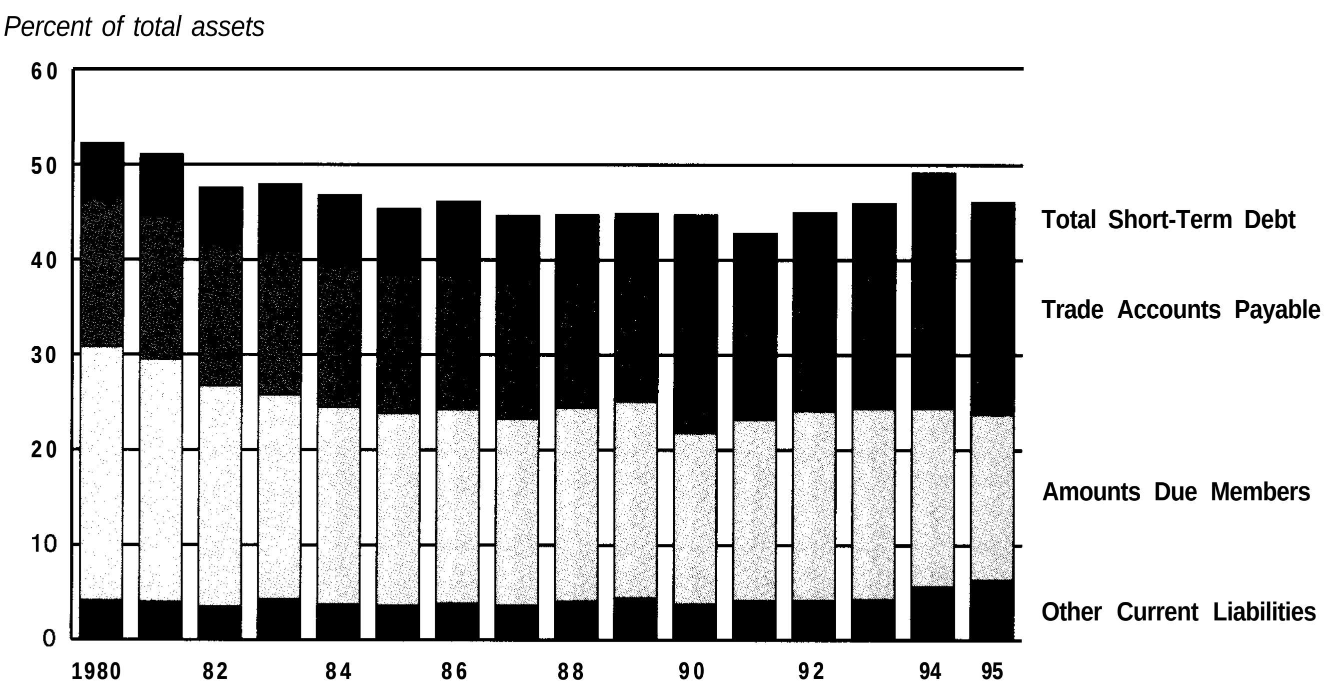


Figure 5— Current Liabilities as a Percent of Total Assets, 1980-95



26.7 percent share that member liabilities had in 1980 declined to 18 percent by 1990. Although there was a temporary expansion to 20.1 percent in 1993, member payables dropped to 17.4 percent of total assets in 1995. By 1995, member and trade payables share of the balance sheet were almost the same, differing by only 1.1 percent.

Member payables are an aggregate of cash patronage refunds, equity redemption, cash dividends on stock, milk payments and any other payables to members as designated in annual reports. Hence, the decline in member payables may be attributable to a variety of factors. However, the percentage decline in member payables compared with trade payables and the other current liabilities seems to indicate cooperatives are putting priority on payments to members.

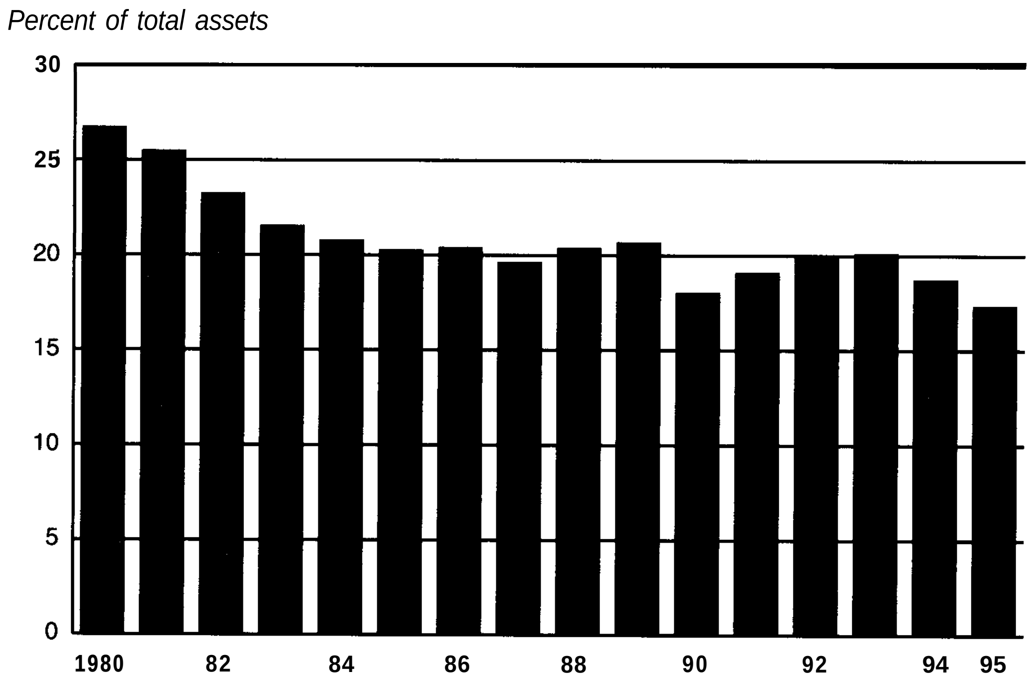
The percentage of long-term debt on the balance sheet varied slightly, averaging 15.7 percent of assets and topping at 17.5 percent in 1982 and 1991. Debt declined quickly in the 1990s, falling from the high in 1991 to 11 percent by 1994 but closed the study in 1995 at 14.2 percent. The 1995 measure reflects the makeup of the new cooperative additions rather than significant changes in the long-standing financial structure.

Equity financing grew from 32 percent in 1980 to 38.9 percent by 1993 (figure 7). Preferred stock averaged about 1.7 percent of total assets annually. Common stock was not a factor in financing dairy cooperative operations, averaging only 0.02 percent of assets. Allocated retained equity, the primary source of member financing, averaged 31.9 percent of assets. Allocated equities grew from 28.5 percent of assets in 1980 to nearly 33.9 percent in 1991, before sliding to 30 percent in 1995 when several new cooperatives qualified as the largest dairy cooperatives while others merged or otherwise restructured.

Consolidated unallocated equity includes both the positive unallocated reserves carried by most of the large dairy cooperatives as well as the negative unallocated reserves carried by a few. Except for 1995, consolidated unallocated equity grew from 2.1 percent of assets in 1980 to 4.3 percent by 1993. However, unallocated equities plummeted to 2.8 percent of total assets in 1990 as some cooperatives reported major losses adding to negative unallocated reserves. However, if only positive unallocated reserves are considered, the study average jumps to 6 percent of total assets, with a 4 to 8 percent range. Although only a few dairy cooperatives carried accumulated losses as negative unallocated reserves, the size of those reserves was significant in some instances.

Equity played an even more substantial financial role in the vast majority of dairy cooperatives with positive unallocated reserves. In this group, equity averaged 41.8 percent of assets, rising from 35.9 percent in 1981 to 44.6 percent in 1994.

Figure 6— **Amounts Due Members as a Percent of Total Assets, 1980-95**



Income Statement

In the cooperative dairy marketing industry, the difference between profit and loss is often less than 1 percent of sales. Hence, even a small percentage change in any item on the income statement can have dramatic effects. Also, a rise in sales does not necessarily mean increased profit margin if cost of goods sold goes up. Yet, a drop in sales often squeezes margins if cost of goods sold is valued on higher pay prices. Hence, the squeeze on margins often begins early in the income statement where cooperative management has little control.

The cost of goods sold is affected by factors beyond the Federal support price for milk. Market competition often dictates the final milk box price paid to dairy farmers. For instance, cooperatives often pay premiums for milk. This raises the costs of goods sold and causes lower margins. Consequently, year-end patronage refunds to the farmer are less because the patronage was paid up front in the form of premiums. So, the ultimate measure of their dairy cooperative's value is the total amount the farmer receives for milk marketed through the cooperative.

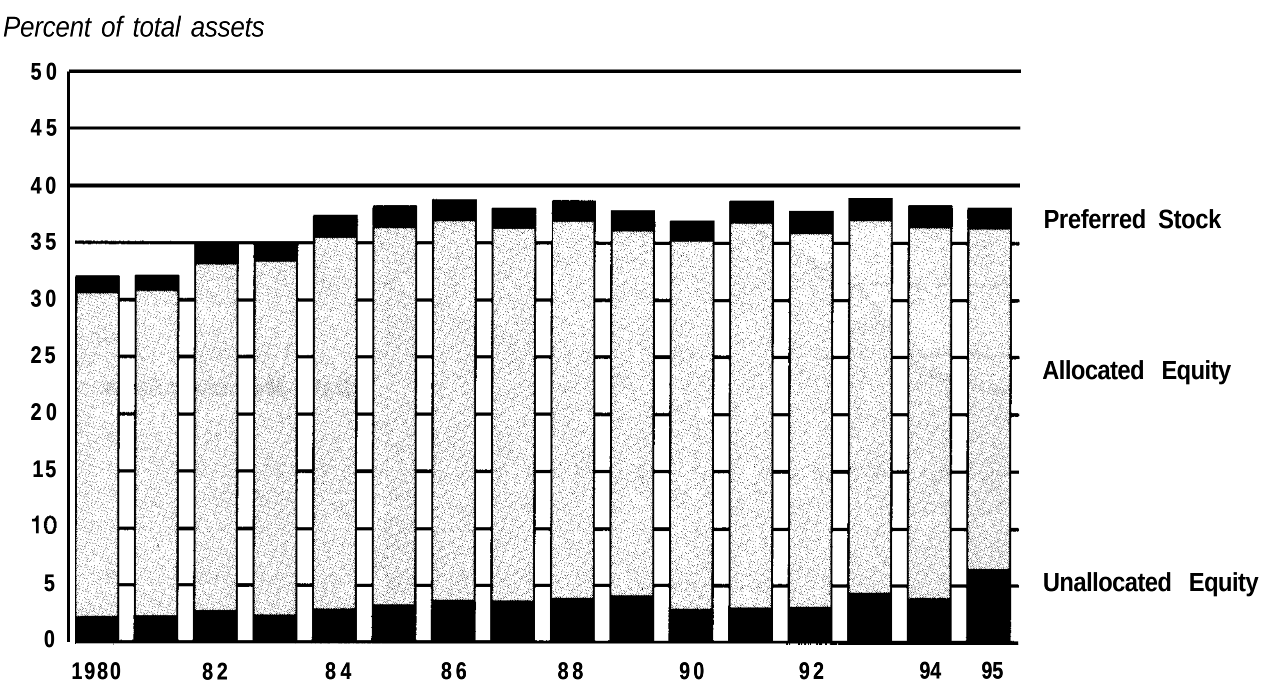
But, how do cooperatives improve their operating performance? The subsequent discussion indicates cooperatives may best enhance operations by focusing on internal cost-control efforts. See financial data related to this discussion in the appendix tables.

Total sales and revenues for the 24 dairy cooperatives ranked among the largest 100 cooperatives in 1980 equaled $8.8 billion. In 1995, the 27 dairy cooperatives in that largest group had sales and revenues approaching $15.4 billion. During the 16-year study period, total revenues for the average large dairy cooperative grew at a 3.1 percent annual rate (figure 8). Dairy marketing sales annually amount to 98.4 percent of the total revenues while sales of supplies and other revenue items contribute 0.8 percent each.

In 1990, revenues of 29 cooperatives totaled $14.6 billion but plummeted to $13.3 billion in 1991. It took another 4 years before consolidated dairy sales surpassed the 1990 mark, albeit with fewer cooperatives. The first half of the 1990s challenged the largest dairy cooperatives and the entire dairy industry for a variety of reasons.

Cost of goods sold annually amounted to about 91.8 percent of total sales. Costs peaked at 92.2 percent in 1981 and bottomed at 91.2 percent in 1986. However, during a couple years, an increase in cost of goods sold without a corresponding increase in sales put a squeeze on margins which rippled down through the operating statement. Profits were either extremely low or major losses occurred.

Figure 7— **Equity as a Percent of Total Assets, 1980-95**



But, cost of goods sold was not the only factor to determine success or failure in a given year. For instance, while cost of sales were about average in the early 1980s, most cooperatives reported profits. Yet, in the 1990s, net margins were the lowest of the study period even though cost of sales were at an average level. So, other items on the operating statement were also responsible for dramatically different profitability outcomes.

Gross margins averaged 8.2 percent of total sales with little variance between the 1981 low of 7.8 percent and the 1986 high of nearly 8.8 percent (figure 9). Although gross margins were at their lowest levels in the early 1980s, operating margins were average most years. Yet, in the early 1990s, while gross margins were near average, operating margins were lowest.

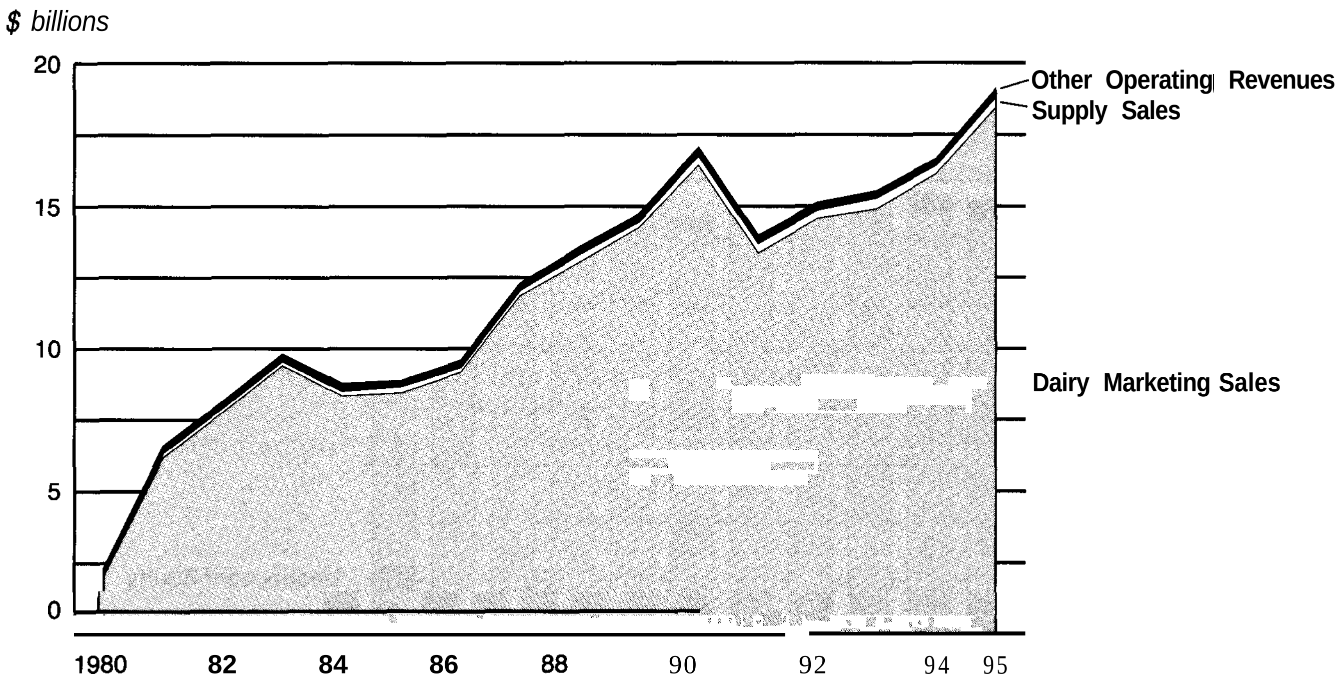
As a percent of sales, administrative and selling expenses (A&S) held relatively firm between 1980 and 1985 but expanded during the balance of the 1980s and into the very early 1990s (figure 10). In the early 1980s, A&S expenses averaged 4.1 percent of sales, grew to 4.4 percent by the late 1980s and 4.6 percent in 1990 and 1991. Although the expansion seems small, growing A&S expenses helped to lower slim operating margins significantly in those years. And, when A&S expenses declined between 1992 and 1995, operating margins improved.

On the other hand, operating expenses were fairly consistent, ranging from 2.6 percent in 1982 to 3.1 in 1986 and 1993. In most years, however, operating expenses played only a minor role in overall profitability.

In 1990, the high cost of goods sold coupled with growing A&S expenses cut operating margins to a study low of 0.75 percent of sales. In 1991, although cost of goods sold was slightly less than average, both A&S and operating expenses were above the norm, slicing operating margins to 0.92 percent of sales. Low operating margins in 1992 primarily resulted from high A&S expenses, 4.5 percent, as cost of goods sold and operating expenses were at study averages of 91.8 and 2.8 percent, respectively. Administrative and selling expenses and, to a lesser degree, operating expenses seem to be the major profitability factors in any given year. Yet, every item on the operating statement plays a role.

Interest expense averaged 0.34 percent of sales with high levels occurring early in both the 1980s and 1990s (figure 11). In 1984, interest expense peaked at 0.42 percent of sales but dropped to 0.26 percent in 1994. During the first half of the 1980s, interest expense was driven by both high debt and high interest rates. Interest expense declined in the later 1980s but rose along with growing debt levels between 1989 and 1991. Declining debt and interest rates in the closing years of the study helped lower interest expense

Figure 8— Consolidated Sales and Revenues for Largest Dairy Cooperatives, 1980-95



below the study average. But, at this point of the income statement, interest expense can take a fairly good bite out of operating margins that only average 1.17 percent of sales.

In the consolidated format, other income (expense) items as a percent of total sales made positive contributions to profits in each year of the study. However, caution is urged in making interpretations with this

Figure 9— Operating Margins as a Percent of Total Sales for the Largest Dairy Cooperatives, 1980-95

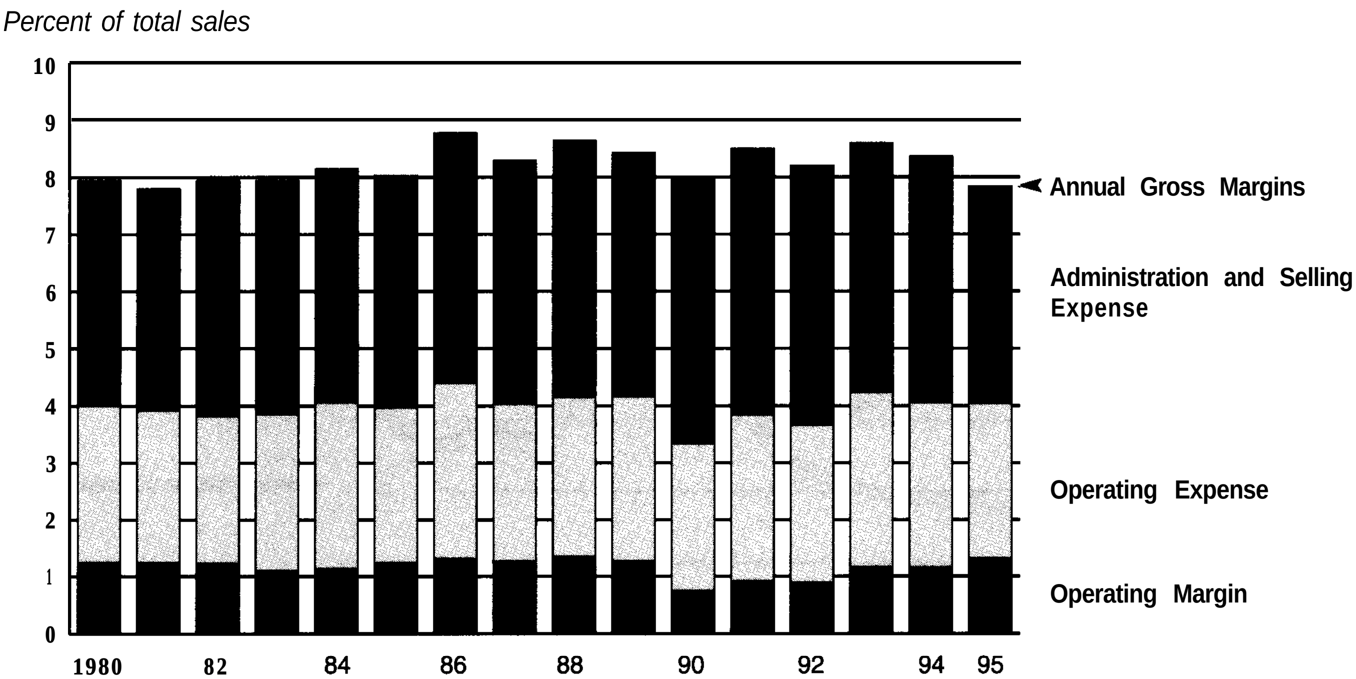
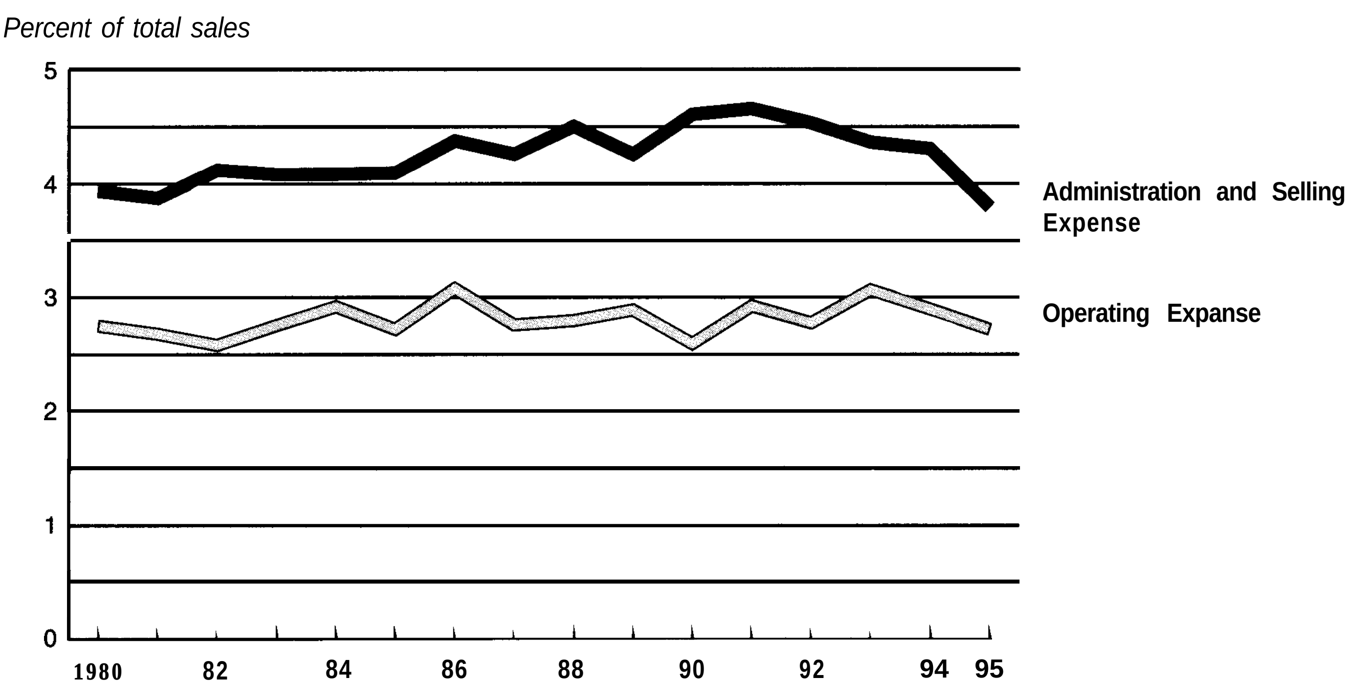


Figure 10— Administrative, Selling, and Operating Expenses for the Largest Dairy Co-ops, 1980-95



item on the operating statement. Income (expense) items included in this category of the operating statements varied considerably among the individual dairy cooperatives.

Nonetheless, other income (expense) was lowest in 1980 and increased steadily through the 1980s. Although other income climbed substantially between 1989 and 1991, it declined just as quickly between 1992

Figure 11— Interest Expense and Other Income for the Largest Dairy Cooperatives, 1980-95

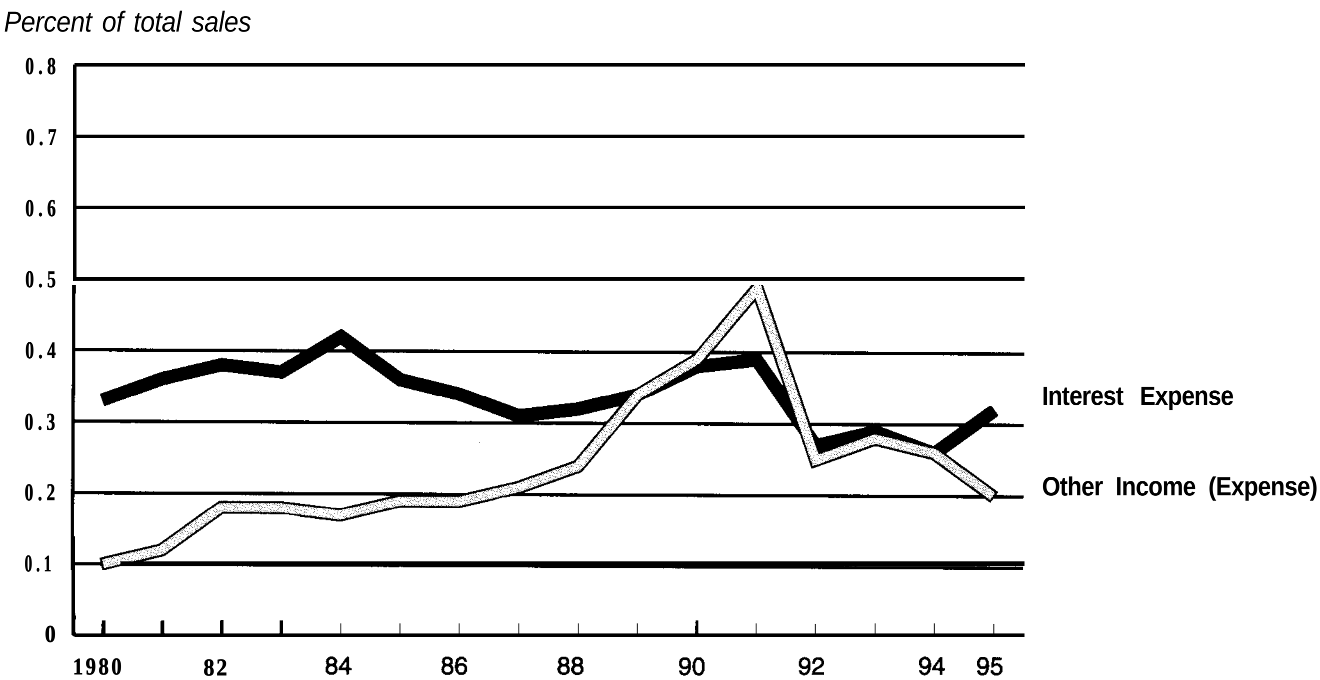
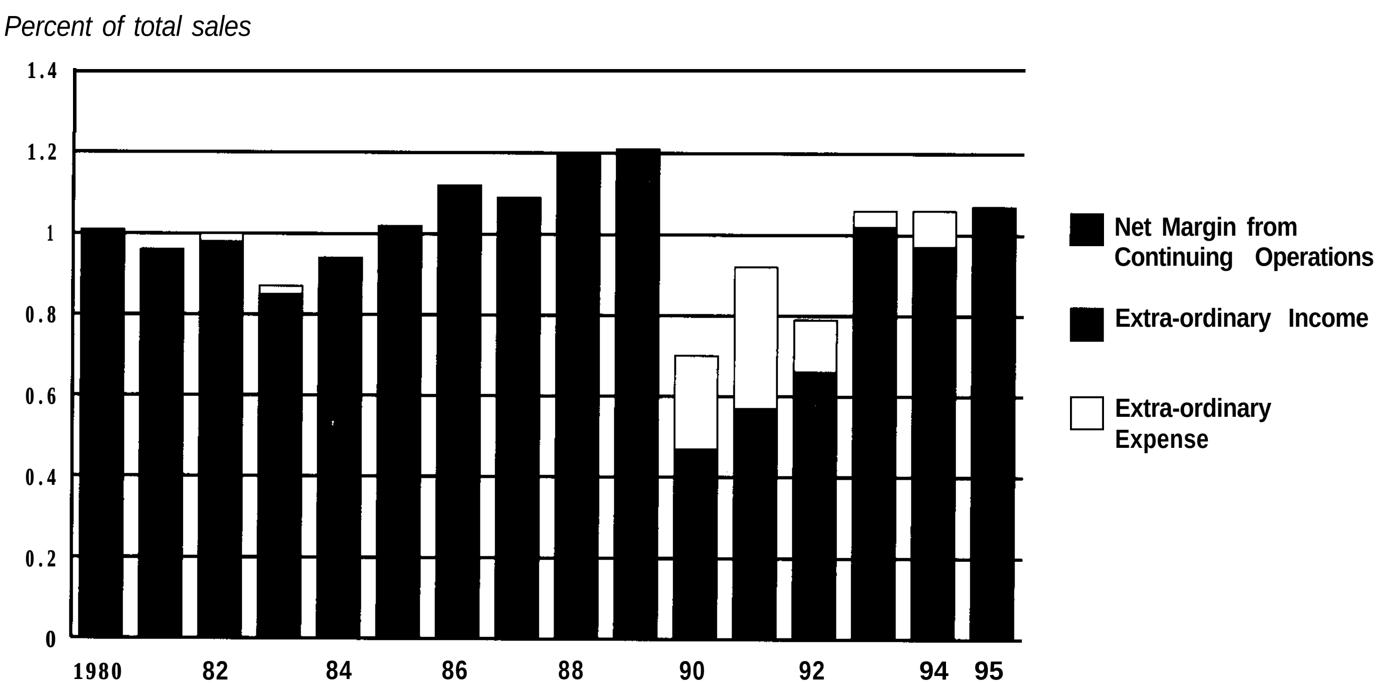


Figure 12— Net Margins from Continuing Operations for the Largest Dairy Cooperatives, 1980-95



and 1995. The other income growth can be traced, at least in part, to higher patronage refunds received from other cooperatives. A mix of unidentifiable income items placed into non-operating income also contributed to the increase and, consequently, at least in the 1990s, other income matched or was greater than interest expenses in several years.

Net margins from operations averaged 1.06 percent of sales, peaking in the mid-to-late 1980s and again in the mid-1990s. The initial highs reflected record low cost of goods sold as A&S expenses were just beginning to escalate. Net margins from operations improved significantly to 1.16 percent of sales or more between 1993-95 but for different reasons. In 1993, percentage declines in cost of goods sold and A&S expenses were greater than the increase in operating expenses. In 1994, declining operating expenses tempered the impact of a rise in cost of goods sold. And, in 1995, percentage increases in the cost of goods sold and interest expenses were matched by declines in both A&S and operating expenses.

Taxes averaged 0.07 percent of sales and generally increased, from 1984's low of 0.03 percent to 1995's high of 0.15 percent. While many factors affect the level of taxes, they primarily reflect the amount of net margins retained as unallocated reserves.

Net margins after taxes averaged 1 percent of sales. Higher levels occurred in the latter half of the 1980s—in the 1.08 to 1.20 percent range. After-tax net margins were already at their lowest levels in the early 1990s when extraordinary expenses further reduced profits.

Extraordinary items were not a major factor on the operating statement until the 1990s when they cut net margins from continuing operations significantly (figure 12). In 1990, extraordinary expenses amounted to 0.23 percent of sales, reducing already thin margins to just 0.47 percent, the lowest for the 16-year study. Expenses dropped 1991 margins to 0.57 percent of sales, the second lowest mark. And, in 1992, extraordinary expenses amounting to 0.13 percent of sales reduced net margins to 0.66 percent of sales. Extraordinary expense items in 1993 and 1994 continued to lower otherwise improving margins but not to the extent seen in the early 1990s.

Distribution of Net Margins

Table 2 shows the typical distribution of net margins in the study period. Dairy cooperatives distributed 29 percent of net income back to members as cash patronage refunds. Even dairy cooperatives reporting losses managed a cash refund averaging 2.8 percent of total losses. The largest dairy cooperatives returned 31.7 percent of net income as cash patronage refunds. Losses were typically absorbed by unallocated reserves. Nonetheless, losses devalued total member equity on the balance sheet.

During the study period, total patronage refunds (cash plus non-cash) for cooperatives with positive net income averaged 74 percent of net margins. The percentage distributed as cash increased considerably from 24.6 percent in 1980-83 to 34.7 percent in 1992-95. Total refunds were at their highest in the late 1980s—more than 80 percent of net margins. The highest percentage of non-cash distributions also occurred during the 1980s.

Dairy cooperatives with positive margins retained 17.3 percent of earnings as unallocated reserves. Larger distributions to unallocated reserves occurred in the first half of the 1980s. The largest, 25.2 percent, was made in 1984. The 1995 level was 24.7 percent.

Losses for dairy cooperatives were primarily distributed to unallocated reserves-66.1 percent. However, the average loss distribution is deceiving because of the limited number of observations during the course of the study. In the early 1980s, most losses went to unallocated reserves. But, since 1986, non-cash patronage has also absorbed some of the annual loss impact. And, in the early 1990s, some dairy cooperatives chose to pay limited cash refunds despite operating losses.

Table 2-Average **distribution of net margins (losses) for largest dairy cooperatives, 1980-95.**

Method of Distribution:	Net Margins	Net Losses	Net Margins (Losses)
	Percent		
Cash	29.0	-2.8	31.7
Noncash	44.9	15.3	47.8
Stock Dividends	0.5	0.0	0.6
Other	1.4	19.2	1.2
Unallocated	17.3	66.1	11.1
Taxes	6.9	2.2	7.6
Total	100.0	100.0	100.0

While profitability is the ultimate test of annual financial performance, management and creditors often use ratio analysis to look at this area over a period of years to detect trends and potential problem areas.

Financial Ratios

Data obtained from the individual cooperative's balance sheets and income statements were used to determine key financial ratios for each cooperative by year. The average of the annual individual ratios could be used as a financial benchmark for cooperatives in the dairy industry. Most ratios use annual financial data from the balance sheet and operating statement. Some ratios repeat those generated in the common-size analysis, but are presented again for continuity in this important phase of the analysis. The discussion also includes selected ratios based on a per-hundredweight (cwt) measure.

The ratios are divided into seven areas of financial performance: return on investment, financial leverage, operating performance, asset utilization, capitalization and solvency, short-term liquidity and the cwt analysis. Numeric details are in the appendix along with definitions for each ratio.

Return on Investment

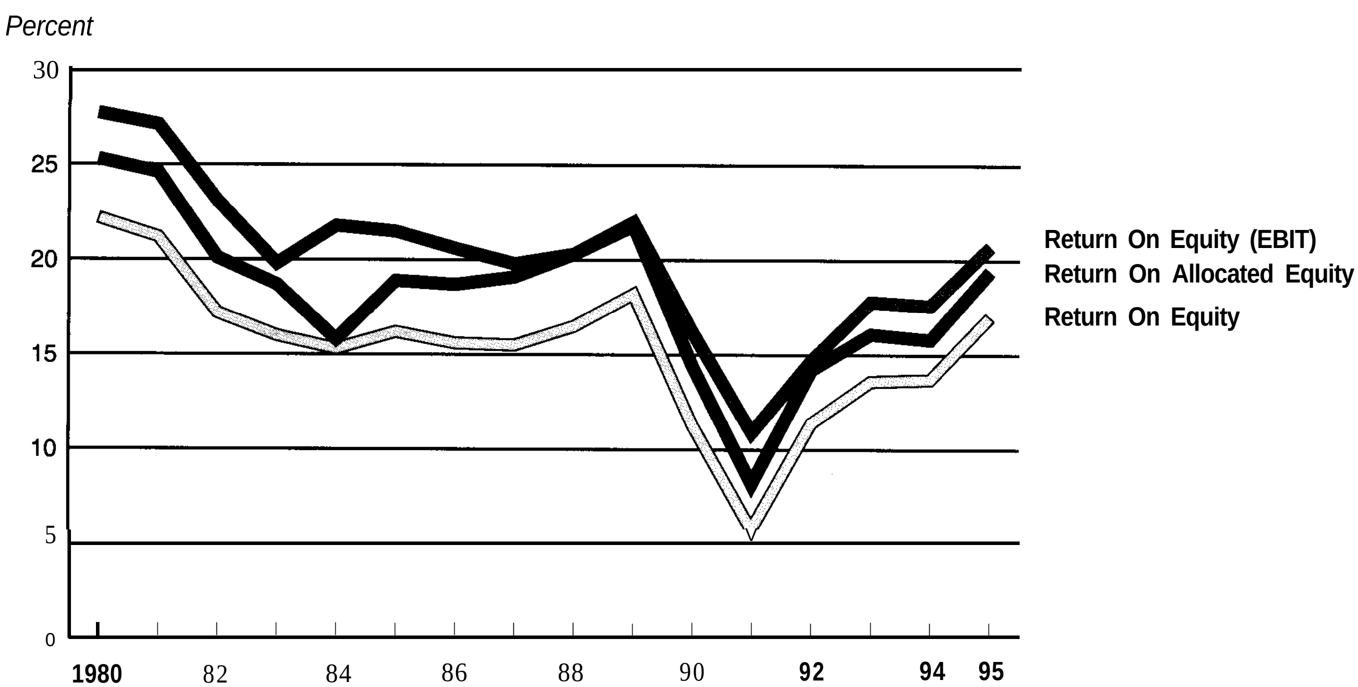
Returns in the 1980s were greater than those of the 1990s. The 18.2percent average return on allocated equity (ROAE) was significantly bolstered by the higher measures of the early 1980s when ratios were in the mid-to low-20 percent range (figure 13). ROAE dropped to 8.3 percent in 1991 but climbed to 19.4 percent by 1995 with the new cooperative additions to the group.

Return on equity (ROE) closely tracked the ROAE measures throughout the study period, averaging 15.4 percent. ROE before interest and taxes (EBIT) averaged 20.1 percent, up nearly 5 percent. Interest expense significantly reduced returns to member investment in the 1980s. Differentials peaked at 8.8 percent in 1984 when interest expense jumped and growing debt drove up the costs of borrowing.

Returns on investment grew in 1988 and 1989 as net income improved with declining interest expense. Returns were slightly above average for all three investment measures. But, the 1990s began with a number of cooperatives reporting significant operating losses.

Returns on member investment slumped dramatically in the early 1990s. Net incomes for many cooperatives dropped and some reported major losses. Setbacks in 1991 were severe, with the average return on equity among the large dairy cooperatives dropping to 5.8 percent. However, returns and ratios improved between 1992 and 1995. By the end of 1995,

Figure 13— Return-On-Investment Ratios for the Largest Dairy Cooperatives, 1980-95



returns closely matched those of the mid-1980s. Internal cost controls combined with lower interest expense to improve profits. Further analysis of dairy cooperative members' returns on investment examines returns on total assets and the leverage position of the cooperatives.

Leverage Multiplier

Total assets divided by total equity shows the impact of financial balance on profitability. The annual leverage multiplier interacts with the annual return on total assets to result in a "return on equity" for the year. A higher multiplier may result in higher returns on investment but, perhaps more importantly for cooperatives, increases financial risk of member investment. When the cooperative generates profits, a larger multiplier results in higher measures of return on investment. But, when an operating loss occurs, the higher multiplier also magnifies the loss impact. Cooperative management and directors are constantly challenged to weigh these financial risks versus safeguarding member investment to assure financial responsibility and continuation of services. Hence, the leverage multiplier may be a good measure of financial balance and a valuable yardstick for gauging financial risk.

Among the largest dairy cooperatives, the leverage multiplier averaged 2.8 for the study period. The average was bolstered by measures of 3 or more during the early 1980s. High multipliers combined with elevated ROTAs resulted in high returns on investment. But, high interest rates and debt levels of the early 1980s also created a much riskier operating environment. As interest rates climbed, many dairy cooperatives increased equity financing, and, as that gained a larger share of the balance sheet, the average multiplier declined.

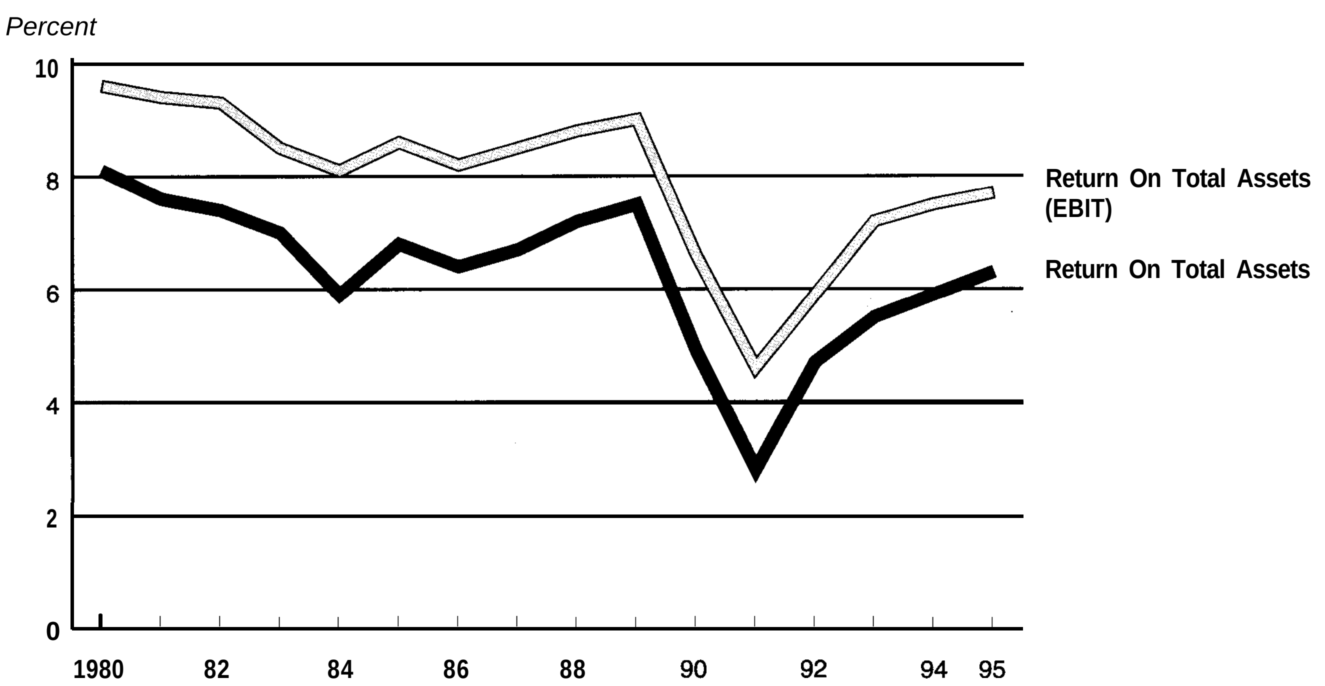
However, the average multiplier did not change much between 1986 and 1994. And, the jump in 1995 can be attributed to the addition and exit of other cooperatives in the study group. The stability in the leverage multiplier indicates that growth in member equity has kept pace with asset additions.

Return on Total Assets

Net income divided by total assets (ROTA) measures operating effectiveness and is measured both before and after interest expense and taxes. The two measures contrast the impact of debt-related interest expense and taxes on operating efficiency and profitability. ROTA measures the rate of return on members' total investment, total assets, without the direct influence of the leverage multiplier.

Both ROTA measures reflect the profitability trends discussed earlier (figure 14). ROTA averaged nearly 6.3 percent for the study period while the EBIT measure amounted to nearly 8 percent. ROTA measures were highest in the early 1980s. Interest expense

Figure 14— Return On Total Assets for the Largest Dairy Cooperatives, 1980-95



and taxes caused an average differential of 1.7 percent between EBIT and after-tax measures. The differential widened to 2.2 percent in 1984, reflecting the high interest expense of the period. The difference declined slowly to 1.8 percent for several years.

In the late 1980s, operating profitability improved as both ROTA measures approached levels seen in the early 1980s. However, extreme variability in milk and milk product prices in the early 1990s caused performance to tumble. ROTA dropped to the study low in 1991. Operations recovered slowly between 1992 and 1995. ROTA reached 6.3 percent and the EBIT measured above 7.7 percent, almost the study average. However, returns on total assets in the 1990s were below levels seen earlier in the study period.

Operating Performance

These ratios concern how much profit or net income is made on sales. The profit margin ratio was determined both before and after taxes but only the after-tax ratio is discussed. Pretax margins are shown in an appendix table.

Profit margin (net income divided by sales) averaged 1.6 percent of sales. Profit margins were at their highest in the late 1980s (figure 15). High returns on investment in the early 1980s reflect the influence of the higher financial leverage multipliers of the period. In 1988 and 1989, profits were higher than the average, slightly above 2 percent. But, operating losses in the early 1990s caused profits to plummet. However, profit margins later improved to reach the study average by 1995.

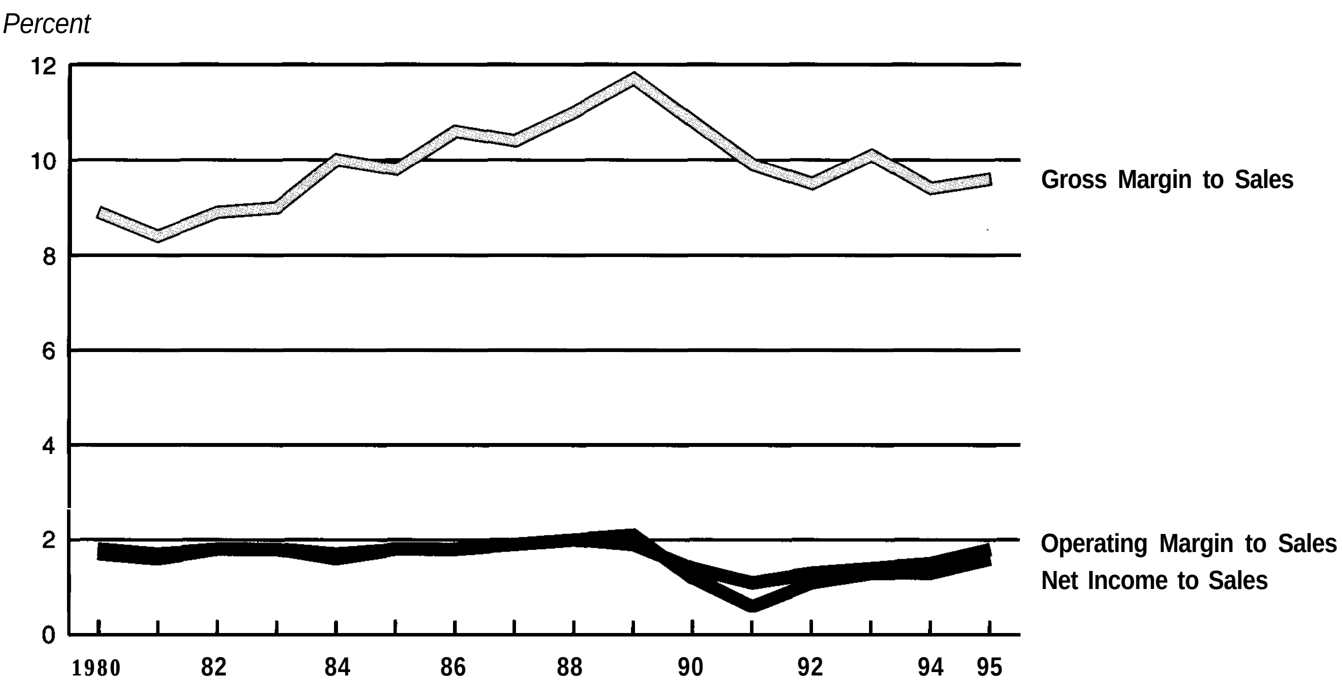
Operating margins (operating income divided by sales) averaged nearly 1.7 percent for the study period. In the mid-1980s, operating margins closely matched profit margin ratios. But differences began to show in the late 1980s. By the 1990s, operating margins averaged 1.5 percent of sales compared with the 1.3 average profit margin.

Gross margins averaged 9.9 percent of sales, hitting highs in the late 1980s and 1990. Notably, gross margins were at some of the highest levels in the early 1990s when dairy cooperatives reported some of their biggest operating losses. In 1990 and 1991, operating margins followed gross margin declines. But, in the mid-1990s, operating margins continued to improve while gross margins generally stabilized as cooperatives cut operating costs. While cost-cutting efforts helped operations improve, asset use continued to frustrate progress.

Asset Use

These ratios reflect the use of assets. Total asset turnover (sales divided by total assets) is the most comprehensive asset management measure and a prime factor along with profit margin in determining return on total assets. The all-encompassing indicator

Figure 15— Margin Performance Ratios for the Largest Dairy Cooperatives, 1980-95



of sales-to-assets may mask underuse of specific assets, so more focused turnover ratios are also included to provide a look other key indicators of asset use.

Total asset turnover declined from a study high of 5.5 times in 1981 to 4.4 by 1986 and remained significantly low through the 1980s. Turnover rates gained little momentum, averaging 4.5 times between 1992-95. Slow asset turnover continued to inhibit ROTA and ROI.

Lagging sales growth and continued fixed asset additions curbed fixed asset turnover in the 1980s. The turnover rate declined from 20 in 1980 to 14.2 in 1989 (figure 16). Some recovery was evident in the 1990s as sales growth outpaced additions to PP&E. The turnover of 16.3 during the closing 4 years of the study barely exceeded the study average of 16.2 but it was better than the 14.6 average for 1988-91.

Although inventory turnover averaged 45.7 times per year, rates of the mid-1980s were higher than the slower turnovers during the early 1990s (figure 17). Inventory turnover rates were highest through the 1980s, averaging 49.5 through 1988. The slowdown continued through 1993 to 35.2 before improving modestly in the closing years of the study. Manufacturing of higher-value dairy products that are held as inventory for longer periods of time (aging cheese, for example) is partially responsible for the slower inventory turnover rates. Nonetheless, these slower rates contribute to the overall asset turnover situation.

The accounts receivable turnover rate averaged a fairly consistent 14.8 turns per year. The highest of 15.9 occurred in 1990. The turnover rate slowed down in the 1990s but the average 14.6 for the final 4 years of the study is only slightly less than the study average.

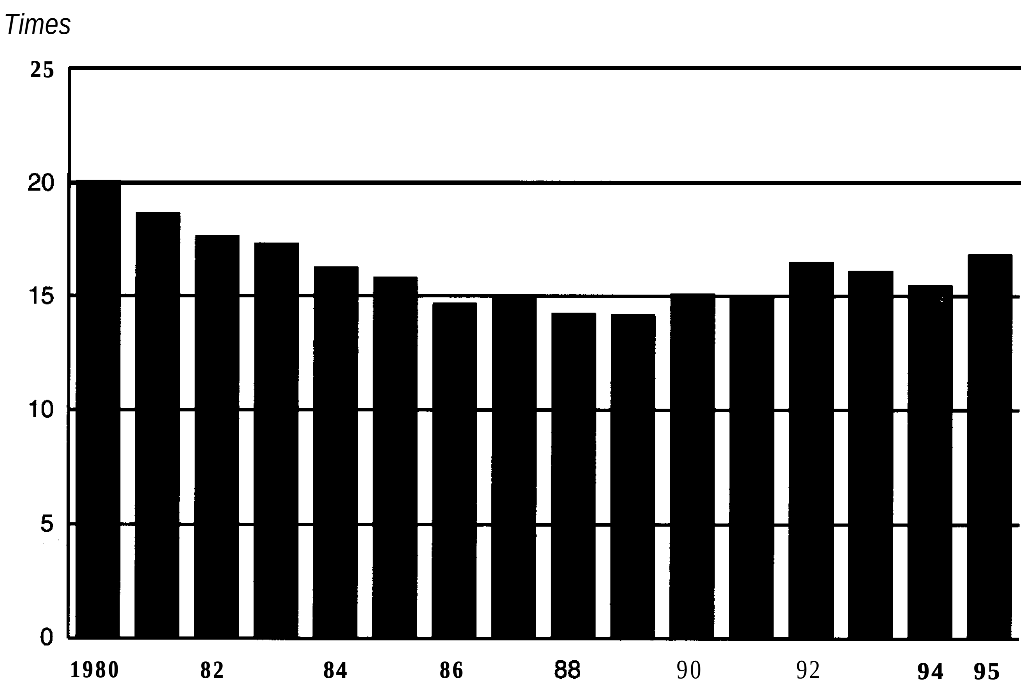
Highly variable cash accounts resulted in erratic cash turnover rates throughout the study period. End-of-the-year balance sheets typically carry low cash accounts. While erratic turnover rates are not surprising, they make it difficult for meaningful analysis. The ratios are in the appendix.

The slowdowns in fixed asset and inventory turnover contribute to the slump in total asset turnover. And, although fixed asset turnover shows limited signs of improving, slow inventory turnover appears to be a constant challenge.

Capitalization and Solvency

These ratios gauge financial balance and ability to meet debt obligations with annual operating income. The times-interest-earned (TIE) ratio measures the funds available to pay interest expense (net income plus interest expense) compared with the current annual interest expense. When profits are high and/or interest expenses low, the ratio will be relatively high, indicating the ability to meet additional debt-related expenses. However, if term debt and/or interest

Figure 16— Fixed Asset Turnover Rates for the Largest Dairy Cooperatives, 1980-95



expenses are high while profitability is low, the ratio will be low, indicating potential difficulty in meeting financial obligations.

The TIE ratio for the largest dairy cooperatives shows almost cyclic variation (figure 18). The largest dairy cooperatives seemed to move through several

Figure 17— Inventory Turnover Rates for the Largest Dairy Cooperatives, 1980-95

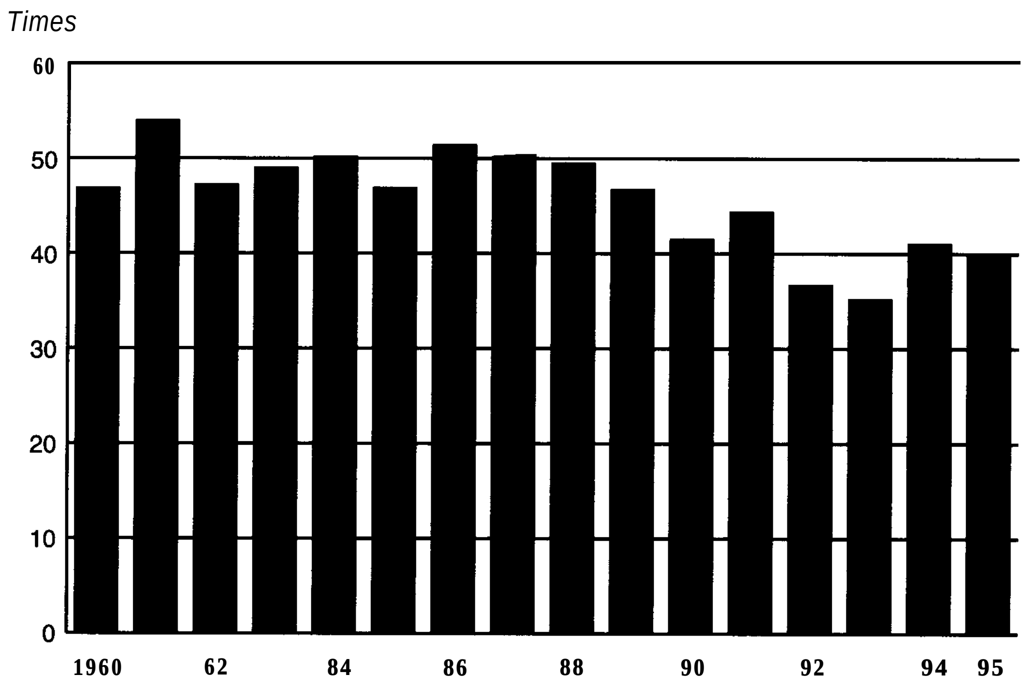
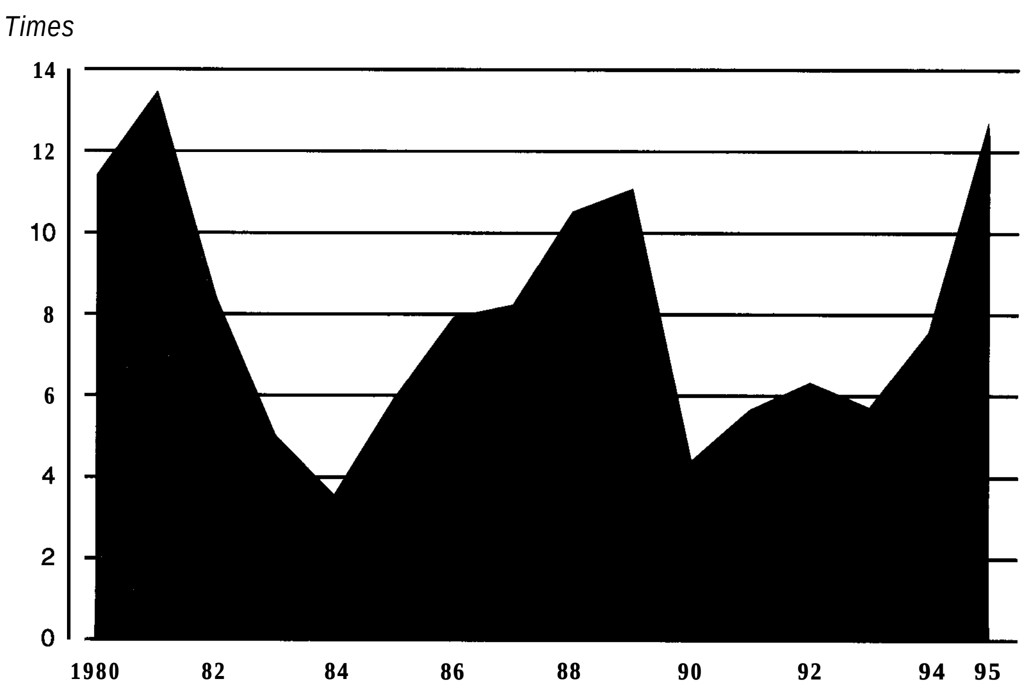


Figure 18— Times Interest Earned Turnover Rates for the Largest Dairy Cooperatives, 1980-95



feast-to-famine phases. Obviously, the TIE average of 8 does not portray the wide variation nor financial challenges experienced during the 16-year period.

Between 1981 and 1984, additions to debt and skyrocketing interest rates coupled with lackluster profits dropped the TIE. With debt restructuring, growth in equity financing and lower interest rates as well as healthier incomes, the TIE measure improved through the balance of the decade. But, financial challenges of the early 1990s caused the TIE to again plummet. Although a recovery appeared to be underway in 1993 and 1994, the changes among the largest dairy group in 1995 further clouded the issue.

The debt-to-equity ratio measures the annual balance of long-term financing. The ratio averaged 0.37—in declining from 0.44 in 1982 to 0.27 in 1994 (figure 19). Improvements were largely driven by healthy increases in equity financing and prudent use of long-term debt. The shift to more equity financing is reflected in both the equity-to- and debt-to-assets ratios.

The equity-to-assets ratios increased rapidly from 34.4 percent in 1980 to 40.4 percent in 1984. But, during the next decade, the ratio improved very slowly to a high of 42.5 percent by 1994 before dropping to 39.9 percent in 1995 due to change in study participants. Equity averaged nearly 40.2 percent of total assets. The growth in equity financing coincided with the the dairy industry's evolution to a more market driven and risk-based environment.

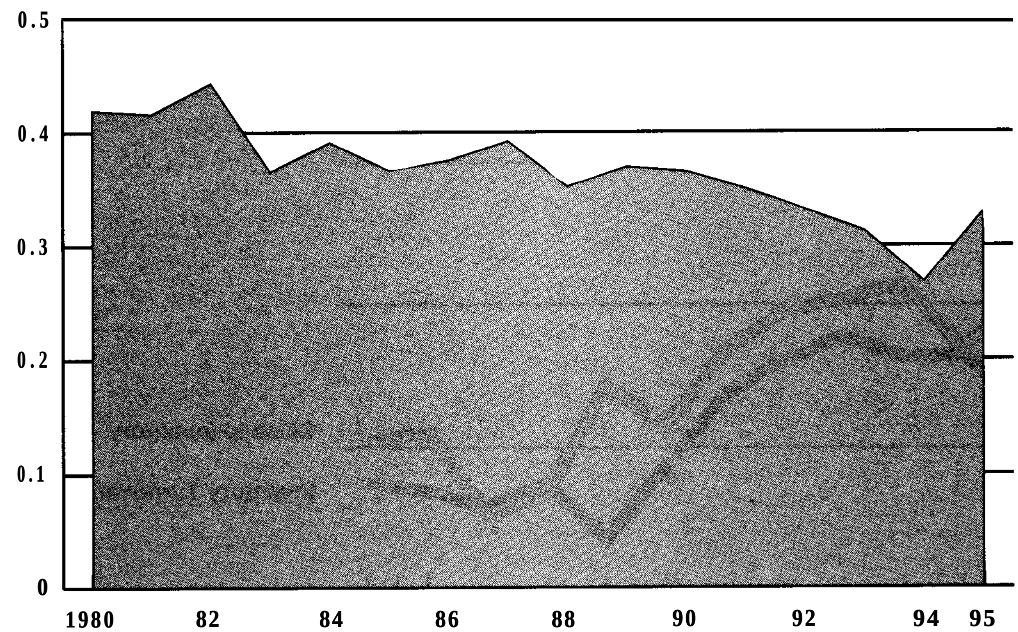
On the other hand, the debt-to-assets ratio was significantly less, averaging 12.1 percent. Yet, like the equity ratio, debt-to-assets rose in the early 1980s, reaching a high of 13.9 percent in 1982. It declined to 11.8 percent of assets in 1985, just below the study average. For 8 years, term debt as a percent of assets changed little, until 1994 when it fell to the low of 9.8 percent. Overall, the debt-to-asset ratio reflects prudent use of debt capital throughout the study period. Apparently, asset additions were largely financed more by equity than by debt.

The total liabilities-to-assets ratio declined from the 1980 high of 65.6 percent to 59.6 percent in 1984. During the next 10 years, the ratio nestled around 58 percent of assets, with little variation as the percentage of both term debt and current liabilities stabilized. The ratio bottomed out at 57.5 percent in 1994 before rising to 60 percent in 1995 following the change in the cast of characters. The variations were primarily driven by the changes in current liabilities.

The capitalization and solvency ratios indicate improved strength in member financing and resilience in long-term solvency despite profitability challenges of the study period. While the larger dairy coopera-

Figure 19—Term Debt to Equity Ratios for the Largest Dairy Cooperatives, 1980-95

Dollar debt per dollar equity



tives appear strong for the long run, an examination of short-term liquidity suggests more immediate challenges.

Liquidity

These ratios gauge the ability to meet current debt obligations. It is possible to be profitable and yet be unable to meet the current financial obligations because assets cannot generate cash flow needed to meet current financial demands. Four ratios provide a look at the quality of assets and indicate prospects for short-term liquidity: inventory turnover, acid test, quick ratio and current ratio.

This inventory turnover ratio is calculated differently than the "sales to inventory" ratio discussed earlier. The liquidity measure is based on "cost of goods sold divided by the average of the current and previous year's inventory." Regardless of the calculation method, the message remains the same. Inventory turnover slowed through the 1980s with only slight improvement in the first half of the 1990s (figure 20). The slowdown should concern dairy cooperative management.

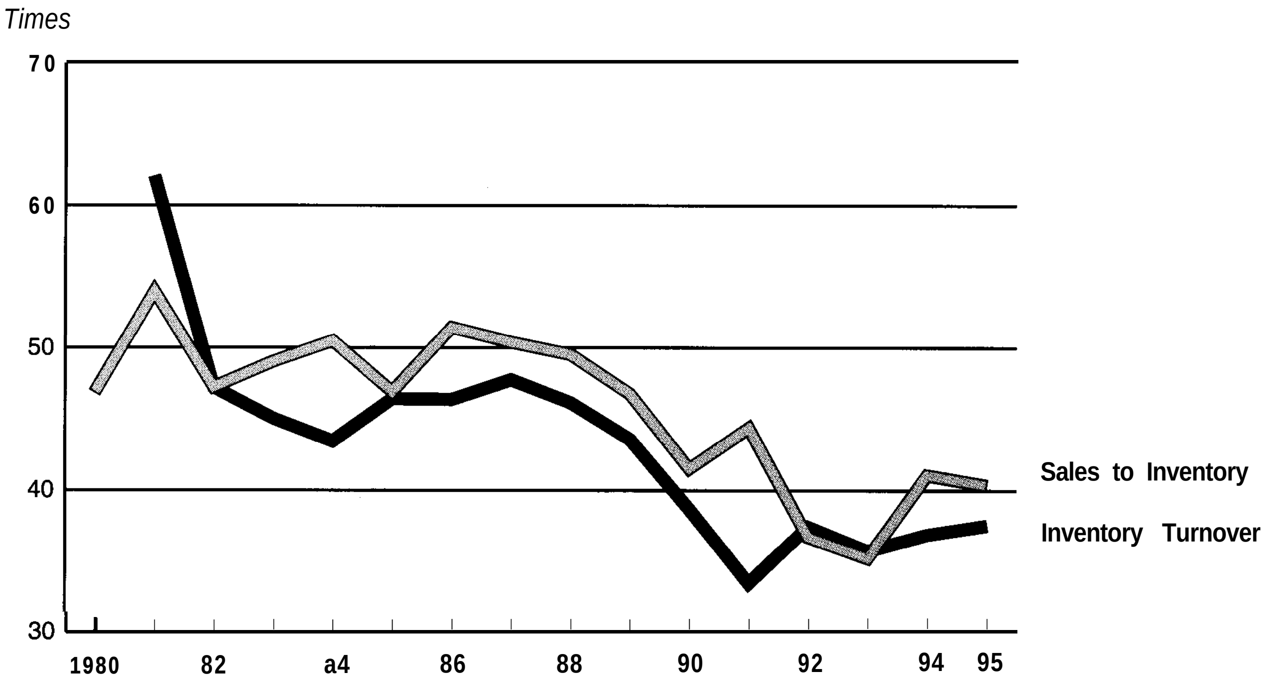
Commonly used liquidity ratios can be seen in figure 21. The acid test ratio gauges the ability to meet current obligations primarily with cash. This ratio averaged 0.26 per year. Dairy cooperatives had higher ratios in the second half of the 1980s, but declined into the early 1990s. The higher measures in the mid-1980s occurred when cash occupied a larger share of the balance sheet and current liabilities were at study lows. In the 1990s, cash's share of the balance sheet declined slightly. Increased liabilities caused the acid ratio to slide to near study lows, indicating a possible liquidity problem, depending on the quality of other current assets.

In the quick ratio, accounts receivable are added back to cash, resulting in a significant increase in liquidity during the first half of the study period. From 1982 to 1989, dairy cooperatives carried a quick ratio of around 1, indicating the ability to maintain short-term solvency. However, in the 1990s the ratio fell below 1 and continued to decline. A drop in receivables as a percent of total assets coupled with the cash decline contributed to the decline. True value of the measure depends on the quality of the receivables and these details are beyond the scope of this study.

The current ratio considers all the current asset components. The ratio for largest dairy cooperatives averaged 1.4 and never dipped below the 1.2 measure of 1980. It increased quickly to 1.44 by 1982 when current liabilities declined faster than current assets. It rose to 1.5 in 1986 but then declined in the 1990s following receivables and inventories.

When quick and current ratio trends are considered together, it becomes apparent that inventory

Figure 20— Comparison of Inventory Turnover Ratios for the Largest Dairy Cooperatives, 1980-95



turnover is critical to maintaining short-term liquidity. The perceived decline in cash as a percent of total assets in the 1990s makes an improvement in inventory turnover all the more crucial. And, although this study could not address the quality of receivables, the aging of these accounts may be critical to meeting current obligations.

Figure 21— Selected Liquidity Ratios for the Largest Dairy Cooperatives, 1980-95

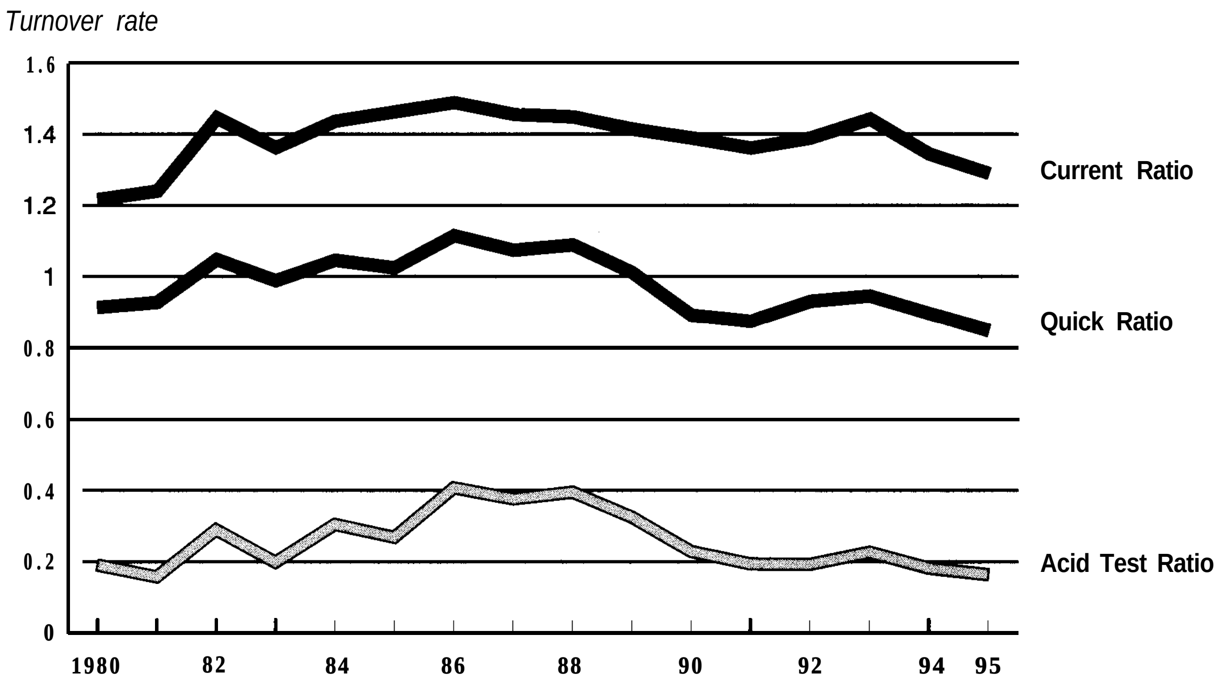
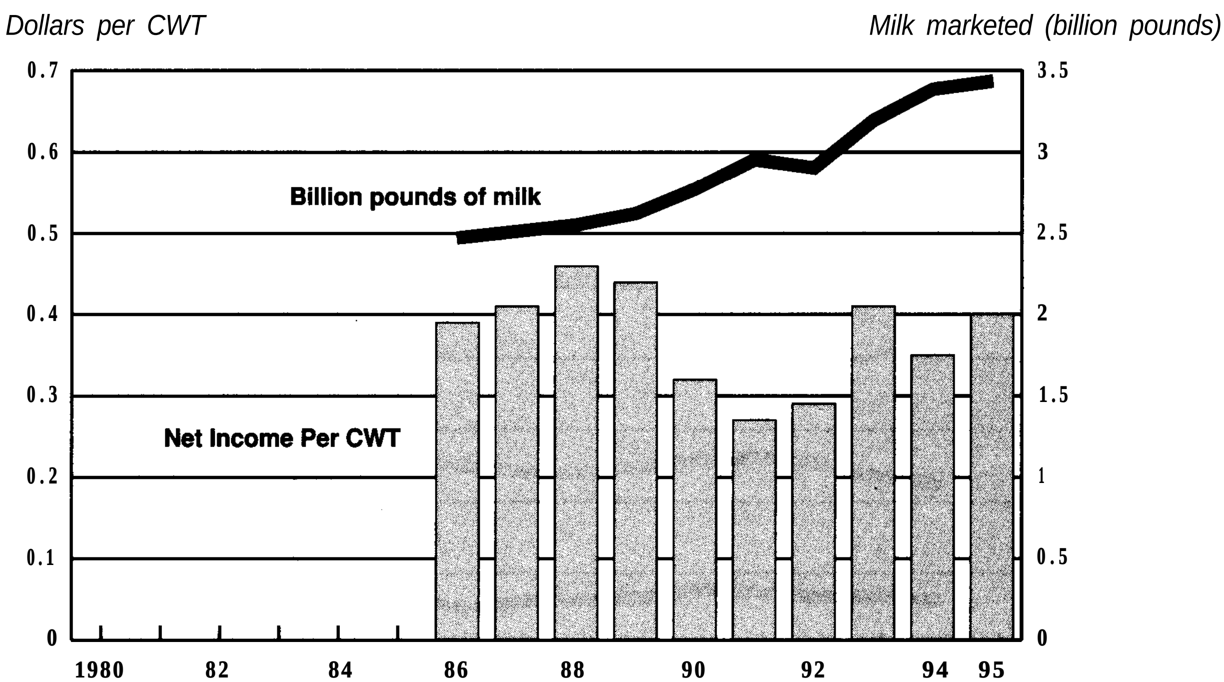


Figure 22— Net Income Per CWT for the Largest Dairy Cooperatives, 1980-95



CWT Ratios

These ratios were used to measure performance on a "per-hundred-weight basis" (per cwt). Dairy cooperative management, directors and members want net income and "sales-per-cwt of milk handled" to increase. For inter-cooperative comparisons, other items of interest would include total assets-per-cwt marketed and historical equity and debt-per-cwt

Figure 23— Sales Per CWT for the Largest Dairy Cooperatives, 1980-95

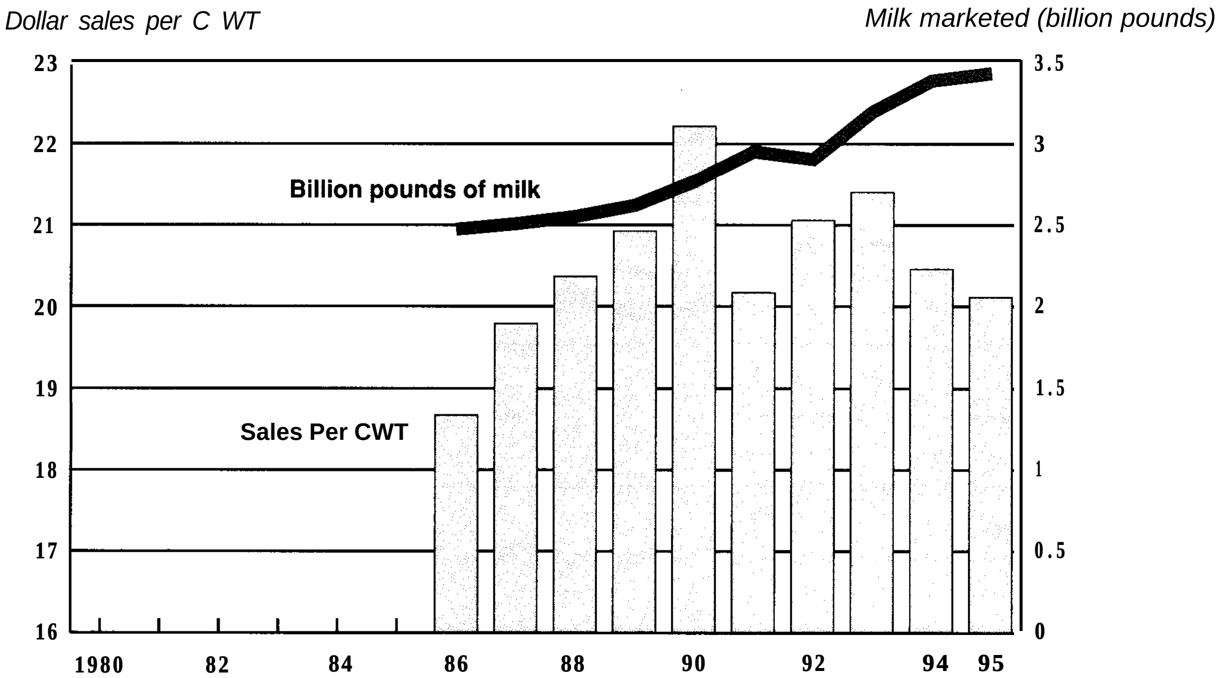
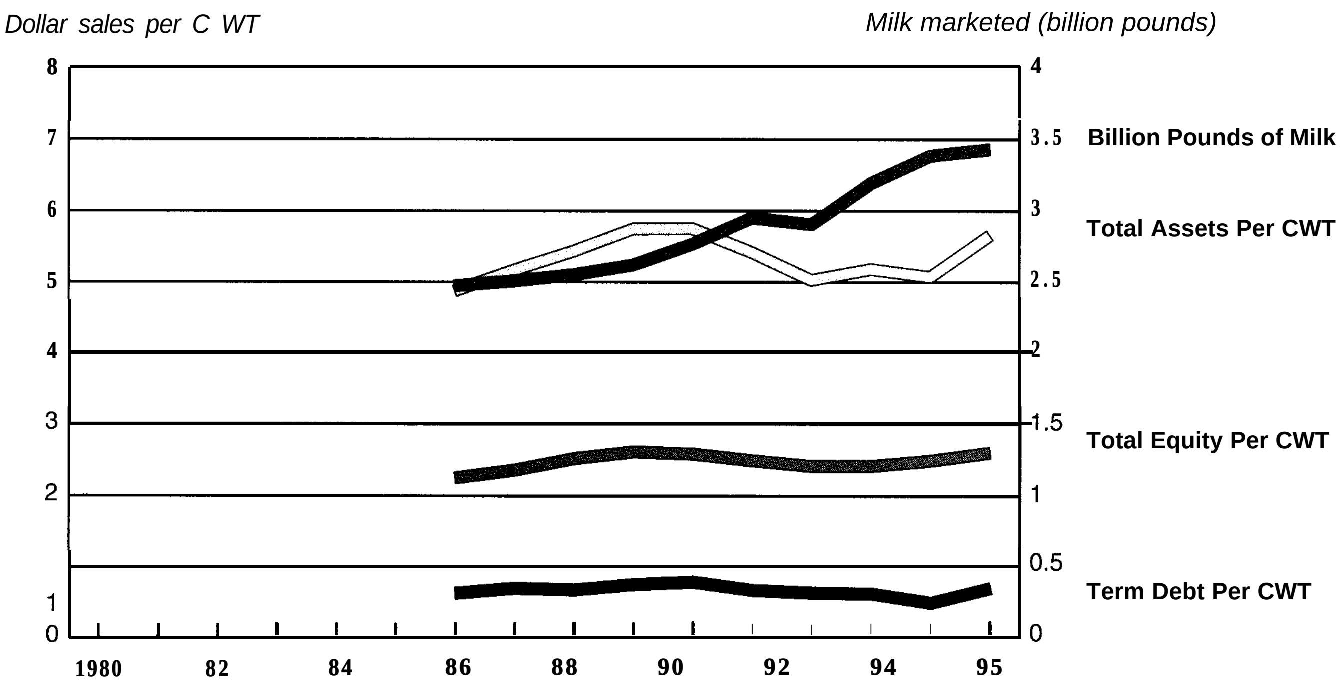


Figure 24— Selected Balance Sheet Items Per CWT for the Largest Dairy Cooperatives, 1980-95



trends. The ultimate value of the cwt measures depends on the share of sales, revenues and assets directly traceable to the volume of market milk versus non-dairy-related activities. As with all financial ratios, a strict interpretation or reliance on ratios could be misleading. Analysts should use ratios in conjunction with other information to create a more wholesome financial performance picture of cooperative operations.

Data to develop the cwt measures were not available prior to 1986. And, data depicting the annual trends in milk marketed by cooperatives (in billion pounds) is shown on each chart for reference. Milk marketed through the largest dairy cooperatives increased in all years but 1992, when the number of participants dropped from 29 to 27.

Net income per cwt peaked in 1988 at $0.46 (figure 22). The measure dropped dramatically in the early 1990s when profits plunged and some cooperatives reported major losses. Although net income per cwt improved near the end of the study, it failed to reach levels of the late 1980s.

Dollar sales per cwt increased substantially in the late 1980s, reaching a high of $22.21 in 1990 (figure 23). In the early 1990s, sales per cwt recovered quickly following the plunge in 1991. However, they dropped below the study average, $20.55 per cwt, in 1994 and 1995. The increase in milk sales was not as rapid as the growth in milk volume marketed through the cooperatives.

Equity-per-cwt averaged $2.48. The study low occurred in 1986 at $2.25 and peaked a decade later at $2.66 in 1995 (figure 24). However, if the 1995 measure is disregarded because of the noted change in study participants, the high would have occurred in 1989 at $2.61. The declines in the early 1990s would then have been more notable as the ratio slumped to $2.41 in 1992. The equity-per-cwt measures for 1993 and 1994 improved to $2.42 and $2.49, respectively-close to the average.

The term-debt-per-cwt ratio was substantially lower than the equity measure but demonstrated similar stability. The ratio increased from $0.61 in 1986 to $0.77 in 1990, but then declined significantly to $0.48 by 1994. In 1995, the change in cooperative participants propelled the measure to $0.70.

The total assets measure averaged $5.24 per cwt, growing rapidly from $4.87 in 1986 to $5.75 in 1989 and 1990. The measure declined quickly to $5.03 per cwt in 1992 as asset additions slowed compared with increased milk marketed through cooperatives. Between 1992 and 1994 the measure showed little change. Asset growth matched the growth **in milk marketed. In 1995, the measure jumped to $5.66 per cwt, following the change in study participants.**

The per-cwt ratios provide mixed signals. The net income-per-cwt measure shows signs of sluggish recovery following the 1991 low. However, the sales-per-cwt ratio is declining in the face of the growing volume of milk marketed. The equity-per-cwt measures are relatively stable but show some signs of growth with market risk. Prior to 1995, the debt-per-cwt measure was declining, an indication of additional market risk as cooperatives shift to more member financing in lieu of outside debt capital. After the 1990 slump, the assets-per-cwt measure seemed to have stabilized before rising in 1995.

Appendix

Data Limitations

Like other businesses, cooperatives publish annual financial reports and follow generally accepted accounting principles and practices. However, internal accounting philosophies differ between cooperatives and affect the recording and reporting of financial data. Consequently, some line item details were consolidated into broader accounting categories to make the financial measurements more useful and meaningful.

The lack of detailed financial data and of awareness concerning individual cooperative accounting policies constrained the analysis of the operating statement more than the balance sheet analysis. For instance, on the operating statement, some cooperatives account for partial or total processing costs in "costs of goods sold" or "cost of sales." Others show them as "operating expenses." Different accounting philosophies also hampered the administrative and sales expense analysis.

On the balance sheet side, discussion of pooling and related pool liabilities was limited by two factors. Some cooperatives carry pool liabilities on monthly statements through most of the operating year but close the pools at year-end reporting. Consequently, no pool liabilities are shown on the year-end statement. Other cooperatives merged pool, redemption and patronage into one "amounts due members" accounting category. The impact of these various accounting practices on the balance sheet analysis must be considered in the comparisons. Although the data was segregated when possible, caution should be exercised in a narrow interpretation of the results.

Another reporting matter complicated the analyses. Fiscal year-end operating dates for the various cooperatives do not necessarily coincide on Dec. 31. Cooperatives have different dates for closing the operating year. So, some data used in the annual analysis covers more than a specific calendar year. However, annual data used in this study reflects the results of operations for the greater portion of any given year. The overlaps had little if any effect on overall results.

Although seasonal fluctuations occur within the dairy industry, the data adequately portrays the financial positions of the cooperatives in a specific year of the study Development of the consolidated balance sheet and income statement and calculation of key financial ratios based on the statements from individual cooperatives provide for useful comparisons by type of dairy cooperative and overall financial trends.

Methods of Analysis

Placing financial statements in common sizes is a method of analysis that expresses each line item as a percent of the total. Balance sheet elements are expressed as a percent of total assets and items on an operating statement are shown as a percent of total sales.

Sizing creates a commonality for the line items in the financial data, facilitating comparison between years and minimizing distortions that could be caused by the largest cooperatives. It has several advantages. First, it allows comparisons over time even though the number of cooperatives included in the database varies slightly from year to year. Second, common-sizing makes it easier for individual dairy cooperatives to compare financial statements and performance in any given year and over the time period.

Statement Item Definitions

Financial data presented in this research report came from the balance sheets and income statements contained in the annual reports of the dairy cooperatives that rank among the largest of all farmer cooperatives. To provide consistency and consolidate some balance sheet and income statement details, the line items were condensed into fewer, more broadly defined categories without limiting the usefulness of the information.

Balance Sheet

Other current assets: Any current asset not included in cash and market securities, accounts receivable, and inventories. This usually includes pre-paid expenses and other items.

Investments: Investments in the Banks for Cooperatives, other cooperatives, other enterprises and "other" types such as notes receivable.

Other fixed assets: Any fixed asset not included in investments, and PPE.

Short-term debt: Sources include Banks for Cooperatives, commercial banks, bonds and notes, etc. issued by cooperatives, commercial paper and the Commodity Credit Corporation and other governmental sources and non-financial entities.

Other current liabilities: Trade accounts payable, amounts due members in cash patronage refunds, cash dividends, equity redemption, and unpaid milk payments and any other current liabilities not defined within the annual reports.

Long-term debt: Sources include the Banks for Cooperatives, bonds and notes issued by cooperatives, commercial banks, insurance companies, industrial development bonds, capital lease obligations, other nonfinancial entities, the Commodity Credit Corporation and other governmental resources and other sources not defined within the annual reports.

Equity: Includes preferred stock, common stock, equity certificates and credits, unallocated capital and minority interests.

Income Statement

Marketing sales: Derived from dairy operations of either raw bulk milk, manufactured or processed dairy products. May include some marketing of insignificant non-dairy items.

Other operating revenues: Consists of mainly unidentified farm supply sales and service income, but also other operating revenue not specified in farm supply or marketing sales.

Other income (expenses): Consists of interest income, non-operating income, other expenses not defined in the annual report and patronage refunds received from the Banks for Cooperatives and other sources.

Tax provision: Includes current, deferred and other taxes.

Extra-ordinary items: Contains losses, loss carryforward and other accounting changes.

Financial Ratio Terms

Short-Term Liquidity Ratios

Current ratio: Total current assets divided by total current liabilities. Indicates the amount of current assets available to meet current liabilities. The cooperative is liquid if the ratio is greater than 1. Higher numbers representing greater liquidity.

Quick ratio: Same as the current ratio except that inventories are subtracted from current assets. Depending on the liquidity of inventories, ratios less than 1 may indicate potential problems in meeting current liabilities.

Acid test ratio: Same as the quick ratio except that accounts receivable are also subtracted from current assets. Ratios less than 1 are common. Low ratios may indicate potential problems in meeting current liabilities depending on the aging and receivables turnover.

Inventory turnover: Cost of goods sold divided by average inventory, Measures the average rate of speed with which inventories move through the cooperative and depends on the mix of bargaining, manufacturing and processing.

Long-Term Solvency Ratios

Long-term debt to total assets: Long-term debt divided by total assets measures long-term creditors' share of the balance sheet.

Total liabilities to total assets: Total liabilities divided by total assets measures how much of total assets are financed by long- and short-term creditors.

Equity to total assets: Equity divided by total assets indicates the degree of financing by members/patrons.

Equity per hundredweight: Equity divided by total annual volume (in cwt) milk marketed measures member equity investment per equivalent volume basis.

Total assets per cwt.: Total assets divided by total annual volume (cwt) of milk marketed measures total assets investment per equivalent volume basis.

Leverage multiplier ratio: Total assets divided by total member equity plays a role in determining the return on investment and also gauges the financial risk to members. The higher the leverage multiplier ratio the higher the financing from outside sources.

Times interest earned: Earnings before interest and taxes divided by interest gauges the ability to service debt finance charges.

Asset Use Ratios

The degree to which assets are used is measured by the asset turnover ratios. Asset use is measured by the amount of sales per assets. The basic turnover rate of assets is sales to total assets, which is broken down into the components of total assets to gain further insight into the use of specific assets.

Sales to **cash:** Total sales divided by cash and market securities indicates the relationship between sales and the cash level needed to meet liquidity and day-to-day transactions. A high rate may indicate a cash shortage while a low rate may indicate holding idle and unnecessary cash balances.

Sales to accounts receivable: Total sales divided by accounts receivable indicates how much of annual sales rely on credit. A high turnover rate may indicate cash flow shortages or collection problems dependent on aging of receivables.

Sales to inventories: Total sales divided by year-end inventories indicates how well raw products, supplies, and finished products are managed. Higher numbers are preferable.

Sales to fixed **assets:** Total sales divided by fixed assets gauges the use of fixed assets.

Sales to total assets: Total sales divided by total assets is often called the total asset turnover and reflects asset use.

Operating Performance Ratios

These ratios measure the results of operations.

Gross margin ratio: Gross margin (sales less cost of sales) divided by total sales indicates how well production costs are managed and the adequacy of pricing **policies.**

Operating margins to sales: Net margins before interest, taxes and other income or expenses divided by sales measures earning ability on the cost of doing business.

Pre-tax margin to sales: Net margin before tax divided by sales reflects pre-tax profits per dollar of sales. It also indicates operating efficiency and the ability to withstand operating adversity.

Net margin to sales: Net margin after taxes divided by sales reflects the earnings of the cooperative after accounting for taxes.

Return-on-Investment Ratios

These ratios indicate the cooperative's success in providing a financial return on members' investment. In a dairy cooperative, **however, profits may be lower if management decides to pay higher milk prices, premiums, etc. Measuring returns on investment before and after interest and taxes provides a means to gauge the impact of interest and taxes on operations.**

Return on total assets (EBIT): Net margin (earnings before interest expense and taxes) divided by total assets reflects the profitability of assets employed before interest expense and taxes are deducted from net margin.

Return on total assets: Net margin (after interest expense and taxes) divided by total assets reflects the profitability of assets employed after interest and taxes are deducted.

Return on equity (EBIT): Net margin (earnings before interest expense and taxes) divided by equity measures profitability relative to members' investment before interest expense and taxes are deducted.

Return on equity: Net margin (after interest expense and taxes) divided by equity measures profitability relative to members' investment after interest expense and taxes are deducted.

Appendix Tables

Appendix Table 1- **Common-size balance sheet for major dairy cooperatives, 1980-1995**

	1980	1981	1982	1983	1984	1985	1986	1987
	Number of Cooperatives							
	24	26	26	27	28	29	30	30
	Percent							
Assets								
Current Assets								
Cash and market securities	5.09	5.16	6.02	5.45	7.25	6.63	8.64	8.34
Accounts receivable	39.69	40.23	36.26	38.00	35.93	35.03	34.08	33.30
Inventories	17.68	16.64	17.35	16.60	15.63	17.48	15.15	16.20
Other current assets	0.75	0.66	0.58	0.63	0.66	0.79	1.74	0.88
Total current assets	63.21	62.68	60.21	60.68	59.47	59.95	59.60	58.72
Investments	5.46	5.96	7.15	6.64	6.62	5.90	5.95	6.48
Property, plant, and equipment	28.84	29.28	30.33	30.08	31.37	32.36	32.25	32.51
Other assets	2.49	2.08	2.30	2.60	2.54	1.79	2.19	2.29
Total Assets	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Liabilities and equity								
Current Liabilities								
Current portion of long-term debt	2.85	2.68	1.61	1.55	1.73	1.62	2.01	1.90
Short-term debt	2.90	3.78	4.32	5.47	5.82	5.32	5.38	4.62
Total short-term debt	5.75	6.46	5.93	7.03	7.55	6.94	7.39	6.51
Trade accounts payable	15.65	15.16	14.97	15.15	14.81	14.67	14.61	15.00
Amounts due members	26.71	25.48	23.23	21.54	20.76	20.25	20.39	19.62
Other current liabilities	4.09	3.96	3.46	4.22	3.71	3.55	3.81	3.6
Total current liabilities	52.21	51.06	47.59	47.94	46.84	45.42	46.2	44.74
Long-term debt	15.60	16.66	17.47	16.59	15.41	15.92	14.36	16.52
Other long-term liabilities	0.15	0.19	0.16	0.24	0.39	0.47	0.69	0.75
Total liabilities	67.95	67.91	65.23	64.77	62.64	61.81	61.25	62.01
Minority Interests	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Equity								
Preferred stock	1.35	1.21	1.57	1.75	1.8	1.77	1.73	1.62
Common stock	0.04	0.03	0.03	0.03	0.02	0.02	0.02	0.02
Allocated equity	28.50	28.64	30.52	31.13	32.70	33.19	33.38	32.80
Unallocated equity	2.14	2.22	2.67	2.32	2.84	3.21	3.62	3.55
Total equity	32.04	32.09	34.77	35.23	37.36	38.19	38.75	37.99
Total liabilities and equity	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Appendix Table 1 (continued)- **Common-size balance sheet for major dairy cooperatives, 1980-l 995**

	1988	1989	1990	1991	1992	1993	1994	1995
				Number of Cooperatives				
	30	29	29	29	27	27	28	27
					Percent			
Assets								
Current Assets								
Cash and market securities	8.64	7.50	5.67	5.65	6.32	6.84	6.59	6.07
Accounts receivable	32.82	33.38	31.10	30.97	32.47	32.80	33.22	32.54
Inventories	16.05	16.96	19.53	17.71	17.36	18.06	17.46	16.32
Other current assets	0.96	1.03	1.15	1.42	1.15	1.04	1.67	1.11
Total current assets	58.47	58.87	57.44	55.74	57.30	58.74	58.94	56.04
Investments	6.08	6.50	7.24	8.21	7.29	7.10	8.59	10.49
Property, plant, and equipment	33.36	32.71	33.27	33.87	33.58	32.15	30.00	30.26
Other assets	2.09	1.92	2.05	2.17	1.83	2.01	2.47	3.22
Total Assets	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Liabilities and equity								
Current Liabilities								
Current portion of long-term debt	1.58	1.34	1.81	1.36	1.54	1.68	1.88	1.34
Short-term debt	4.96	4.88	6.88	4.47	4.03	4.22	5.67	4.85
Total short-term debt	6.54	6.22	8.69	5.83	5.57	5.90	7.55	6.19
Trade accounts payable	13.87	13.68	14.33	13.85	15.40	15.79	17.29	16.28
Amounts due members	20.36	20.66	18.03	19.09	19.97	20.09	18.73	17.36
Other current liabilities	4.03	4.39	3.73	4.08	4.10	4.22	5.61	6.34
Total current liabilities	44.81	44.94	44.79	42.84	45.04	46.00	49.17	46.17
Long-term debt	15.69	16.44	17.00	17.50	16.25	14.39	11.04	14.25
Other long-term liabilities	0.84	0.82	1.18	0.91	0.92	0.67	1.51	1.40
Total liabilities	61.34	62.21	62.97	81.25	62.21	61.06	61.72	61.81
Minority Interests	0.00	0.00	0.09	0.09	0.04	0.04	0.01	0.12
Equity								
Preferred stock	1.68	1.67	1.69	1.83	1.85	1.85	1.85	1.73
Common stock	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Allocated equity	33.16	32.07	32.42	33.86	32.84	32.75	32.59	29.96
Unallocated equity	3.80	4.04	2.83	2.97	3.06	4.30	3.83	6.38
Total equity	38.66	37.79	36.94	38.66	37.76	38.90	38.27	38.06
Total liabilities and equity	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Appendix Table 2— Consolidated balance sheets for major dairy cooperatives, 1980-l 995

	1980	1981	1982	1983	1984	1985	1986	1987
	Number of Cooperatives							
	24	26	26	27	28	29	30	30
	(thousands)							
Assets								
Current Assets								
Cash and market securities	80,011	97,659	126,978	123,094	162,184	158,493	223,739	234,370
Accounts receivable	623,408	761,919	764,992	857,867	803,455	837,151	883,121	935,792
Inventories	277,710	315,040	366,028	374,782	349,448	417,792	392,499	455,426
Other current assets	11,839	12,481	12,313	14,312	14,841	18,987	44,969	24,719
Total current assets	992,968	1,187,099	1,270,311	1,370,055	1,329,928	1,432,423	1,544,328	1,650,307
Investments	85,838	112,881	150,940	149,912	148,037	141,044	154,278	182,128
Property, plant, and equipment	453,013	554,473	639,863	679,249	701,489	773,252	835,578	913,721
Other assets	39,041	39,331	48,562	58,613	56,755	42,759	56,771	64,389
Total Assets	1,570,860	1,893,784	2,109,676	2,257,829	2,236,209	2,389,478	2,590,955	2,810,545
Liabilities and equity								
Current Liabilities								
Current portion of long-term debt	44,753	50,659	33,990	35,081	38,729	38,824	52,099	53,299
Short-term debt	45,555	71,621	91,178	123,603	130,093	127,071	139,369	129,794
Total short-term debt	90,308	122,280	125,168	158,684	168,822	165,895	191,468	183,093
Trade accounts payable	245,863	287,090	315,866	342,000	331,293	350,614	378,583	421,685
‘Amounts due members	419,619	482,508	489,986	486,363	464,246	483,784	528,167	551,354
Other current liabilities	64,299	75,069	72,964	95,368	83,029	84,932	98,678	101,223
Total current liabilities	820,089	966,947	1,003,984	1,082,415	1,047,390	1,085,225	1 ,196,896	1,257,355
Long-term debt	245,053	315,497	368,646	374,648	344,637	380,373	372,018	464,350
Other long-term liabilities	2,320	3,566	3,433	5,427	8,714	11,346	17,921	21,169
Total liabilities	1,067,462	1,286,010	1,376,063	1,462,490	1,400,741	1,476,944	1,586,835	1,742,874
Minority Interests	138	0	0	0	0	0	0	0
Equity								
Preferred stock	21,195	22,831	33,047	39,597	40,174	42,279	44,752	45,634
Common stock	649	638	559	566	546	558	540	530
Allocated equity	447,773	542,323	643,772	702,838	731,349	793,007	864,966	921,869
Unallocated equity	33,643	41,982	56,235	52,338	63,399	76,690	93,862	99,638
Total equity	503,260	607,774	733,613	795,339	835,468	912,534	1,004,120	1,067,671
Total liabilities and equity	1,570,860	1,893,784	2,109,676	2,257,829	2,236,209	2,389,478	2,590,955	2,810,545

Appendix Table 2 (continued)- **Consolidated balance sheets for major dairy cooperatives, 1980-1995**

	1988	1989	1990	1991	1992	1993	1994	1995
	Number of Cooperatives							
	30	29	29	29	27	27	26	27
	(thousands)							
Assets								
Current Assets								
Cash and market securities	252,658	231,447	175,210	165,172	188,738	206,052	221,517	220,697
Accounts receivable	959,908	1,030,669	961,820	905,949	970,184	988,553	1,117,471	1,184,166
Inventories	469,458	523,755	603,901	518,047	518,838	544,349	587,313	593,972
Other current assets	28,047	31,654	35,647	41,393	34,363	31,386	56,144	40,316
Total current assets	1,710,071	1,817,525	1,776,578	1,630,561	1,712,123	1,770,340	1,982,445	2,039,151
Investments	177,835	200,711	224,029	240,257	217,901	213,926	288,913	381,619
Property, plant, and equipment	975,590	1,009,952	1,028,870	990,807	1,003,444	969,075	1,009,140	1,100,949
Other assets	60,979	59,384	63,274	63,437	54,656	60,524	82,937	117,059
Total Assets	2,924,475	3,087,572	3,092,751	2,925,062	2,988,124	3,013,865	3,363,435	3,638,778
Liabilities and equity								
Current Liabilities								
Current portion of long-term debt	46,328	41,256	55,980	39,651	45,915	50,606	63,105	48,842
Short-term debt	145,050	150,729	212,770	130,852	120,426	127,234	190,678	176,478
Total short-term debt	191,378	191,985	268,750	170,503	166,341	177,840	253,783	225,320
Trade accounts payable	405,576	422,335	443,317	405,088	460,314	476,029	581,438	592,251
Amounts due members	595,541	637,857	557,765	558,255	596,727	605,336	630,122	631,738
Other current liabilities	117,999	135,504	115,397	119,326	122,539	127,293	188,553	230,626
Total current liabilities	1,310,494	1,387,681	1,385,229	1,253,172	1,345,921	1,386,498	1,653,896	1,679,935
Long-term debt	458,821	507,576	525,712	511,740	485,449	433,556	371,180	518,520
Other long-term liabilities	24,608	25,408	36,598	26,717	27,435	20,213	50,792	50,767
Total liabilities	1,793,923	1,920,665	1,947,539	1,791,629	1,858,805	1,840,267	2,075,868	2,249,222
Minority Interests	0	0	2,652	2,542	1,136	1,287	478	4,546
Equity								
Preferred stock	49,058	51,514	52,159	53,593	55,388	55,729	62,185	62,774
Common stock	513	437	42	41	43	37	31	33
Allocated equity	969,901	990,266	1,002,790	990,472	981,248	986,917	1,095,985	1,090,219
Unallocated equity	111,080	124,690	87,569	86,785	91,504	129,628	128,888	231,984
Total equity	1,130,552	1,166,907	1,142,560	1,130,891	1,128,183	1,172,311	1,287,089	1,385,010
Total liabilities and equity	2,924,475	3,087,572	3,092,751	2,925,062	2,988,124	3,013,865	3,363,435	3,638,778

Appendix Table 3— Consolidated income statement by percent total sales for major dairy cooperatives, 1980-l 995

	1980	1981	1982	1983	1984	1985	1988	1987
	Number of Cooperatives							
	24	28	28	27	28	29	30	30
	Percent							
Dairy marketing sales	98.57	98.44	98.58	98.62	98.49	98.52	98.56	98.61
Supply sales	0.58	0.87	0.60	0.57	0.63	0.82	0.62	0.66
Sales	99.13	99.10	99.18	99.20	99.12	99.34	99.18	99.26
Other operating revenues	0.87	0.90	0.82	0.80	0.88	0.66	0.82	0.74
Total sales	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Cost of goods sold	92.08	92.20	92.06	92.06	91.85	91.93	91.23	91.71
Gross margin	7.94	7.80	7.94	7.94	8.15	8.07	8.77	8.29
Administration and selling expense	3.94	3.87	4.12	4.08	4.09	4.10	4.38	4.26
Operating expense	2.75	2.68	2.58	2.75	2.92	2.72	3.08	2.76
Operating margin	1.25	1.25	1.24	1.10	1.14	1.25	1.32	1.27
Interest expense	0.33	0.36	0.38	0.37	0.42	0.36	0.34	0.31
Other income (expense)	0.10	0.12	0.18	0.18	0.17	0.19	0.19	0.21
Net margin from operations	1.02	1.01	1.04	0.91	0.90	1.08	1.17	1.17
Tax provision	0.04	0.05	0.04	0.04	0.03	0.06	0.09	0.08
Net margin after taxes	0.99	0.96	0.99	0.87	0.86	1.02	1.08	1.09
Extra-ordinary income (expense)	0.01	0.00	-0.02	-0.02	0.04	0.00	0.02	0.00
Net margin from continuing operations	1.00	0.96	0.98	0.85	0.90	1.02	1.10	1.09
(Loss) Gain from discontinued operations	-0.08	0.00	-0.01	-0.05	-0.04	0.00	0.01	0.02
Net margins	0.94	0.96	0.97	0.80	0.86	1.03	1.11	1.11
Distribution of Net margins (before taxes):	0.98	1.01	1.02	0.84	0.89	1.09	1.20	1.19
Cash	0.25	0.25	0.23	0.25	0.24	0.27	0.35	0.32
Noncash	0.48	0.51	0.50	0.48	0.39	0.53	0.57	0.61
Stock Dividends	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
Other	0.01	0.01	0.01	0.02	0.02	0.02	0.01	-0.03
Unallocated	0.20	0.19	0.23	0.05	0.20	0.21	0.18	0.20
Taxes	0.04	0.05	0.04	0.04	0.03	0.06	0.09	0.08
Net margins distributed:	0.98	1.01	1.02	0.84	0.89	1.09	1.20	1.19
Net margins before losses	0.98	0.96	0.98	0.88	0.88	1.03	1.13	1.15
Net losses	-0.02	0.00	-0.01	-0.09	-0.02	0.00	-0.02	-0.04
Net margins after losses	0.94	0.96	0.97	0.79	0.86	1.03	1.11	1.11

Appendix Table 3 (cont.)- Consolidated income Statement by percent total sales for major dairy co-ops, 1980-1995

	1988	1989	1990	1991	1992	1993	1994	1995
	Number of Cooperatives							
	30	29	29	29	27	27	26	27
	Percent							
Dairy marketing sales	98.37	98.65	98.26	98.17	98.41	98.20	98.53	98.34
Supply sales	0.88	0.62	0.99	1.06	0.88	1.14	0.86	0.98
Sales	99.25	99.27	99.25	99.23	99.29	99.34	99.39	99.32
Other operating revenues	0.75	0.73	0.75	0.77	0.71	0.66	0.61	0.68
Total sales	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Cost of goods sold	91.34	91.58	92.05	91.50	91.80	91.40	91.64	92.16
Gross margin	8.66	8.42	7.95	8.50	8.20	8.60	8.36	7.84
Administration and selling expense	4.50	4.26	4.61	4.66	4.53	4.36	4.31	3.80
Operating expense	2.80	2.89	2.59	2.92	2.78	3.06	2.89	2.72
Operating margin	1.36	1.27	0.75	0.92	0.89	1.17	1.16	1.32
Interest expense	0.32	0.34	0.38	0.39	0.27	0.29	0.26	0.32
Other income (expense)	0.24	0.34	0.39	0.49	0.25	0.28	0.26	0.20
Net margin from operations	1.28	1.27	0.76	1.01	0.87	1.16	1.16	1.21
Tax provision	0.08	0.08	0.06	0.09	0.09	0.10	0.10	0.14
Net margin after taxes	1.20	1.19	0.70	0.92	0.79	1.06	1.06	1.07
Extra-ordinary income (expense)	0.00	0.01	-0.23	-0.35	-0.13	-0.04	-0.09	0.00
Net margin from continuing operations	1.20	1.20	0.47	0.57	0.66	1.02	0.97	1.07
(Loss) Gain from discontinued operations	0.00	0.00	0.00	0.00	0.00	-0.02	-0.01	-0.01
Net margins	1.20	1.20	0.47	0.57	0.66	1.00	0.97	1.06
Distribution of Net margins (before taxes):	1.28	1.28	0.53	0.66	0.74	1.10	1.07	1.20
Cash	0.36	0.42	0.26	0.26	0.32	0.38	0.34	0.45
Noncash	0.66	0.64	0.41	0.24	0.34	0.43	0.45	0.33
Stock Dividends	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Other	0.03	0.01	0.00	0.00	0.03	0.01	0.03	0.00
Unallocated	0.14	0.11	-0.21	0.06	-0.04	0.18	0.15	0.28
Taxes	0.08	0.08	0.06	0.09	0.09	0.10	0.10	0.14
Net margins distributed:	1.28	1.28	0.53	0.66	0.74	1.10	1.07	1.20
Net margins before losses	1.20	1.20	0.75	0.74	0.84	1.01	1.00	1.02
Net losses	-0.01	0.00	-0.29	-0.18	-0.18	-0.01	-0.03	-0.01
Net margins after losses	1.20	1.20	0.47	0.57	0.66	1.00	0.97	1.01

Appendix Table 4— **Consolidated income Statement totals for major dairy cooperatives, 1980-I 995**

	1980	1981	1982	1983	1984	1985	1986	1987
	Number of cooperatives							
	24	26	26	27	28	29	30	30
	Thousands							
Dairy marketing sales	8,807,103	10,471,440	11,102,384	11,758,601	11,336,291	11,381,517	11,662,991	12,739,279
Supply sales	49,913	70,757	67,740	68,498	72,700	94,907	73,587	84,905
Total sales	8,857,016	10,542,197	11,170,124	11,827,099	11,408,991	11,476,424	11,736,578	12,824,184
Ctheroperating revenues	77,832	95,448	91,856	95,521	101,031	76,565	97,073	95,304
Total revenues	8,934,848	10,637,645	11,261,980	11,922,620	11,510,022	11,552,989	11,833,651	12,919,488
Cost of goods sold	8,225,313	9,807,809	10367,430	10,975,975	10,572,313	10,621,047	10,795,537	11,847,980
Gross margin	709,535	829,836	894,550	946,645	937,709	931,942	1,038,114	1,071,508
Administration and selling expense	351,726	412,160	464,075	486,870	470,388	473,287	517,946	550,421
Operating expense	245,704	284,970	290,700	328,414	335,995	314,302	364,057	356,489
Operating margin	112,105	132,706	139,775	131,361	131,326	144,353	156,111	164,598
Interest expense	29,442	38,136	43,061	43,692	48,254	41,022	40,399	40,105
Other income (expense)	8,562	12,881	20,191	20,891	20,054	21,646	23,068	26,947
Net margin from operations	91,225	107,451	116,905	108,560	103,126	124,977	138,780	151,440
Tax provision	3,177	4,904	4,933	4,911	3,990	7,183	10,796	10,930
Net margin after taxes	88,048	102,547	111,972	103649	99,136	117,794	127,984	140,510
Extra-ordinary income (expense)	1,220	-326	-1,770	-1,845	5,001	272	2,138	202
Net margin from continuing operations	89,268	102,221	110,202	101,804	104,137	118,066	130,122	140,712
(Loss)Gain from discontinued operations	-5,039	-190	-621	-6,169	-5,162	428	1,609	2,473
Net margins	84,229	102,031	109,581	95,635	98,975	118,494	131,731	143,185
Distribution of Net margins (before taxes):	87,406	106,935	114,514	100,546	102,965	125,677	142,527	154,115
Cash	22,194	26,533	25,721	29,341	27,116	30,834	41,052	41,101
Noncash	42,827	54,448	56,798	57,508	45,455	61,376	67,723	79,088
Stock Dividends	347	318	288	310	332	466	641	694
Other	659	643	1,250	1,967	2,566	2,008	1,461	-3,363
Unallocated	18,202	20,089	25,524	6,509	23,506	23,810	20,854	25,665
Taxes	3,177	4,904	4,933	4,911	3,990	7,183	10,796	10,930
Net margins distributed:	87,406	106,935	114,514	100,546	102,965	125,677	142,527	154,115
Net margins before losses	85,695	102,340	110,281	105,014	101,546	118,494	134,248	148,879
Net losses	-1,466	-309	-700	-10,240	-2,859	0	-2,517	-5,694
Net margins after losses	84,229	102,031	109,581	94,774	98,687	118,494	131,731	143,185

Appendix Table 4 (continued)- **Consolidated income statement totals for major dairy cooperatives, 1980-1995**

	1988	1989	1990	1991	1992	1993	1994	1995
	Number of cooperatives							
	30	29	29	29	27	27	26	27
	Thousands							
Dairy marketing sales	13,214,409	13,703,470	14,559,889	13340,027	13,823,461	13,955,676	14444,543	15,374,718
Supply sales	118,366	85,722	147,106	144,125	123,212	162,049	125,869	153,559
Total sales	13332,775	13,789,192	14,706,995	13,484,152	13,946,673	14,117,725	14,570,412	15,528,277
Other operating revenues	100,881	101,378	111,204	104,270	99,803	93,290	89,558	106,290
Total revenues	13,433,656	13,890,570	14,818,199	13,588,422	14,046,476	14,211,015	14,659,970	15634,567
cost of goods sold	12,270,938	12,720,573	13,639,878	12,433,691	12,894,874	12,989,315	13,433,687	14,408,946
Gross margin	1,162,718	1,169,997	1,178,321	1,154,731	1,151,602	1,221,700	1226,283	1,225,621
Administration								
and selling expense	605,078	591,633	682,623	632,643	636,553	620,196	631,339	593,851
Operating expense	375,570	401,299	384,404	397,196	389,902	435,293	424,349	425,123
Operating margin	182,070	177,065	111,294	124,892	125,147	186,211	170,595	206,647
Interest expense	42,666	47,694	56,852	53,495	38,208	40,979	38,339	49,622
Other income (expense)	31,919	47,184	57,977	65,905	35,585	39,632	38,400	32,016
Net margin from operations	171,323	176,555	112,619	137,302	122,524	164,864	170,656	189,041
Tax provision	10,386	11,016	9,296	12,804	12,041	13,702	14,726	22,404
Net margin after taxes	160,937	165,539	103,323	124,498	110,483	151,162	155,930	166,637
Extra-ordinary income (expense)	495	918	-34,166	-47,418	-17,907	-5,998	-13,091	-1
Net margin								
from continuing operations	161,432	166,457	69,157	77,080	92,576	145,164	142,839	166,636
(Loss) Gain								
from discontinued operations	-424	-25	0	0	0	-2,798	-1,073	-1,034
Net margins	161,008	166,432	69,157	77,080	92,576	142,366	141,766	165,602
Distribution of Net margins								
(before taxes):	171,564	177,523	78,611	89,884	104,617	156,068	156,492	188,006
Cash	48,881	58,950	38,157	35,413	45,621	54,296	50,425	70,645
Noncash	88,639	89,227	61,097	32,285	47,205	61,123	65,359	51,037
Stock Dividends	1,106	1,181	1,164	1,223	1,049	1,016	1,014	992
Other	3,387	2,046	0	449	4,799	889	3,694	-604
Unallocated	19,165	15,103	-31,103	7,710	-6,098	24,882	21,274	43,532
Taxes	10,386	11,016	9,296	12,804	12,041	13,862	14,726	22,404
Net margins distributed:	171,564	177,523	78,611	89,884	104,617	156,068	156,492	188,006
Net margins before losses	161,681	166,775	111,837	100,904	117,627	143,435	146,648	159,919
Net losses	-673	-343	-42,680	-23,824	-25,051	-1,069	-4,882	-1,799
Net margins after losses	161,008	166,432	69,157	77,080	92,576	142,366	141,766	158,120

Appendix Table 5— **Consolidated financial ratios for largest dairy cooperatives, 1980-I 995**

	1980	1981	1982	1983	1984	1985	1986	1987
	Number of cooperatives							
	24	26	26	27	28	29	30	30
	Percent							
Return-on-Investment ratios:								
Return on allocated equity	25.33	24.64	20.08	18.71	15.78	18.90	18.67	19.14
Return on equity	22.20	21.17	17.16	16.01	15.27	16.18	15.59	15.46
Return on equity (EBIT)	27.74	27.13	23.09	19.75	21.79	21.54	20.58	19.83
Return on total assets	8.06	7.58	7.42	7.01	5.89	6.76	6.41	6.69
Return on total assets (EBIT)	9.62	9.41	9.29	8.48	8.11	8.63	8.24	8.47
	Times							
Financial leverage ratio:	3.45	3.28	3.01	2.69	2.90	2.80	2.74	2.78
	Percent							
Operating performance ratios:								
Net income to sales	1.70	1.56	1.81	1.80	1.62	1.82	1.78	1.88
Pretax income to sales	1.75	1.61	1.89	1.85	1.66	1.89	1.89	1.98
Operating income to sales	1.81	1.69	1.80	1.79	1.65	1.80	1.79	1.85
Gross margin to sales	8.93	8.36	8.90	9.02	9.97	9.79	10.58	10.43
	Times							
Asset utilization ratios:								
Sales to total assets	**5.44**	5.51	5.24	5.07	4.93	4.69	4.36	4.41
Sales to fixed assets	20.05	18.65	17.64	17.32	16.28	15.81	14.66	14.90
Sales to inventory	46.86	53.94	47.24	49.03	50.49	46.91	51.42	50.38
Sales to accounts receivable	14.73	14.49	15.77	14.05	15.62	13.73	14.52	15.65
Sales to cash	159.52	131.56	159.64	129.24	114.42	137.10	77.05	128.79
	Times							
Capitalization and solvency ratios:								
Times interest earned	11.42	13.44	8.40	5.02	3.55	5.91	7.91	8.22
Long-term debt to equity	0.42	0.42	0.44	0.36	0.39	0.37	0.38	0.39
	Percent							
Equity to total assets	34.42	35.05	38.68	38.92	40.44	40.67	41.10	41.07
Total liabilities to total assets	65.58	64.95	61.32	61.08	59.56	59.33	58.90	58.93
Long-term debt to total assets	11.57	12.28	13.95	13.55	12.74	11.80	12.08	12.55
	Times							
Shot-t-term liquidity ratios:								
Inventory turnover	**N/A**	62.01	47.22	45.04	43.45	46.42	46.36	47.75
Acid test	0.19	0.16	0.29	0.20	0.30	0.27	0.41	0.38
Quick ratio	0.91	0.93	1.05	0.99	1.05	1.02	1.11	1.07
Current ratio	1.22	1.24	1.44	1.36	1.44	1.46	1.49	1.45
Selected CWT ratios:								
Net Income per cwt.							0.39	0.41
Sales per cwt.							18.67	19.79
Total Equity per cwt.							2.25	2.36
Total Assets per cwt.							4.87	5.17
Term Debt per cwt.							0.61	0.68
Billion pounds of milk							2.47	2.51

[1] EBIT-Earnings before interest and taxes are deducted.

Appendix Table 5 (continued)- Consolidated financial ratios for largest dairy cooperatives, 1980-1995

Year	1988	1989	1990	1991	1992	1993	1994	1995
					Number of cooperatives			
Number of cooperatives	30	29	29	29	27	27	26	27
					Percent			
Return-on-Investment ratios:								
Return on allocated equity	20.33	21.77	14.42	8.25	14.18	16.10	15.84	19.44
Return on equity	16.51	18.22	11.31	5.82	i1.37	13.63	13.75	17.00
Return on equity (EBIT)	20.35	21.95	16.19	10.92	14.70	17.84	17.61	20.66
Return on total assets	7.22	7.54	4.86	2.83	4.67	5.53	5.89	6.29
Return on total assets (EBIT)	8.76	9.04	6.59	4.56	5.94	7.23	7.50	7.73
					Times			
Financial leverage ratio:	2.71	2.72	2.73	2.68	2.67	2.60	2.57	2.74
					Percent			
Operating performance ratios:								
Net income to sales	2.02	2.08	1.18	0.62	1.11	1.31	1.35	1.57
Pretax income to sales	2.10	2.17	1.23	0.69	1.18	1.38	1.43	1.68
Operating income to sales	2.00	1.88	1.44	1.05	1.27	1.44	1.52	1.80
Gross margin to sales	11.01	11.70	10.82	9.88	9.47	10.14	9.42	9.58
					Times			
Asset utilization ratios:								
Sales to total assets	4.40	4.30	4.51	4.47	4.62	4.63	4.57	4.34
Sales to fixed assets	14.22	14.18	15.07	14.91	16.49	16.11	15.46	16.84
Sales to inventory	49.52	46.76	41.54	44.37	36.72	35.25	41.07	40.36
Sales to accounts receivable	14.41	14.26	15.87	15.40	14.62	15.06	14.67	13.89
Sales to cash	94.79	158.12	206.38	206.10	184.48	139.54	167.31	176.03
					Times			
Capitalization and solvency ratios:								
Times interest earned	10.51	11.07	4.39	5.65	6.31	5.69	7.55	12.72
Long-term debt to equity	0.35	0.37	0.36	0.35	0.33	0.31	0.27	0.33
					Percent			
Equity to total assets	41.86	41.27	41.15	41.90	41.53	41.98	42.53	39.93
Total liabilities to total assets	58.14	58.73	58.85	58.10	58.47	58.06	57.47	60.07
Long-term debt to total assets	11.58	12.05	12.16	12.42	11.81	11.69	9.83	11.60
					Times			
Short-term liquidity ratios:								
Inventory turnover	46.15	43.59	38.70	33.49	37.45	35.74	36.89	37.54
Acid test	0.39	0.32	0.23	0.19	0.19	0.23	0.18	0.16
Quick ratio	1.09	1.01	0.89	0.87	0.93	0.94	0.90	0.85
Current ratio	1.45	1.41	1.39	1.36	1.39	1.44	1.34	1.29
Selected CWT ratios:								
Net Income per cwt.	0.46	0.44	0.32	0.27	0.29	0.41	0.35	0.40
Sales per cwt.	20.37	20.93	22.21	20.17	21.06	21.40	20.46	20.11
Total Equity per cwt.	2.52	2.61	2.58	2.49	2.41	2.42	2.49	2.60
Total Assets per cwt.	5.43	5.75	5.75	5.42	5.03	5.18	5.07	5.66
Term Debt per cwt.	0.66	0.73	0.77	0.66	0.62	0.61	0.48	0.69
Billion pounds of milk	2.55	2.62	2.77	2.95	2.90	3.19	3.38	3.43

[1] EBIT-Earnings before interestandtaxes are deducted.

U.S. Department of Agriculture

Rural Business-Cooperative Service

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Rural Business-Cooperative Service (RBS) 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 cooperative segment of RBS (1) helps farmers and other rural residents develop cooperatives to obtain supplies and services at lower cost 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. RBS also publishes research and educational materials and issues *Rural Cooperatives* magazine.