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Analysis of Income Statements of Local Farm Supply and Marketing Cooperatives

Abstract

Analysis of Income Statements of Local Farm Supply and Marketing Cooperatives

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This study analyzed income statement variables of local farm supply and marketing cooperatives by looking at trends and current values. The study drew comparisons between different types, sizes, and profitability levels of cooperatives. The major areas studied were income and expenses. Expenses were divided into four categories; administrative, general, labor, and other.

Key words: Cooperatives, income statement, expenses, sales, and net income.

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Preface

This study presented and evaluated revenues and expenses of local cooperatives. Trends of different cooperative sizes, types, and profitability levels were illustrated. The main focus was on revenues, sources of expenses, and how these expenses changed over time. This study should provide cooperative managers and directors with comparative values to help analyze their operations.

Operating statements from 1,336 local farm supply and marketing cooperatives were analyzed in this report. On average, from 1983 to 1990, information from 596 respondent cooperatives in each of the years was studied.

The authors wish to thank the cooperatives that provided financial statements to RDA Cooperative Services. Without the detailed information, this report would not be possible. Special thanks are given to Charles A. Kraenzle and Marc W. Warman, both of RDA Cooperative Services, for their review of the initial draft of this report.

Contents

- Highlightsiv
- Profile of Respondent Cooperatives **1**
 - Cooperative Size 2
 - Cooperative Type **2**
 - Cooperative Profitability 3
- Description of Income Statement *4
- Analysis of the Income Statement 6
 - Net Sales 6
 - Farm Supply Sales 7
 - Marketing Sales 7
 - Cost of Goods Sold 7
 - Gross Margins 8
 - Service and Other Operating Income 9
 - Operating Expenses 9
 - General 9
 - Administrative 12
 - Labor 13
 - Other 15
 - Interest Expense 16
 - Interest and Other Income 18
 - Interest 18
 - Other **18**
 - Income From Own Operations 18
 - Income From Other Cooperatives 19
 - Income Taxes 20
 - Net Income 21
- Conclusions 21
- Bibliography 22
- Appendix 1 23
- Appendix 2 29
- Appendix 3 33

Highlights

Operating statements from 1,336 local farm supply and marketing cooperatives were analyzed in this report. On average, from 1983 to 1990, information from 596 respondent cooperatives in each of the years was studied. For this study, cooperatives were divided into four groups based on their mix of net sales between supplies sold and farm products marketed. They were also divided into four size categories, based on their total sales volume. Analysis was also made on whether the cooperative was profitable or unprofitable based on income from own operations.

Net sales for all respondent cooperatives decreased throughout the early 1980s but rebounded in the late 1980s. In 1990, the average net sales for all cooperatives studied were \$6.7 million. More than 50 percent were small cooperatives with sales of less than \$5 million during the 8 years studied.

Cost of goods sold for farm supply cooperatives was typically lower, hence higher gross margins. As a percent of net sales, gross margins averaged 8.2 percent for all cooperatives and 17.1 percent for farm supply cooperatives. Small cooperatives, most often selling farm supplies, had the highest gross margin for cooperative size, at 10.8 percent.

Operating expenses were separated into four main categories: general, administrative, labor, and other. General expenses averaged about 4.7 percent of net sales for all respondent cooperatives. Depreciation was by far the largest general expense and accounted for more than a third of general expenses throughout the 1980s. Insurance expenses increased nearly 60 percent, from an average \$29,000 in 1983 to \$46,000 in 1990. Marketing cooperatives, with high grain drying expenses, spent four times as much on utilities than farm supply cooperatives did.

Administrative expenses as a percent of net sales fluctuated from a low of 0.9 percent in 1983 to 1.9 percent in 1986. In 1990, the rate was 1.2 percent of net sales. Most farm supply cooperatives had higher administrative expenses than marketing cooperatives. The largest increase in administrative expenses occurred in store and warehouse supplies. They nearly doubled throughout the 1980s. Bad debt expense, which averaged 0.4 percent of net sales from 1983 to 1986, had been reduced to just over 0.1 percent in 1990 for all cooperatives. However, unprofitable cooperatives continued to be plagued by bad debt expense.

By far, the largest expense to cooperatives was labor. Labor expense for all cooperatives increased from 3.9 percent of net sales in 1983 to 5.6 percent in 1990. On average, farm supply cooperatives had higher labor expenses than marketing cooperatives. Benefits expense for all cooperatives grew 3.2 percent per year. On average, these cooperatives employed nearly 15 workers each. Even the smallest cooperatives averaged 8 people.

Interest expenses for cooperatives declined from 1.1 percent of net sales in 1983 to 0.8 percent by 1990. The interest expense decline reflected cooperative efforts in recent years to reduce debt levels. While the use of short-term debt fluctuated, the use of long-term debt steadily declined. Long-term debt fell from an average of \$495,571 in 1983 to \$230,923 in 1990. Because the average amount of assets for all cooperatives was fairly constant throughout the 8 years studied, it was evident that equity financing has replaced term-debt.

Income from own operations as a percent of net sales averaged 1.5 percent for all cooperatives. Farm supply and smaller cooperatives tended to have higher profit margins. About 17.5 percent of the cooperatives were unprofitable during the years of this study. Income from regional cooperatives and **CoBank** were important. They allowed 1 in 7 of the unprofitable cooperatives (based on income from own operations) to have an overall positive net income.

Analysis of Income Statements of Local Farm Supply and Marketing Cooperatives

David S. Chesnick and E. Eldon Eversull

Cooperative managers, faced with the responsibility of controlling operating expenses, needed some “standard” benchmark with which to compare their performance. This report provides averages and trends for operating expenses by cooperative sizes, types, and profitability levels to help cooperative managers analyze their operations.

Local farm supply and marketing cooperatives studied in this report had a combined average net sales of \$7,177,774 and net income of \$125,429. Comparing net income to sales, cooperatives had a return to sales of only 1.8 percent. With small net income, cooperative managers need to be aware of and try to control operating expenses that are above normal levels.

For whatever the reason, operating expenses relative to net sales were excessive for 17.5 percent of the respondent cooperatives. These cooperatives were unprofitable. Additionally, from 1983 to 1990, 121 local cooperatives or 9.1 percent of respondents within this study lost their individual identities, either through mergers, acquisitions, or business failure. For all agricultural cooperatives during this

same time, nearly 4.5 percent per year or 22 percent of all cooperatives lost their individual identities, either through mergers, acquisitions, or business failure. This appeared to indicate that farm supply and marketing cooperatives within this study were more stable. Table 1 shows the total number of all cooperatives that lost their identities and what happened to them. Using this as a proxy for cooperatives in this study, around 48 respondent cooperatives have gone out of business.

PROFILE OF RESPONDENT COOPERATIVES

Agricultural Cooperative Service (ACS) (now Rural Development Administration-Cooperative Services) conducted annual surveys of farmer cooperatives which were the basis for the Farm Supply and Services (FSS) database used for this study. The annual surveys used in this report were from 1983 through 1990. The years **1983, 1987, 1989,** and 1990 were census years for ACS **data** collection. In census years, all agricultural cooperatives were queried. In the other years, only a random

Table 1— Disposition of U.S. agricultural cooperatives no longer operating.

Year	Agricultural cooperatives	Dissolved	Merged	Acquired	Other	Total	Percent of total
1983	5,989	86	57	17	54	214	3.57
1984	5,782	59	49	53	56	217	3.75
1985	5,625	86	41	38	53	218	3.88
1986	5,369	139	57	61	23	280	5.22
1987	5,109	116	47	46	71	280	5.48
1988	4,937	82	32	24	51	189	3.83
1989	4,799	107	55	33	36	231	4.81
1990	4,663	120	41	27	34	222	4.76

Source: USDA, Agricultural Cooperative Service, Statistical and Technical Services Staff, unpublished statistics.

sample of the local agricultural cooperatives were sent a questionnaire. Each year, cooperatives were asked to report the dollar volume of agricultural products marketed and farm supplies sold. Basic balance sheet items (total assets, total liabilities, and net worth) and an income statement item (net income) were also requested.

This basic information has been augmented in the Farm Supplies and Services database by including more income statement and balance sheet items from annual and audit reports sent along with the annual survey. By combining this information with the ACS annual survey data, a more detailed analysis of these cooperatives' income statements and their financial strength was possible. The data included 1,336 cooperatives; however, not all cooperatives responded in each year. Table 2 lists the number of cooperatives entered in the database each year.

To obtain a more complete understanding of the local cooperatives' business, cooperatives were divided into four sizes and four types. The cooperatives were also divided into profitable and unprofitable groupings.

Cooperative Size

Cooperatives were grouped into sizes by sales volumes. The sales volume figures used were actual; no attempt was made to deflate sales volume. Appendix table A1 provides the number of size and type of cooperatives entered each year. Sales groupings used were:

1) Small cooperatives, \$5 million or less;

2) Medium cooperatives, more than \$5 million to \$10 million;

3) Large cooperatives, more than \$10 million to \$20 million; and

4) Super cooperatives, in excess of \$20 million.

The size groupings and names assigned to them were somewhat arbitrary. Clearly, a \$9 million cooperative that exclusively marketed grain was small compared with most grain marketing organizations. However, a strictly farm supply cooperative with sales of \$9 million was quite substantial. In classifying by only net sales, product mix was ignored.

Cooperative Type

To account for differences in operations and orientation based on product mix, cooperatives were grouped into one of four descriptive categories. These types were chosen to represent business operations of these cooperatives as closely as possible. The products marketed and sold were presented in appendix table A2. Categories were:

1) Specialized marketing cooperatives had more than 75 percent of their sales volume from marketing member and nonmember farm products. Up to 25 percent of their sales volume could be from selling farm supplies to their members.

2) From 50 to 75 percent of net sales of mixed marketing cooperatives were derived from products marketed. The remaining 25 to 50 percent of revenues came from farm supply sales.

Table 2— **Agricultural cooperatives in the farm supplies and services database.**

	1963	1964	1965	1986	1967	1966	1989	1990
Cooperatives Surveyed by ACS ¹	5,989	2,418	3,601	2,286	5,109	2,200	4,799	4,663
Cooperatives Included in FSS Database	402	390	465	753	870	611	744	535

¹ A stratified random sample of cooperatives was surveyed in 1984, 1985, 1986 and 1988.

- 3) Mixed farm supply cooperatives derived 50 to 90 percent of their sales volume from selling farm supplies to members and nonmembers. Between 10 and 50 percent of these cooperatives' sales volume came from marketing farm products.
- 4) Specialized farm supply cooperatives had more than 90 percent of their sales volume from selling to members and nonmembers. Few of these cooperatives marketed any farm products.

Of the average 596 cooperatives in every year of this report, 25 percent were specialized marketing cooperatives, 27 percent mixed marketing cooperatives, 10 percent mixed farm supply cooperatives, and 38 percent specialized farm supply cooperatives (table 3). More than half were small, 25 percent medium, 13 percent large, and 7 percent super. Both types of marketing cooperatives tended to be larger while the specialized farm supply cooperatives were most often small.

There were variations in the number of respondents over the 8-year period. Most responses (870) were received in 1987 (Appendix table A1), while the fewest (390) were received in 1984. It must also be noted that few cooperatives responded every year. Because of this, even though an average of 596 responded every year, the data between years may not be completely comparable. The data in the FSS database were not randomly selected and may not be statistically valid to draw **industry-wide** conclusions. However, the sample was large and included a diversified selection of cooperatives throughout the United States. Therefore, the data provided a unique look at cooperative operations.

Cooperative Profitability

Income from own operations **was used** in this study to determine profitable and unprofitable cooperatives. A profitable cooperative, in this study, had to have income for at least 50 percent of the years data was provided. Using this method neutralized the magnitude of profits and losses and **concentrat-**

Table 3— Profile of respondent cooperatives' types by size, average of 1983-90.

Size	Specialized Marketing	Mixed Marketing	Mixed Fan-n Supply	Specialized Farm Supply	Total
<i>Number</i>					
Small	50	61	31	184	326
Medium	41	54	18	37	150
Large	35	28	9	5	77
Super	20	19	3	1	44
Total	146	162	61	227	596
<i>Average</i>					
<i>Percent</i>					
Small	34.25	37.45	49.80	81.05	54.70
Medium	28.08	33.51	29.76	16.14	25.17
Large	23.97	17.14	15.18	2.26	12.92
Super	13.70	11.89	5.26	0.55	7.21
Average	24.50	27.18	10.23	38.09	100.00

ed on whether the operations of the cooperative were sufficient to cover expenses every year. Of the 596 cooperatives, 82.5 percent of the cooperatives were profitable and 17.5 were unprofitable.

DESCRIPTION OF INCOME STATEMENT

The income statement showed the result of operations for the past year. Usually this statement included both the current and the prior year for comparison purposes. This statement included all sources of revenue and expenses. The income statement measures the profitability of the cooperative for a given period of time. Although it does not show timing of cash flows, the income statement best describes the status of the business.

In the analysis of financial statements, it was often instructive to find out the proportion that a

single item represented of a total group or subgroup. In the income statement, net sales were set at 100 percent. Every other item was expressed as a percent of net sales. Because the income statement variables were expressed as a percent of net sales, comparisons were possible between different sizes and types of operations. Thus, the statement used in this report became known as a “common size” income statement. This statement was provided for the average cooperative respondent in table 4. The first item listed on the income statement was the primary source of revenue—farm supplies sold and products marketed.

Cost of goods sold (COGS) was the amount a cooperative paid for the products it sold and marketed. This included the payments to farmers for their products marketed through the cooperative and cost to the cooperative for the supplies sold to farmers. Sales less COGS represented the gross margins on sales.

Service or operational income came from providing services to cooperative patrons. Service included delivery, chemical and fertilizer application, grain drying, and storage. Although substantial for some cooperatives, service income was not considered a primary source of operating revenue.

Operating expenses were those incurred in the course of conducting normal business. They were usually classified by function like general, administrative, labor, and other.

Interest was paid to creditors for the use of their financial capital. This does not, however, include interest paid on past-due accounts payable unless they were converted to notes payable. The interest on the notes would then be included in interest expense.

Interest and other income was acquired by the cooperative through nonoperational activities like interest on cash and cash equivalents; sale of property, plant, and equipment; and other extraordinary gains and losses.

Income from own operations resulted from operations before taxes and income from other cooperatives. In this report, it was the measure of profitability for the cooperative. Income from other cooperatives represented patronage refunds. This income was based on volume of business **conduct-**

Table 4— Average common size income statement for all cooperatives, 1983-90.

	Percent of net sales
Net sales	100.00
Cost of goods sold	91.81
Gross margins	8.19
Service income	5.13
Operating expenses	
General expenses	4.65
Administrative expenses	1.25
Labor expenses	5.29
Other	0.50
Total operating expenses	11.69
Interest expense	1.07
Interest and other income	
Interest income	0.43
Other income	0.56
Income from own operations	1.54
Income from other cooperatives	0.37
Income tax	0.17
Net income	1.75

Table 5— Average common size income statement by size and type, 1983-90.

Item	Small	Medium	Large	Super
<i>Percent</i>				
Net sales	100.00	100.00	100.00	100.00
Cost of goods sold	89.18	89.88	91.85	92.56
Gross margins	10.82	10.14	8.15	7.44
Service income	8.20	4.41	4.31	4.17
Operating expenses				
General expenses	5.62	4.78	4.46	4.26
Administrative expenses	2.05	1.51	1.11	0.93
labor expenses	7.67	6.01	4.82	4.13
Other	0.52	0.50	0.45	0.52
Total operating expenses	15.86	12.80	10.85	9.83
Interest expense	0.99	0.97	0.97	1.13
Interest and other income				
Interest income	0.73	0.51	0.37	0.30
Other income	0.89	0.50	0.45	0.49
Income from own operations	1.79	1.79	1.47	1.43
Income from other cooperatives	0.56	0.34	0.28	0.28
Income tax	0.13	0.16	0.15	0.17
Net income	2.22	1.98	1.59	1.54
	Specialized marketing	Mixed marketing	Mixed farm supply	Specialized farm supply
<i>Percent</i>				
Net sales	100.00	100.00	100.00	100.00
Cost of goods sold	96.10	93.37	89.49	82.86
Gross margins	3.90	6.63	10.51	17.12
Service income	4.12	4.68	5.27	3.68
Operating expenses				
General expenses	3.14	4.09	5.28	6.11
Administrative expenses	0.65	0.93	1.47	2.71
Labor expenses	2.61	4.36	6.91	10.08
Other	0.33	0.49	0.65	0.53
Total operating expenses	6.72	9.88	14.31	19.44
Interest expense	0.82	0.91	1.23	1.20
Interest and other income				
Interest income	0.32	0.38	0.63	0.78
Other income	0.49	0.67	0.75	0.75
Income from own operations	1.30	1.57	1.61	1.69
Income from other cooperatives	0.28	0.32	0.39	0.72
Income tax	0.14	0.18	0.19	0.15
Net income	1.43	1.71	1.82	2.25

ed with the other cooperative and was dependent on the other cooperative's net income. Usually, income from other cooperatives was allocated equity and not actual cash coming into the respondent cooperatives.

Net income was the end result of operations for that year. Distribution of net income was not part of the income statement. The board of directors decides how to distribute net income or allocate a net loss.

ANALYSIS OF THE INCOME STATEMENT

The income statement displays the net results of cooperative operations. Because most managers' performance is judged by net income, members attach great importance to the income statement. This report looks at some underlying values of the income statement and provides some comparisons to help cooperative managers analyze the effect on their cooperative's earnings. Table 5 presents a common size income statement averaged for the 8 years by size and type for the various mix of cooperatives. Appendix tables B1 through B4 provide a complete breakdown of the common size income statement for all types of cooperatives based on size.

Figure 1- Average Net Sales

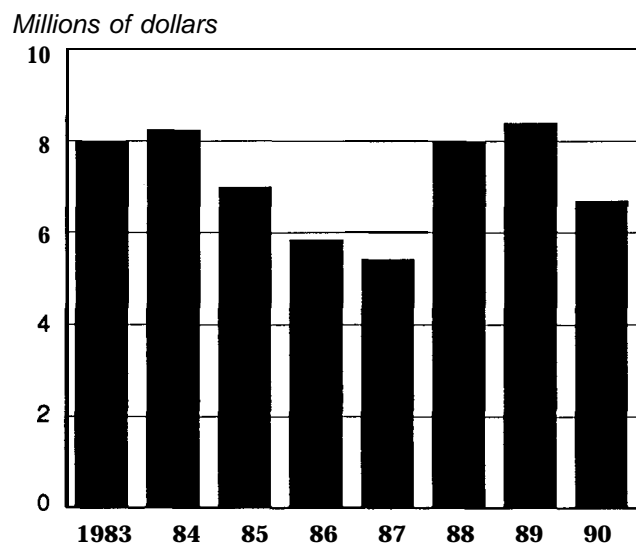


Table 6— Average net sales by co-op size and year.

Year	Small	Medium	Large	Super
<i>Million \$</i>				
1983	2.76	6.86	13.20	29.29
1984	2.25	6.86	13.85	35.55
1985	2.36	6.50	13.25	32.66
1986	2.23	6.55	12.87	28.97
1987	2.12	6.58	13.16	27.71
1988	2.28	7.07	13.20	33.96
1989	2.29	7.10	13.39	35.16
1990	2.34	7.03	13.20	29.57

Table 7— Average net sales by co-op type and year.

Year	Specialized Marketing	Mixed Marketing	Mixed Farm Supply	Specialized Farm Supply
<i>Million \$</i>				
1983	9.14	a.71	7.86	3.70
1984	15.38	11.25	7.84	3.68
1985	11.31	9.31	6.61	3.36
1986	9.46	7.80	5.60	2.85
1987	8.26	7.60	5.05	2.54
1988	13.01	11.39	7.42	3.02
1989	13.35	11.60	6.96	3.43
1990	9.05	8.64	6.30	3.75

Net Sales

The first item of the income statement analyzed in this report was net sales determined by subtracting sales discounts and returns and allowances from gross sales. The average net sales for the 535 cooperatives in 1990 was \$6.7 million, down \$1.7 million from the 744 cooperatives in 1989 (figure 1). The highest average net sales of all cooperatives during the study period—\$8.4 million—was achieved in 1989.

Net sales by cooperative size were presented in table 6. Since 1986, all sizes of cooperatives demonstrated some increases in sales, albeit slightly. During that 4-year period, the average rate of growth in net sales for all sizes of cooperatives was less than 2 percent. However, super-sized **coopera-**

tives fluctuated substantially during that period but their overall growth rate was less than 2 percent.

Table 7 shows sales by cooperative type. Both mixed and specialized marketing cooperatives in general had higher net sales than mixed farm and specialized farm supply cooperatives. While specialized farm supply cooperatives tended to have substantially less sales than both types of marketing cooperatives, their sales were not subject to the fluctuations in grain prices and yields and therefore considered more stable.

Farm Supply Sales-The cooperatives in this report sold six major types of farm supplies (figure 2). Because these cooperatives were divided into four types, the level of farm supply sales varied in terms of their importance to net sales. During this study period, farm supply sales relationship to net sales went from 37 percent in 1983 to 58 percent in 1990 (figure 3). Of farm supply products sold, petroleum was the highest, averaging 27 percent during the study period (Appendix table A2). Fertilizer and feed were next.

Marketing Sales-Grain and oilseed cooperative sales made up the vast majority of marketing sales. Grains marketed varied by region but were generally

corn and wheat. Soybeans had the largest amount of oilseed sales. Cooperatives studied also marketed cotton and rice. The breakdown of marketing sales by all cooperatives was presented in appendix table A3.

Cost of Goods Sold

Cost of goods sold (COGS) represented the largest single component of expenses, usually expressed as a percent of net sales. For this study, COGS includes the beginning inventory plus purchases and freight costs, minus purchase returns and allowances, purchase discounts, and ending inventory. So, for these cooperatives, COGS was the purchase price of the farm supplies sold or products marketed. Table 8 shows COGS as a percent of net sales for the different types of cooperatives. Both types of marketing cooperatives had a relatively high COGS, which was to be expected because they were generally marketing grain for their patrons with only a few cents per bushel margin.

For all types except mixed farm supply cooperatives, COGS as a percent of net sales was lower in 1990 than in 1983. Mixed farm supply cooperatives remained fairly constant over that period. Specialized farm supply cooperatives made the greatest effort at lowering COGS, from 85.2 percent in 1983 to 81.5 percent in 1990.

Figure 2— Sources of Farm Supply Sales

Millions of dollars

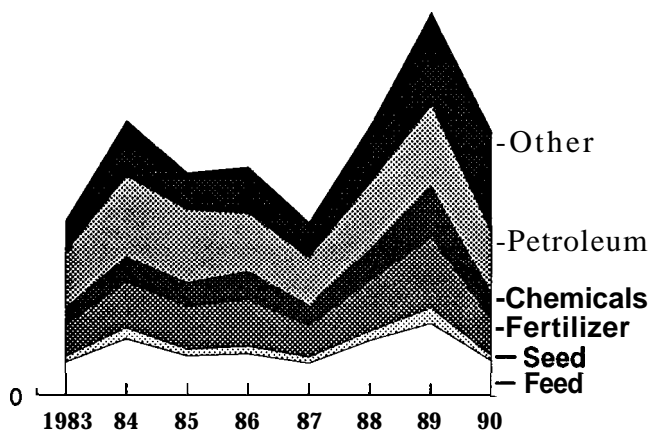


Figure 3— Sources of Revenue

Percent

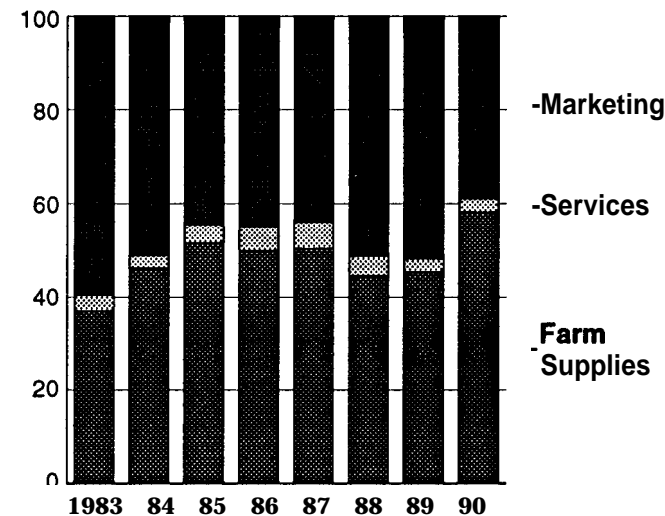


Table 8— Cost of goods sold as a percent of net sales by type of cooperative and year.

Year	Specialized marketing	Mixed marketing	Mixed farm supply	Specialized farm supply
	<i>Percent</i>			
1983	98.00	94.90	87.99	85.19
1984	97.81	94.26	90.43	83.84
1985	94.24	91.56	91.21	84.56
1988	94.52	91.98	86.10	81.54
1987	94.45	92.38	88.38	81.71
1988	97.02	92.34	92.63	82.60
1989	97.15	95.22	90.07	81.45
1990	95.89	93.60	87.99	81.54
Average	96.10	93.37	89.49	82.88

Gross Margins

Gross margins were the excess of net sales over the cost of goods sold. It is commonly expressed as a percent of net sales. Stated as such, the gross margin averaged 8.2 percent for all cooperatives. The gross margin or gross margin percentage is a very important operating ratio. A small change in the gross margin has a tremendous impact on income from own operations. A cooperative manager must maintain a gross margin near industry averages. Thus, least cost sources of supplies need to be developed and marketing cooperatives cannot pay over market rates on the products they purchase.

Cooperatives are often characterized as businesses that provide goods and services “at cost.” However, a cooperative cannot operate at cost on a day-to-day basis. Therefore, unless a cooperative has an adequate gross margin, it can neither be profitable nor afford to finance essential future-directed discretionary expenditures such as expansion and advertising.

Because by definition, gross margin equals net sales less cost of goods sold, those cooperatives with higher COGS had lower gross margins. COGS were higher for marketing cooperatives and larger cooperatives, so gross margins as a percent of net

sales were highest for farm supply and small cooperatives. Specialized farm supply cooperatives—17.1 percent—had the highest gross margin. Although both types of farm supply cooperatives had less business volume than cooperatives that performed marketing activities, their gross margin percentage was from 4 to 10 percentage points higher. Small cooperatives, most often selling farm supplies, had the highest gross margin by size, at 10.8 percent.

When analyzing gross margins, particular attention needs to be paid to factors that account for the changes in and the relationship between sales and COGS and management’s ability to control this relationship. A detailed analysis of changes in gross margins can generally only be performed internally by management. The data required includes the number of physical units sold, unit sales prices, and unit cost. Because the data needed to breakdown gross margins by physical units of products sold was not available for this study, a detailed analysis of cooperative gross margins is not included. However, an example is provided in appendix 3 for those who want to perform such an analysis.

Table 9 illustrates gross margins by size and type for both profitable and unprofitable cooperatives. On average, the more profitable cooperatives had a slightly higher gross margin percentage than

Table 9— Average gross margins as a percent of net sales by size and type and profitability levels, 1983-90.

Size/type	Profitable	Unprofitable	Difference
	<i>Percent</i>		<i>%points</i>
Small	11.32	8.55	2.77
Medium	10.38	8.21	2.17
Large	8.18	7.97	0.21
Super	7.38	6.44	0.94
Specialized marketing	3.94	3.24	0.70
Mixed marketing	7.01	3.72	3.29
Mixed farm supply	10.91	8.69	2.22
Specialized farm supply	17.67	14.59	3.08

the less profitable ones. When separated by size, there was a difference of more than 2 percentage points between profitable and unprofitable operations among the small- and medium-sized cooperatives. Small profitable cooperatives, usually farm supply cooperatives, had the highest gross margin percentage (11.3 percent) based on size. Although the large- and super-sized cooperatives showed a difference between the profitable and unprofitable cooperatives, the magnitude of the difference was smaller. Appendix tables A4 and A5 present gross margins for profitable and unprofitable cooperatives by size and type for the entire 8-year period.

Specialized marketing cooperatives did not exhibit a substantial difference between profitable and unprofitable cooperatives while the other three types differed considerably- between 2.2 and 3.3 percentage points. There are several explanations for their differences. Unprofitable cooperatives may be in more competitive markets and forced to operate with lower margins. Profitable cooperatives with higher margins might indicate that the cooperative has access to more suppliers and can shop for a better price.

Service and Other Operating Income

Service and other operating income, for the most part, consisted of trucking services (both delivery of purchases to patrons and transfer of their products to market), custom application of fertilizers and agricultural chemicals, and drying and storing of grains and oilseeds. Local cooperatives provided many other services to their patrons, but these were the primary ones of the respondent cooperatives. Service and other operating income averaged between 3 and 5 percent of net sales for all sizes and types except small and mixed farm supply cooperatives (table 5).

Operating Expenses

Operating expenses were divided into four main categories-general, administrative, labor, and other. General expenses included many of the fixed expenses directly related to revenue production. Administrative expenses included many variable and overhead costs associated with a cooperative and indirectly related to revenue production.

Table 10 illustrates the percent of total operating expenses that each of the four main categories comprised. Labor and general expenses made up the bulk of total expenses, each at least 37 percent in every year. Labor expenses appeared to be heading upward although all other operating expenses were either flat or declining.

General/ expenses-General expenses were usually fixed in the short run and associated with the production of income. Management usually does not have direct control over these expenses. Depreciation was by far the largest general expense.

General expenses, at 3.1 percent of net sales, were the lowest for specialized marketing cooperatives (table 5). For all types and sizes of cooperatives, general expenses averaged between 3.1 and 6.1 percent of net sales from 1983 to 1990. When compared with total operating expenses, general expenses have hovered around 40 percent of total expenses for all respondent cooperatives.

There have been substantial changes in the makeup of general expenses, except depreciation which consisted of roughly a third of general expenses (figure 4). The amount of expense allocated to rent and lease and utilities declined from 1983 to 1990. Simultaneously, insurance costs nearly doubled.

Table 10- General, administrative, labor, and other expenses as a percent of operating expenses, by year.

Year	General	Administrative	Labor	Other
<i>Percent</i>				
1983	41.70	10.01	43.26	5.03
1984	38.88	12.09	45.03	4.00
1985	40.29	11.96	43.04	3.91
1986	39.54	11.93	44.18	4.35
1987	40.33	10.23	45.25	4.19
1988	40.80	9.32	45.40	4.40
1989	39.22	9.76	46.69	4.33
1990	37.32	10.52	47.97	4.19
Average	39.76	10.72	45.22	4.30

Figure 4— Average General Expenses as a Percent of Total Expense

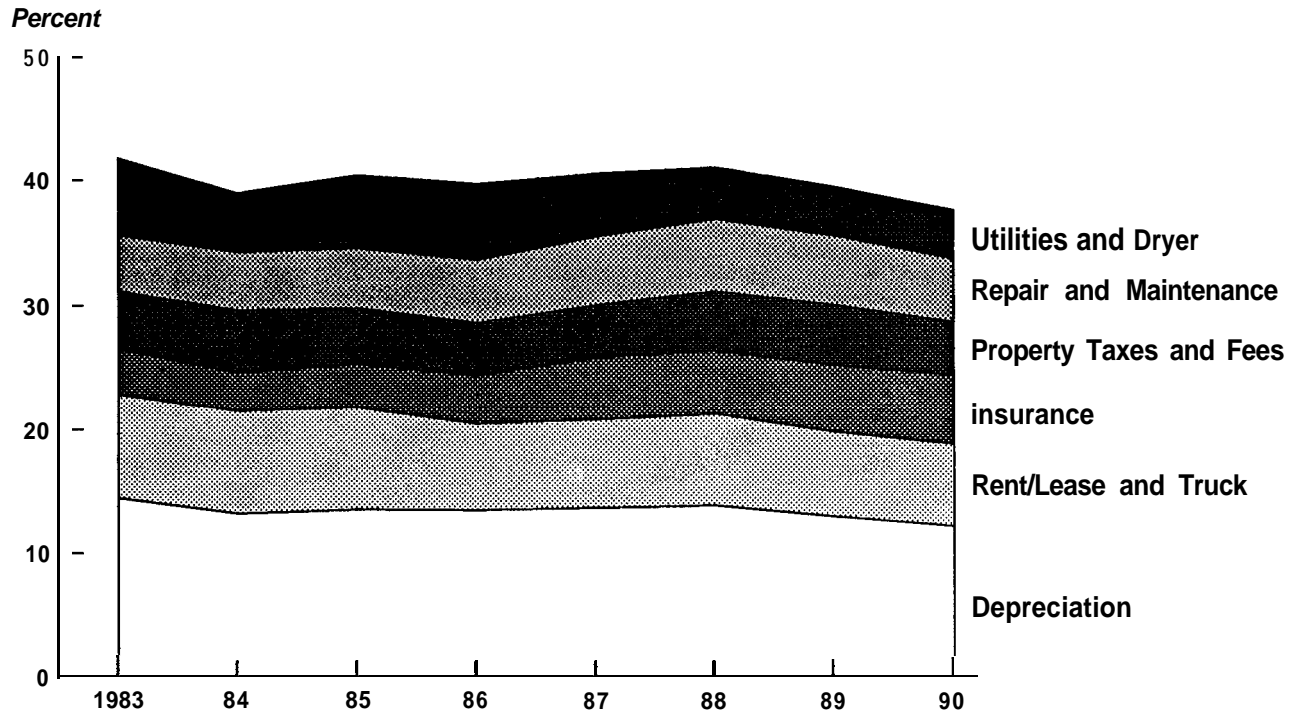


Figure 5— Average Administrative Expenses as a Percent of Total Expense

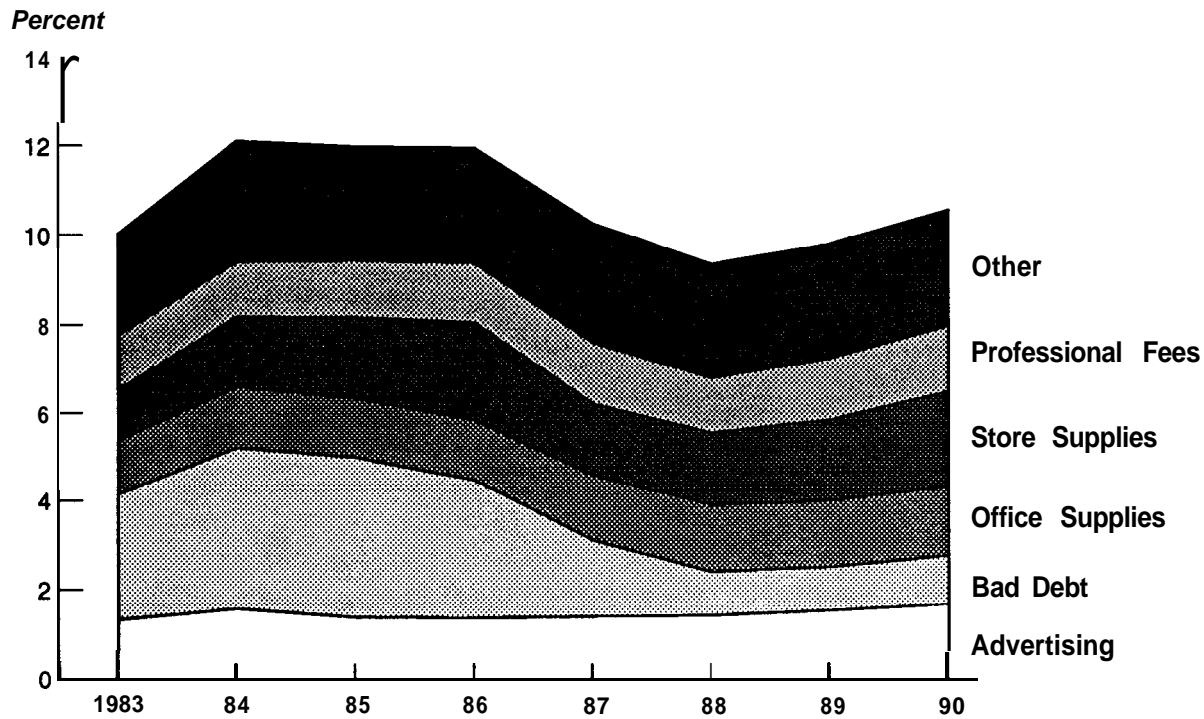


Table 11— Average general expenses as a percent of net sales by size and type, 1983-90.

Item	Small	Medium	Large	Super
<i>Percent</i>				
Depreciation	1.05	1.63	1.58	1.37
Rent or lease	0.23	0.19	0.21	0.33
General insurance	0.80	0.56	0.46	0.41
Property tax	0.38	0.37	0.40	0.33
Other taxes and fees	0.16	0.17	0.16	0.15
Repair and maintenance	0.72	0.61	0.55	0.58
Auto and truck	0.83	0.67	0.53	0.49
Utilities and dryer	0.64	0.56	0.57	0.61
Total general	5.62	4.70	4.46	4.26

Item	Specialized marketing	Mixed marketing	Mixed farm supply	Specialized farm supply
<i>Percent</i>				
Depreciation	1.11	1.37	1.73	1.91
Rent or lease	0.23	0.23	0.26	0.16
General insurance	0.32	0.44	0.59	0.78
Property tax	0.29	0.33	0.39	0.36
Other taxes and fees	0.08	0.13	0.12	0.46
Repair and maintenance	0.37	0.56	0.72	0.77
Auto and truck	0.26	0.51	0.89	1.14
Utilities and dryer	0.48	0.53	0.57	0.51
Total general	3.14	4.09	5.28	6.11

Table 12— Average general expenses as a percent of net sales for profitable and unprofitable cooperatives, 1983-90.

	Profitable	Unprofitable	Difference
	<i>Percent</i>		<i>% points</i>
Depreciation	1.56	1.55	0.01
Rent or lease	0.26	0.35	-0.09
General insurance	0.51	0.57	-0.06
Property tax	0.36	0.37	-0.01
Other taxes and fees	0.15	0.34	-0.19
Repair and maintenance	0.60	0.57	0.03
Auto and truck	0.61	0.61	0.00
Utilities and dryer	0.58	0.59	-0.01
Total general	4.64	4.94	-0.30

Listed in table 11 are the categories included in general expenses by size and type along with the average percent of net sales that each general expense represented. When comparing general expenses by cooperative size, the main difference from small- to super-sized cooperatives appeared to be the decrease in depreciation, insurance, and auto and truck expense (Appendix tables B1 through B4). Depreciation decreased from 1.9 percent of net sales for small cooperatives to 1.4 percent for super-sized cooperatives.

By cooperative type, depreciation, insurance, repairs and maintenance, other taxes and fees, and auto and truck expenses were higher for the farm supply cooperatives (Appendix tables B1 through B4). Rent and lease expenses declined greatly for both types of marketing cooperatives. Much of this rent and lease expense incurred in the early 1980s was for long-term leases on railroad grain hopper cars. The shortage of hopper cars in the 1970s encouraged marketing cooperatives to lease them to assure a supply. That shortage seemed to have been abated by the mid 1980s and rent and lease expenses declined. Also, the Commodity Credit Corporation (CCC) grain storage program was scaled back by 1988, further reducing the need to rent or lease additional temporary facilities.

Depreciation expense for marketing cooperatives was larger than for farm supply cooperatives in dollar terms due to higher investments in property, plant, and equipment—probably grain storage facilities. Also, marketing cooperatives had higher levels of utility and dryer expenses in some years, mainly due to grain drying expenses. However, when expressed as a percent of net sales, depreciation expenses and utilities and dryer expenses were generally less for marketing cooperatives.

In every category of general expense except investment in capital equipment (depreciation and repairs and maintenance), the profitable cooperatives had a smaller percent of net sales used for general expenses than unprofitable cooperatives (table 12). When comparing profitable and unprofitable cooperatives, the largest differences were other taxes and fees, rent and lease, and insurance (Appendix table A6).

Administrative Expenses-Administrative expenses (table 13) were those indirectly involved with generating income. Managers usually had more control over administrative expenses than over any other cost. In years when revenues were down for whatever reason, managers could reduce expenses in this area more easily than in other categories.

Figure 5 shows administrative expenses as a percentage of operating expenses for all cooperatives included in the study. Bad debts were the largest administrative expense in the early 1980s,

comprising almost a third of the total. Bad debts declined from 0.5 percent of net sales in 1985 and 1986 to 0.1 percent by 1990. Store and warehouse supplies made up the bulk of administrative expenses as a percent of net sales in 1990, at 0.3 percent, while advertising made up 0.2 percent, office supplies 0.2 percent, and professional fees 0.2 percent (Appendix tables B1 through B4).

By cooperative size, administrative expenses as a percent of net sales were highest for **small**-sized cooperatives at 2.1 percent and dropped to 0.9 percent for super-sized cooperatives (table 13).

Table 13— Average administrative expenses as a percentage of net sales by size and type, 1983-90.

Item	Small	Medium	Large	Super
<i>Percent</i>				
Advertising	0.29	0.21	0.14	0.11
Contributions and donations	0.02	0.01	0.01	0.02
Dues and subscriptions	0.05	0.03	0.03	0.02
Bad debt	0.46	0.32	0.23	0.15
Office supplies and postage	0.26	0.20	0.15	0.12
Store and warehouse supplies	0.28	0.26	0.20	0.18
Telephone and marketing service	0.14	0.12	0.09	0.10
Travel and meetings	0.12	0.10	0.07	0.06
Annual meeting	0.06	0.04	0.04	0.04
Board of directors	0.08	0.05	0.03	0.02
Professional fees	0.29	0.18	0.13	0.11
Total administrative	2.05	1.51	1.11	0.93
	Specialized marketing	Mixed marketing	Mixed farm supply	Specialized farm supply
<i>Percent</i>				
Advertising	0.06	0.12	0.20	0.44
Contributions and donations	0.00	0.02	0.01	0.07
Dues and subscriptions	0.02	0.02	0.02	0.06
Bad debt	0.13	0.17	0.39	0.56
Office supplies and postage	0.09	0.13	0.19	0.31
Store and warehouse supplies	0.10	0.15	0.20	0.48
Telephone and marketing service	0.06	0.08	0.13	0.18
Travel and meetings	0.04	0.06	0.10	0.15
Annual meeting	0.02	0.03	0.04	0.09
Board of directors	0.02	0.03	0.04	0.08
Professional fees	0.09	0.12	0.14	0.30
Total administrative	0.65	0.93	1.47	2.71

Administrative expenses were highest for specialized farm supply cooperatives at 2.7 percent of net sales and lowest for specialized marketing cooperatives at 0.7 percent.

There were a few major differences when administrative expenses were compared between profitable and unprofitable cooperatives (table 14). The biggest differences were bad debt expense and professional fees. For the 8 years studied, the non-profitable cooperatives averaged 51 percent higher bad debt expenses than profitable cooperatives (Appendix table A7).

Bad debts as a percent of administrative expenses were especially high during 1983-86 when the prime interest rate was near or higher than 10 percent. Farmers were borrowing money for operating loans at even higher rates and often were financing some of their purchased supplies (feed, seed, fertilizer, and agricultural chemicals) on credit at their local cooperative. As farmers found they could no longer stay in business, many defaulted on loans and could not repay credit purchases. Because of the downturn in the farm economy, many cooperatives' accounts receivable

became bad debts. But as farm income increased through the late 1980s and interest rates declined, both profitable and unprofitable cooperatives reduced their bad debt expenses by 10 percentage points.

Professional fees for the more profitable cooperatives averaged 0.15 percent of total net sales with a high in 1986 of 0.2 percent. The less profitable cooperatives had professional fees averaging around 0.2 percent with a high in 1986, 1987 and 1990 of nearly 0.3 percent. In many cases with unprofitable cooperatives, this professional fee constituted fees paid to lawyers and accountants for help in restructuring debt. Cooperatives also turned to the legal system for help in collecting overdue accounts.

Labor Expense-Labor expenses- salaries and wages, benefits, payroll taxes, and **pensions**—averaged 4.4 percent of net sales for all respondent cooperatives throughout the 8-year period. They had the highest increase in operating expenses during the study period, rising from 3.9 percent of net sales in 1983 to 7 percent in 1986, but declined to 5.6 percent in 1990.

Table 15 lists the average of all labor expenses as a percentage of net sales for each category during the 8 years. Labor expense divided by sales is also a good indication of labor efficiency. It illustrates how labor is used to generate an amount of sales. If this number increases over a period of years, it indicates marginal use of labor is becoming more expensive.

As a percent of net sales, labor expenses decreased as the cooperative size increased. The average labor expenses decreased from 7.7 percent of net sales for small cooperatives to 4.1 percent for super cooperatives. By type, total labor expenses as a percent of net sales increased from 2.6 percent for specialized marketing cooperatives to 10.1 percent for specialized farm supply cooperatives.

Farm supply cooperatives tended to be more labor intensive and many operated several stores. Operating a feed mill or service station, applying chemicals and fertilizers, and selling hardware required the use of several employees. The smaller marketing cooperatives used fewer employees,

Table 14— Average administrative expenses as a percent of net sales for profitable and unprofitable cooperatives, 1983-90.

Item	Profitable	Unprofitable	Difference
	----- Percent -----		% points
Advertising	0.17	0.19	-0.02
Contributions and donations	0.01	0.01	0.00
Dues and subscriptions	0.03	0.04	-0.01
Bad debt	0.23	0.47	-0.24
Office supplies and postage	0.16	0.18	-0.02
Store and warehouse supplies	0.21	0.22	-0.01
Telephone and marketing service	0.10	0.11	-0.01
Travel and meetings	0.08	0.08	0.00
Annual meeting	0.04	0.04	0.00
Board of directors	0.04	0.05	-0.01
Professional fees	0.15	0.21	-0.06
Total administrative	1.22	1.60	-0.38

often having only a manager, bookkeeper, and two or three employees.

Salaries and wages decreased from 6.3 percent of net sales to 3.5 percent as cooperative size increased from small to super. Salaries and wages as a percent of net sales increased — ranging from

2.1 percent for specialized marketing to 8.3 percent for specialized farm supply.

Benefits expense for all sizes and types of cooperatives averaged between 0.2 and 0.7 percent of net sales (table 15). The dollar value of benefits offered employees increased 3.2 percent per year. This rate of increase was 1 percent faster than the growth in total labor expenses. Employee benefits included health, life, and disability insurance; educational assistance; use of transportation; and uniforms. The major proportion of benefits expense was health insurance.

Payroll taxes ranged from 0.2 to 0.7 percent of net sales. Payroll taxes were fixed by law and directly proportional to wages and salaries. Because of this, payroll taxes in dollar terms were higher for larger cooperatives. Because wages and salaries were a higher proportion of net sales for farm supply cooperatives, payroll taxes were also higher.

Pension plans included both established retirement plans with employer contributions and profit sharing plans. A recent survey by ACS (now RDA-Cooperative Services) found that cooperatives used numerous types of pension plans [Rotan, p. 10]. Twenty-two percent of the cooperatives in the Rotan survey had no pension plan and 20 percent had a defined plan where the cooperative paid

Table 15— Average labor expenses as a percentage of net sales by size and type, 1983-90.

Item	Small	Medium	Large	Super
<i>Percent</i>				
Salaries & wages	6.30	4.94	3.97	3.46
Benefits	0.59	0.45	0.37	0.29
Payroll tax	0.58	0.43	0.31	0.26
Pension	0.20	0.19	0.18	0.12
Total labor	7.67	6.01	4.82	4.13

item	Specialized marketing	Mixed marketing	Mixed farm supply	Specialized farm supply
<i>Percent</i>				
Salaries & wages	2.13	3.63	5.59	8.34
Benefits	0.22	0.32	0.55	0.70
Payroll tax	0.17	0.27	0.51	0.72
Pension	0.08	0.14	0.24	0.32
Total labor	2.61	4.36	6.91	10.08

Table 16— Average number of full-time employees and labor expense, net sales, and income from own operations per employee, 1983-90.

Size/type	Average number of employees	Average labor expense per employee	Average net sales per employee	Average income from own operations per employee
	<i>Number</i>		<i>Dollars</i>	
Small	7.8	21,808	346,121	5,277
Medium	14.3	25,196	626,317	8,435
Large	21.2	26,450	816,598	8,950
Super	50.8	27,364	824,714	8,717
Specialized marketing	14.0	24,693	960,420	9,979
Mixed marketing	19.1	24,693	585,331	7,679
Mixed farm supply	21.7	23,961	398,520	4,812
Specialized farm supply	11.6	21,908	257,424	5,055
Average	14.7	23,892	538,486	7,359

Table 17— Labor efficiency, average labor expense to net sales for profitable and unprofitable cooperatives, by size and type.

Size/type	Profitable	Unprofitable	Difference
	----- Percent	-----	% points
Small	7.55	7.85	-0.30
Medium	5.96	5.81	0.15
Large	4.69	5.28	-0.59
Super	4.06	3.45	0.61
Specialized marketing	2.50	3.12	-0.62
Mixed marketing	4.41	3.94	0.47
Mixed farm supply	6.88	6.98	-0.10
Specialized farm supply	9.86	10.19	-0.33

100 percent of the cost. Eighteen percent of the cooperatives matched up to 5 percent of employees' salaries and 10 percent used a form of profit sharing program and 401 (k) plans.

In this study, on average, 402 cooperatives provided labor expense information that broke out this expense into more than just a summary category of all labor-related expenses. Of these 402 cooperatives, 176 or 44 percent had some form of pension plan. The average total pension plan expenses for these cooperatives was \$10,859. Pension expense was 0.17 percent of net sales and 7.1 percent of income from own operations. Because pension plans were often related to profitability, pension expenses and income from own operations were lower in the early 1980s, but started to rise in 1988 as income from own operations increased.

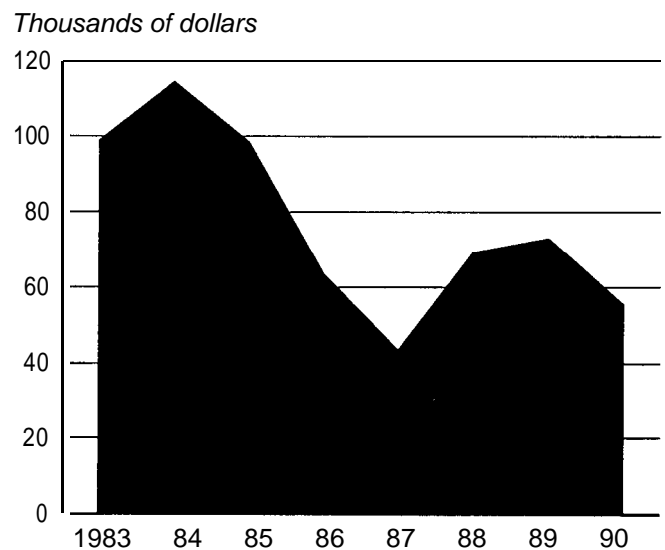
Cooperatives had an average of nearly 15 full-time employees. Table 16 lists the average number of employees for each size and type of cooperative and labor expense, net sales per employee, and income from own operations each employee generated. By cooperative size, the number of employees and labor expenses relative to both net sales and income from own operations were mostly as expected. Smaller cooperatives have fewer employees, lower salaries, less sales per employee, and smaller income from own operations per employee. The only exception was in super-size cooperatives where income from own operations per employee was \$200 less than in large cooperatives.

On average, marketing cooperatives paid from \$700 to \$3,000 more per employee for labor than farm supply cooperatives did. However, the amount of net sales each employee generated ranged from \$200,000 to \$700,000 greater than for farm supply cooperatives. Income from own operations per employee was also \$3,000 to \$5,000 higher for marketing cooperatives than for farm supply cooperatives.

Table 17 illustrates the labor efficiency for different sizes and types of cooperatives, based on profitability (Appendix table A8). It is interesting to note that there appears to be no distinct relationship between profitability and efficient use of labor.

Other Expenses—Other expenses were those the cooperative considered insignificant when considered individually. That is, they were not directly allocated to a specific account and were lumped together in a general account called other expenses. For all sizes and types of cooperatives, other expenses were less than 0.7 percent of net sales. It also must be noted that what some cooperatives consider insignificant, others may consider significant.

Figure 6— Average Interest Expense



Interest Expense

Interest expenses resulted from borrowing funds for both short and long-term needs. **Short-term** borrowing of funds (short-term debt) was often for operational expenses and both the principal and interest of the loan were due within 1 year. Long-term borrowing (long-term debt) financed investments in property, plant, and equipment and the principal and interest were due in periods in excess of a year.

Interest expenses among these cooperatives have been declining (figure 6). The decline was attributable to both carrying less debt and lower interest rates. During the time period of this study, the rate of interest on 6-month Treasury bills fell more than 1 percentage point (table 18). The prime interest rate also fell by nearly 0.8 points. Interest expenses for all cooperatives fell from a high of 1.4 percent of net sales in 1985 to a low of 0.8 percent in 1987. With interest rates rising, interest expenses rebounded to 0.83 percent of net sales in 1990.

Average effective interest rate is a proxy for the cooperatives' cost of borrowed money. Here's how the average effective interest rate paid is calculated:

$$\frac{\text{total interest cost}}{\text{average total indebtedness subject to interest}}$$

The average effective interest rate paid can be compared over the years and with other coopera-

tives. Table 18 compares short-term (6-month Treasury bill rate) and long-term (prime) rates as well as the effective interest paid by different sizes of cooperatives. The effective interest rate for both large and small cooperatives was 11.3 percent while the rate was 12 percent for medium and 12.2 for super-size cooperatives. The effective rate only fell below 10 percent in 1987 (9.6 percent) and 1988 (9.1 percent). The calculation of the effective interest rate somewhat overstates the real rate of interest for cooperatives, due in part to some loans being paid off during the year and not being fac-

Table 19— Use of short-term debt compared with long-term debt, by year.¹

Year	Small	Medium	Large	Super	Average
1983	1.06	1.18	0.93	0.62	0.95
1984	1.40	1.25	1.21	0.98	1.21
1985	1.21	0.93	0.93	0.66	0.93
1986	1.02	0.73	0.79	0.68	0.81
1987	1.00	1.10	1.00	0.94	1.01
1988	1.48	1.98	2.32	2.63	2.10
1989	1.38	1.87	1.64	1.40	1.57
1990	1.40	1.48	1.91	1.37	1.54
Average	1.24	1.32	1.34	1.16	1.27

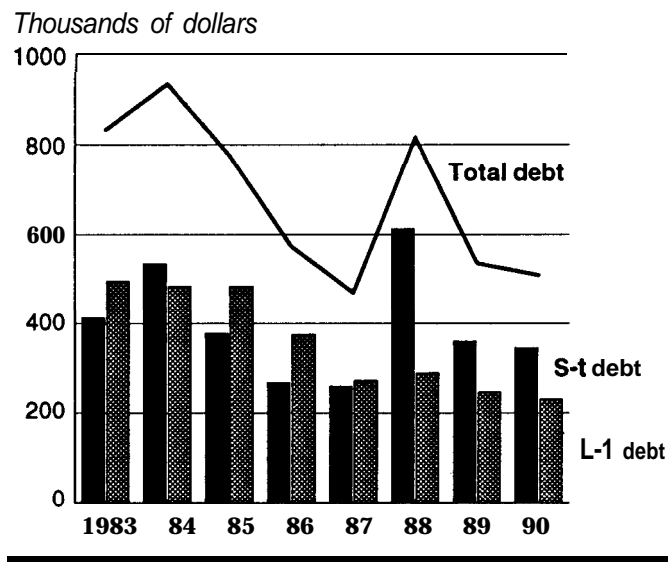
¹ Ratio of short-term debt divided by long-term debt. If the ratio is greater than 1, more short-term debt is being used.

Table 18— Market interest rates and interest paid by cooperatives.

Year	6-month Treasury bill	Prime rate	Average effective interest rate paid by cooperatives ¹			
			Super	Large	Medium	Small
Percent						
1983	8.75	10.79	12.86	11.31	12.14	12.02
1984	9.80	12.04	12.16	12.86	13.32	12.49
1985	7.66	9.93	13.00	13.11	14.68	12.52
1986	6.03	8.33	11.62	10.70	12.73	11.79
1987	6.05	8.21	9.47	8.91	9.94	10.14
1988	6.92	9.32	9.13	9.03	8.49	9.89
1989	8.04	10.87	16.79	13.77	12.76	11.67
1990	7.47	10.01	12.29	10.92	11.94	9.80

¹ The average effective interest rate = total interest cost/average total indebtedness subject to interest.

Figure 7— Types of Debt



tored into the calculation of total debt while the interest paid on these loans is included in interest expense.

A short-term versus long-term debt ratio has been developed in table 19. A number higher than 1 indicates more short-term debt was being used while a number lower than 1 indicates greater use of long-term debt. Short-term loans usually carry lower interest rates than long-term loans. The average medium and large cooperatives used more short-term debt than small- and super-size cooperatives. But, small cooperatives always used more short-term than long-term debt. Short-term debt was used more often by all sizes of cooperatives from 1987 to 1990 than from 1983 to 1986.

With the exception of 1988, cooperatives have been using less debt (figure 7). Along with declining debt, cooperatives decreased their financial leverage. Cooperatives used less debt and more equity to finance their assets. Table 20 shows the percentage of assets financed by debt. Financial leverage is defined here as the ratio of debt to assets, which indicates the percent of assets financed by debt. The lower the percentage, the more conservative the financial structure of the cooperative. Leverage benefited the cooperative and its members when the return on the coopera-

tive's assets was greater than the fixed interest payments on the debt, thereby giving a greater return to member equity. However, if the return on assets was less than the interest payments, members had a lower return on their equity.

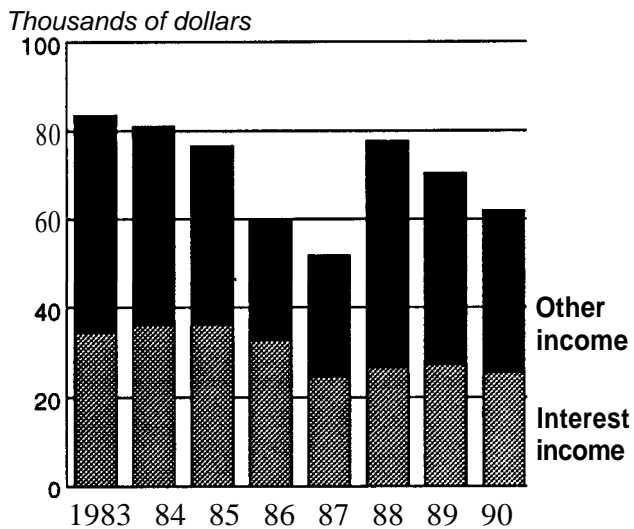
Leverage peaked in 1983 and 1984 when an average of all cooperative sizes and types had at least 24 percent of their assets financed through long-term debt. By cooperative size, leverage increased from 16.8 percent on average for small cooperatives to **25.3** percent for super-size cooperatives. Interestingly, mixed farm supply cooperatives had the highest leverage at 23.4 percent while specialized farm supply cooperatives were the lowest at

Table 20— Percent of assets financed by debt (financial leverage), by size, type and year.

Year	Small	Medium	Large	Super
<i>Percent</i>				
1983	20.37	22.82	27.54	27.17
1984	21.15	24.56	28.09	34.27
1985	19.54	19.72	23.21	32.20
1986	15.49	19.63	22.97	25.79
1987	14.27	17.22	19.48	21.94
1988	13.65	19.78	21.38	25.47
1989	14.45	14.63	15.65	18.38
1990	15.28	15.02	19.88	16.99
Average	16.78	19.17	22.28	25.28

Year	Specialized marketing	Mixed marketing	Mixed farm supply	Specialized farm supply
<i>Percent</i>				
1983	19.53	24.68	28.67	24.43
1984	25.32	27.16	30.04	21.39
1985	21.59	21.13	26.76	19.23
1986	18.12	19.23	23.16	15.62
1987	12.71	17.71	18.73	13.98
1988	18.86	20.07	20.37	14.45
1989	14.26	16.63	19.84	14.21
1990	16.11	15.30	19.51	15.57
Average	18.31	20.24	23.39	17.36

Figure 8— Average nonoperating income



17.4 percent. Because the level of cooperative assets exhibited little change, the implications of lower leverage showed that cooperatives were paying off their debts while increasing their equity investment.

Interest and Other Income

Interest and other income were from sources not directly related to the cooperatives' day-to-day operations, or to nonoperating income. Other income mainly included interest on short- and long-term investments and other sources such as sales of property, plant, and equipment for either a gain or loss.

Interest Income—Income included interest on cash equivalents and interest charged on accounts receivable. Interest income averaged less than 1 percent of net sales for all cooperative sizes and types (table 21). By size, the importance of interest income relative to net sales decreased as size increased, from 0.7 percent (small) to 0.3 percent (super). By type, interest income relative to net sales was greater for farm supply cooperatives (0.6 to 0.8 percent) than marketing cooperatives (0.3 to 0.4 percent).

Average interest income for all cooperatives declined from \$35,000 in 1983 to \$25,000 in 1990

(figure 8). The decline was due in part to both the decrease in interest rates and the apparent tightening of credit sales reflected by cooperatives' lowering of accounts receivable levels. Appendix table A9 illustrates the interest income for each size and type of cooperative.

Other Income—Other income came from the sale of property, plant, and equipment, rental income, and extraordinary items. Sometimes property, plant, and equipment was sold to generate income, but usually the sale was a disposal where the asset was either fully depreciated or the market value of that asset was greater than the book value. Because a fully depreciated asset might cost the cooperative money to dispose of it, there is sometimes a loss in disposal. Rental income from unused facilities or equipment provides income flows. Extraordinary items might be either a gain or a loss. A gain might be a fire loss where the insurance payment was greater than the book value of the asset.

Other income as a percent of net sales averaged from 0.9 percent for small cooperatives to 0.5 percent for large cooperatives. It was highest at 0.8 percent for both types of farm supply cooperatives and was lowest at 0.5 percent for specialized marketing cooperatives.

Income From Own Operations

Income from own operations (income before taxes and income from other cooperatives) was the

Table 21— Average interest income as a percent of net sales, by size and type, 1983-90.

Size/type	interest income Percent
Small	0.73
Medium	0.51
Large	0.37
Super	0.30
Specialized marketing	0.32
Mixed marketing	0.38
Mixed farm supply	0.83
Specialized farm supply	0.78

best indicator of the profitability of local cooperatives' operations. Income from other cooperatives was important to local cooperatives net income but because this income was beyond the control of the local's manager and the board of directors it was not used in determining profitability. Income from own operations was used to define profitability for local cooperatives in this study.

Average income from own operations as a percent of net sales by type was the highest for specialized farm supply cooperatives (1.7 percent) and the lowest for specialized marketing cooperatives (1.3 percent) (table 22). Interestingly, small- and medium-size cooperatives tended to have a higher income from own operations percentage than larger cooperatives. The higher income percentage based on size was probably due more to the small cooperatives' tending to be farm supply cooperatives which had higher margins-per-sales-dollar than the larger marketing cooperatives with lower margins. Income from own operations, in dollar terms, was generally the strongest for all cooperative sizes and types in 1987 and 1988.

Income From Other Cooperatives

Income from other cooperatives resulted from the local cooperatives doing business with other

Table 22-Average **income from own operations and income from own operations as a percent of net sales, by cooperative size and type, 1983-90.**

Size/type	income from own operations	Income from own operations/ net sales
	<i>Dollars</i>	<i>Percent</i>
Small	41,765	1.79
Medium	122,382	1.79
Large	194,751	1.47
Super	453,393	1.43
Specialized marketing	144,102	1.30
Mixed marketing	149,985	1.57
Mixed farm supply	108,249	1.61
Specialized farm supply	59,559	1.69
All cooperatives	110,882	1.54

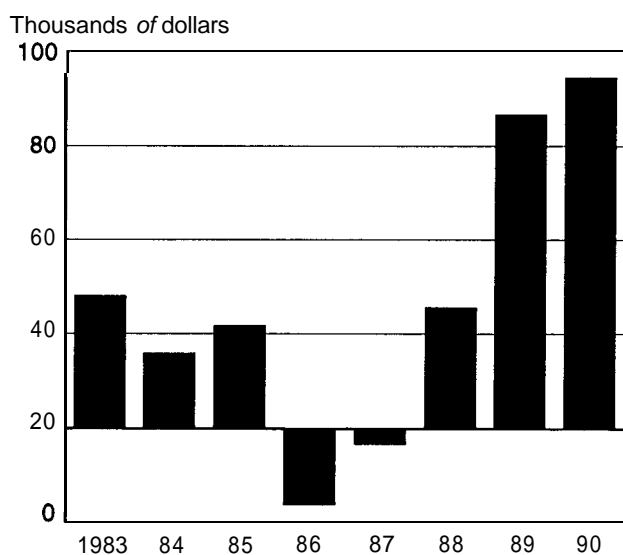
cooperatives. Income from other cooperatives "permit cooperatives to operate as typical businesses, earning income in excess of expenses, while still operating 'at cost.' By permitting cooperatives to retain a portion of the margins designated as patronage refunds, members provide needed equity without having to write checks to the association [Frederick, p.i]." Income from other cooperatives in this study was generally from regional cooperatives and CoBank. The income from regionals was based on business volume with some of the refunds in cash and the rest in equity stock. The equity stock was usually revolved back to the local cooperative on a set schedule. Many respondent cooperatives also borrowed funds from CoBank and the Bank for Cooperatives and received both cash and **noncash** patronage income. The **noncash** patronage from CoBank was from investing in the bank that was usually required in proportion to the funds borrowed.

Income from other cooperatives was lowest at 0.3 percent of net sales for the larger cooperatives and specialized marketing cooperatives and highest for specialized farm supply at 0.7 percent (table 23). The importance of patronage income to net sales tended to decline as cooperative size increased. By cooperative type, income from other cooperatives as a percent of net sales was higher for farm supply cooperatives than for marketing cooperatives.

Table 23— **Average income from other cooperatives by size and type, 1983-90.**

Size/type	Income from other cooperatives
	<i>Percent</i>
Small	0.56
Medium	0.34
Large	0.28
Super	0.28
Specialized marketing	0.28
Mixed marketing	0.32
Mixed farm supply	0.39
Specialized farm supply	0.72

Figure 9—Average Income from Other Co-ops



Income from other cooperatives was a reflection of the business operations of regional cooperatives and could be a loss (figure 9). In both 1986 and 1987, several regionals wrote down allocated equity held by local cooperatives. Local cooperatives subtracted the allocated losses from income from own operations. With the exception of 1986 and 1987, most regionals increased net income throughout the late 1980s and increased income distribution [Staiert, pp.4-5].

With net income of less than 2.5 percent of net sales for all respondent cooperatives, income from others made a difference between a profit or a loss for 20 cooperatives each year (table 24). On average, 125 or 21 percent of total respondents had yearly losses. When both cash and noncash income from other cooperatives was considered, one in every seven cooperatives with a loss from own operations had positive net income. The exception was in 1986 when 24 cooperatives which had income from own operations lowered because regional cooperatives wrote down their equity. Subtracting the regionals allocated loss from the local's income from own operations resulted in a loss for the local cooperative.

Income Taxes

Cooperatives paid income taxes on earnings not allocated to members (retained earnings) and on dividend payments. The decision as to what amounts were allocated to retained earnings and to members was made by the board of directors. The treatment of nonmember business has an impact on retained earnings because the cooperative could allocate the earnings to nonmembers or retain the income. In terms of net sales, income tax paid was always less than 0.2 percent of sales (table 25).

Income tax paid by cooperatives varied by size. The calculated tax rate was determined by dividing income tax paid by taxable income (sum of dividend payments and increased retained earnings). There was an apparent problem in the calculated tax rate in this table though, because the actual income tax rate should not have exceeded 34 percent, the highest corporate rate. One explanation was the difference between the determination of net income for tax or book purposes. Another error in the calculation could center around the tax

Table 24—Cooperatives with losses from own operations where income from other cooperatives made a difference between a loss and gain, by year.¹

Year	cooperatives with a loss from own operations	Cooperatives with losses	Cooperatives where income from other co-ops made a difference ²
1983	94	77	17
1984	126	112	14
1985	140	119	21
1986	159	183	-24
1987	132	125	7
1988	70	55	15
1989	160	101	59
1990	118	69	49
Average	125	105	20

¹ Income from other cooperatives either increased or decreased net income or losses.

² The negative number means local cooperatives applied regional cooperatives' writedown of equity to their income from own operations resulting in a loss for those cooperatives.

Table 25-Average income tax as a percent of net sales, tax paid, and calculated tax rate, by size and type, 1983-80.

Size/type	Percent of net sales	Income tax	Calculated tax rate
	<i>Percent</i>	<i>Dollars</i>	<i>Percent</i>
Small	0.13	3,125	21.29
Medium	0.16	11,025	23.37
Large	0.15	20,512	34.94
Super	0.17	55,248	54.13
Specialized marketing	0.14	15,044	20.44
Mixed marketing	0.18	17,300	40.93
Mixed farm supply	0.19	12,471	36.72
Specialized farm supply	0.15	5,924	54.10

or book treatment of bad debts and depreciation. In any case, the calculated tax rate increased from 21.3 percent for small cooperatives to 54.1 percent for super-size cooperatives. Analysis by type was less apparent, as specialized farm supply cooperatives that were usually small had the highest calculated tax rate. These cooperatives had a high proportion of petroleum sales relative to other farm supply sales. Much of these petroleum sales might be to nonmembers and taxable, thus a higher calculated tax rate.

Net Income

Net income is the profit shown on the cooperative income statements. Net income was distributed five ways — income taxes, dividends on patron's equity, cash patronage refunds, non cash patronage allocations, and retained earnings.

Net income increased by size. Small cooperatives had net income of \$51,644 while super-size cooperatives had \$487,456 (table 26). But, as a percent of net sales, small cooperatives (2.2 percent) had 0.7 percentage points greater return than super-size cooperatives (1.5 percent). By cooperative type, farm supply had returns of 1.8 percent or better while specialized marketing cooperatives were at 1.4 percent and mixed marketing cooperatives had returns of 1.7 percent.

CONCLUSIONS

The agricultural recession in the early to mid 1980s forced many local cooperatives to evaluate business operations. Interest rates on loans were in double digits; many farmers were leaving agriculture. Bad debts were becoming more common and by 1983 they approached 0.3 percent of net sales. Those local farm supply and marketing cooperatives that weathered the economic storm survived as stronger business entities.

Even with tough economic conditions, cooperatives maintained income from own operations of 1.5 percent of net sales. Maintenance of income from own operations was achieved in a number of ways. Efforts to lower COGS were made, especially by specialized farm supply cooperatives. They lowered COGS as a percent of net sales by 3 percentage points. Administrative expenses, those over which managers have the most control, were lowered for a majority of cooperatives. Interest expenses were lowered because less debt was being financed. Better management of bad debts reduced accounts receivable. Cooperatives also reduced employee numbers.

Some of the operating expenses might have been lowered by the demise of the local cooperative. Initially, there were 1,336 cooperatives in this study. That number dwindled to 1,215 through

Table 26-Average net income and net income as a percent of net sales, by size and type, 1983-90.

Size/type	Net income	Percent of net sales
	<i>Dollars</i>	<i>Percent</i>
Small	51,644	2.22
Medium	134,885	1.98
Large	211,125	1.59
Super	487,456	1.54
Specialized marketing	159,240	1.43
Mixed marketing	163,008	1.71
Mixed farm supply	122,133	1.82
Specialized farm supply	74,161	2.25

mergers, acquisitions, and cooperatives going out of business. In prior studies, when asked who their principal competitors were, many local cooperatives cited other local cooperatives. While competition was healthy, when there was more than one local cooperative serving a market area, farmer members were supporting duplicate facilities.

Duplicate facilities and services might also be reflected in income from own operations.

Throughout the **8-year** span of this report, about 17.5 percent of the cooperatives had an overall loss. Net losses suggests there might be overcapacity in some markets that cooperatives serve.

Overcapacity will prompt additional mergers, acquisitions, and failures among local cooperatives. Local cooperatives may consider specializing in these competitive markets. Cooperatives with overlapping trade territories might consider joint ventures, for example, one cooperative might provide feed to both cooperatives' members and the other one would provide agronomy products.

Information in this report does not suggest that one size or type of local cooperative has a cost or operating expense structure superior to that of another. Rather, by combining the information from many similar, yet diverse cooperatives, management and the board of directors will be able to compare their operations with those of other cooperatives.

To remain viable, local cooperatives need to continue monitoring their operating expenses. This study provided average operating expenses as a percent of net sales by cooperative size and type, which should be valuable for comparative purposes.

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APPENDIX 1

Appendix table A1- **Sample size of respondent cooperatives by size, type, and year.**

Type/size	1983	1964	1965	1966	1967	1966	1969	1990	Average
<i>Number</i>									
Small	186	194	265	453	533	325	362	264	326
Medium	113	106	102	190	221	138	203	164	150
Large	72	54	65	67	76	90	109	82	77
Super	31	36	33	43	40	58	70	25	43
Total	402	390	465	753	870	611	744	535	596
Specialized marketing	154	78	110	162	197	143	189	135	146
Mixed marketing	149	91	108	199	231	168	199	152	162
Mixed farm supply	31	41	53	78	95	60	77	56	61
Specialized farm supply	68	180	194	314	347	242	279	192	227
Total	402	390	465	753	870	611	744	535	596
<i>Percent</i>									
Small	46.27	49.74	56.99	60.16	61.26	53.19	48.66	49.35	53.20
Medium	28.11	27.18	21.94	25.23	25.40	22.59	27.28	30.65	26.05
Large	17.91	13.85	13.98	8.90	8.74	14.73	14.65	15.33	13.51
Super	7.71	9.23	7.10	5.71	4.60	9.49	9.41	4.67	7.24
Specialized marketing	38.31	20.00	23.68	21.51	22.64	23.40	25.40	25.23	25.02
Mixed marketing	37.06	23.33	23.23	26.43	26.55	27.17	26.75	28.41	27.37
Mixed farm supply	7.71	10.51	11.40	10.36	10.92	9.82	10.35	10.47	10.19
Specialized farm supply	16.92	48.15	41.72	41.70	39.89	39.81	37.50	35.89	37.42

Appendix table A2— **Average percent farm supply sales by cooperative type, 1983-90.**

Item	Specialized marketing	Mixed marketing	Mixed farm supply	Specialized farm supply
<i>Percent</i>				
Feed	20.14	19.84	20.31	16.16
Seed	4.54	3.38	2.59	4.15
Fertilizer	25.41	18.54	16.30	16.00
Chemicals	16.75	12.13	8.73	9.01
Petroleum	19.58	24.29	27.25	30.15
Other	13.58	21.82	24.82	24.53

Appendix table A3—Average farm supplies sold and farm products marketed for all cooperatives, 1983-90.

Item	1983	1984	1985	1986	1987	1988	1989	1990
Feed	735,602	1,083,413	871,603	837,218	749,566	981,862	930,980	742,626
Seed	124,643	191,640	129,926	115,015	127,563	148,534	149,273	118,076
Fertilizer	708,990	868,345	843,718	748,487	670,092	894,061	877,391	763,377
Chemicals	378,734	485,166	483,097	451,358	430,960	570,669	566,412	496,243
Petroleum	1,409,210	1,626,399	1,576,486	1,258,725	1,135,135	1,323,567	1,372,223	1,337,480
Auto' accessories	115,530	162,038	149,985	141,639	138,305	165,023	170,646	188,900
Machinery	124,608	139,230	158,560	184,407	147,907	172,506	315,763	453,403
Building materials	197,082	223,502	145,230	131,161	139,210	186,956	263,724	303,098
Containers	49,987	47,613	37,420	60,050	35,181	62,170	81,552	50,588
Food	265,428	279,714	75,446	112,471	114,476	146,932	163,680	170,788
Other	178,906	324,257	304,786	317,826	297,619	341,893	392,562	418,192
Grain	6504,105	9,287,386	6,953,179	6,086,468	5,391,653	8,251,734	8,139,021	5,671,970
Rice		178,571	89,286	272,056	270,012			
Cotton and cotton seed	126,883	335,054	278,034	203,039	202,062	364,195	296,159	408,865

Appendix table A4a— Gross margin for profitable cooperatives as a percent of net sales, by size.

Year	Small	Medium	Large	Super
<i>Percent</i>				
1983	5.95	7.62	7.39	6.58
1984	11.18	10.73	7.79	5.96
1985	10.77	11.12	8.03	6.78
1986	12.39	10.97	8.80	7.64
1987	12.89	11.03	9.32	8.63
1988	14.53	10.94	8.02	7.07
1989	12.55	10.28	7.73	7.10
1990	11.59	10.40	8.38	9.95

Appendix table A4b— Gross margin for unprofitable cooperatives as a percent of net sales by size.

Year	Small	Medium	Large	Super
<i>Percent</i>				
1983	-2.80	8.38	10.54	5.62
1984	11.79	8.46	8.45	6.28
1985	11.70	10.01	6.85	9.03
1986	10.02	10.23	8.22	7.25
1987	10.16	9.67	8.50	6.94
1988	11.13	5.94	7.82	¹
1989	7.76	6.15	6.46	6.62
1990	11.00	7.55	6.87	5.12

¹ This value is not provided due to minimal observations.

Appendix table A5a— Gross margin for profitable cooperatives as a percent of net sales, by type.

Year	Specialized marketing	Mixed marketing	Mixed farm supply	Specialized farm supply
<i>Percent</i>				
1983	3.80	6.13	12.00	16.25
1984	1.47	5.71	9.09	16.71
1985	5.74	8.66	7.76	15.70
1986	5.53	8.11	14.16	18.99
1987	5.47	8.29	12.35	18.80
1988	4.13	7.59	9.99	17.49
1989	3.17	5.52	11.14	18.82
1990	3.94	6.92	11.90	18.60

Appendix table A5b— Gross margin for unprofitable cooperatives as a percent of net sales, by type.

Year	Specialized marketing	Mixed marketing	Mixed farm supply	Specialized farm supply
<i>Percent</i>				
1983	5.28	-2.67	12.01	11.00
1984	4.48	5.63	10.10	14.43
1985	5.26	6.14	11.81	14.53
1986	3.04	7.34	12.50	15.66
1987	5.83	2.19	7.18	15.71
1988	-4.01	8.37	-3.73	16.90
1989	0.74	-1.26	2.64	16.06
1990	4.76	2.15	10.99	16.90

Appendix table A6a— General expenses for profitable cooperatives as a percentage of net sales.

Item	Depreciation	Rent or lease	General insurance	Property tax	Other tax	Repair and maintenance	Auto and truck	Utilities and dryer	Total
<i>Percent</i>									
1983	1.34	0.31	0.33	0.29	0.12	0.42	0.47	0.58	3.87
1984	1.33	0.25	0.31	0.31	0.14	0.47	0.58	0.47	3.86
1985	1.78	0.31	0.45	0.42	0.12	0.63	0.72	0.77	5.22
1986	2.13	0.31	0.61	0.49	0.16	0.80	0.78	0.96	6.23
1987	2.03	0.34	0.74	0.47	0.15	0.82	0.71	0.75	6.01
1988	1.59	0.26	0.58	0.37	0.18	0.67	0.60	0.48	4.73
1989	1.26	0.17	0.53	0.30	0.17	0.55	0.51	0.39	3.87
1990	1.36	0.15	0.64	0.33	0.15	0.57	0.61	0.44	4.25
Average	1.56	0.26	0.51	0.36	0.15	0.60	0.61	0.58	4.64

Appendix table A6b— General expenses for unprofitable cooperatives as a percentage of net sales.

Item	Depreciation	Rent or lease	General insurance	Property tax	Other tax	Repair and maintenance	Auto and truck	Utilities and dryer	Total
<i>Percent</i>									
1983	1.19	0.27	0.33	0.29	0.17	0.38	0.46	0.49	3.59
1984	1.38	0.31	0.36	0.31	0.53	0.49	0.63	10.51	4.50
1985	1.73	0.63	0.52	0.41	0.53	0.61	0.79	0.74	5.96
1986	2.10	0.38	0.76	0.49	0.40	0.77	0.87	0.97	6.75
1987	1.97	0.48	0.85	0.52	0.19	0.82	0.73	0.81	6.36
1988	1.42	0.38	0.65	0.31	0.26	0.55	0.45	0.46	4.49
1989	1.32	0.17	0.61	0.31	0.29	0.47	0.43	0.41	4.01
1990	1.65	0.25	0.79	0.39	0.23	0.68	0.59	0.56	5.14
Average	1.55	0.35	0.57	0.37	0.34	0.57	0.61	0.59	4.94

Appendix table A7a— Administrative expenses as a percent of net sales for profitable cooperatives.

Year	Advertising	Donations	Dues and subscriptions	Bad debt	Office supplies	Store and warehouse	Telephone, markets	Travel, meetings	Annual meetings	Board of directors	Professional fees	Total
<i>Percent</i>												
1983	0.12	0.01	0.02	0.22	0.11	0.10	0.06	0.06	0.02	0.03	0.11	0.85
1984	0.15	0.01	0.03	0.31	0.14	0.14	0.08	0.07	0.06	0.03	0.11	1.12
1985	0.18	0.05	0.03	0.42	0.17	0.23	0.11	0.08	0.05	0.04	0.15	1.51
1986	0.21	0.01	0.04	0.42	0.21	0.37	0.14	0.10	0.06	0.05	0.20	1.83
1987	0.20	0.01	0.04	0.25	0.22	0.25	0.14	0.10	0.05	0.05	0.20	1.50
1988	0.16	0.01	0.03	0.11	0.17	0.19	0.11	0.07	0.04	0.03	0.14	1.06
1989	0.15	0.01	0.02	0.09	0.15	0.19	0.09	0.07	0.03	0.03	0.13	0.96
1990	0.19	0.01	0.03	0.12	0.18	0.26	0.09	0.08	0.04	0.04	0.16	1.20
Average	0.17	0.01	0.03	0.23	0.16	0.21	0.10	0.08	0.04	0.04	0.15	1.21

Appendix table A7b— Administrative expenses as a percent of net sales for unprofitable cooperatives.

Year	Advertising	Donations	Dues and subscriptions	Bad debt	Office supplies	Store and warehouse	Telephone, markets	Travel, meetings	Annual meetings	Board of directors	Professional fees	Total
<i>Percent</i>												
1983	0.15	0.01	0.01	0.46	0.14	0.14	0.07	0.07	0.02	0.03	0.13	1.24
1984	0.21	0.01	0.04	0.65	0.16	0.26	0.10	0.09	0.03	0.04	0.18	1.76
1985	0.19	0.02	0.05	0.69	0.17	0.28	0.13	0.09	0.04	0.05	0.23	1.94
1986	0.23	0.01	0.06	1.03	0.24	0.24	0.14	0.09	0.07	0.07	0.27	2.47
1987	0.24	0.01	0.07	0.35	0.26	0.23	0.18	0.10	0.06	0.08	0.27	1.84
1988	0.17	0.01	0.06	0.17	0.19	0.22	0.11	0.06	0.04	0.05	0.18	1.25
1989	0.14	0.01	0.03	0.14	0.14	0.18	0.10	0.06	0.03	0.04	0.20	1.08
1990	0.19	0.01	0.05	0.23	0.21	0.22	0.13	0.09	0.04	0.05	0.27	1.48
Average	0.19	0.01	0.04	0.47	0.18	0.22	0.11	0.08	0.04	0.05	0.21	1.60

Appendix table A8a—Labor expenses for profitable cooperatives as a percentage of net sales.

Year	Salaries and wages	Benefits	Payroll tax	Pension	Total labor
<i>Percent</i>					
1983	3.19	0.32	0.23	0.16	3.90
1984	3.67	0.30	0.29	0.14	4.40
1985	4.74	0.39	0.38	0.17	5.67
1986	5.79	0.46	0.50	0.18	6.93
1987	5.57	0.48	0.48	0.17	6.70
1988	4.36	0.38	0.37	0.13	5.24
1989	3.83	0.36	0.31	0.14	4.63
1990	4.52	0.46	0.36	0.16	5.49
Average	4.35	0.39	0.35	0.16	5.25

Appendix table A8b—Labor expenses for unprofitable cooperatives as a percentage of net sales.

Year	Salaries and wages	Benefits	Payroll tax	Pension	Total labor
<i>Percent</i>					
1983	3.46	0.33	0.24	0.28	4.31
1984	4.56	0.44	0.33	0.19	5.52
1985	5.39	0.49	0.43	0.17	6.48
1986	6.54	0.49	0.54	0.25	7.81
1987	6.17	0.59	0.51	0.19	7.47
1988	4.35	0.50	0.34	0.10	5.29
1989	3.73	0.43	0.31	0.10	4.57
1990	5.05	0.64	0.40	0.13	6.22
Average	4.76	0.48	0.37	0.19	5.79

Appendix table AS—Interest income by size, type, and year.

Item	Small	Medium	Large	Super
<i>Dollars</i>				
1983	18,591	35,980	59,009	116,495
1984	17,108	40,770	76,759	80,978
1985	16,766	52,276	57,173	120,132
1986	18,763	44,288	49,248	105,816
1987	15,127	32,208	36,563	82,289
1988	15,610	27,610	35,679	70,627
1989	15,714	26,979	35,435	79,179
1990	16,339	27,852	40,627	72,277
Average	16,752	35,995	48,812	90,974
Item	Specialized marketing	Mixed marketing	Mixed farm supply	Specialized farm supply
<i>Dollars</i>				
1983	30,387	37,385	54,223	30,058
1984	34,344	34,626	50,101	33,653
1985	38,028	45,975	36,406	30,153
1986	35,140	33,855	40,128	28,436
1987	25,337	26,383	26,994	22,196
1988	26,526	27,686	33,107	23,982
1989	26,897	27,888	34,253	24,901
1990	26,781	24,310	34,764	22,585
Average	30,430	32,264	38,747	26,996

APPENDIX 2

Appendix table B1— Average common size income statement for specialized marketing cooperatives based on size, 1983-90.

Item	Small	Medium	Large	Super
	<i>Percent</i>			
Net sales	100.00	100.00	100.00	100.00
Cost of goods sold	94.29	94.40	94.75	94.28
Gross margins	5.71	5.60	5.25	5.72
Service income	7.38	4.23	4.14	3.88
General expenses				
Depreciation	1.77	1.27	1.33	1.30
Rent or lease	0.21	0.18	0.22	0.35
General insurance	0.80	0.44	0.38	0.33
Property tax	0.43	0.34	0.37	0.32
Other taxes and fees	0.14	0.13	0.15	0.07
Repair and maintenance	0.73	0.40	0.44	0.44
Auto and truck	0.54	0.29	0.30	0.28
Utilities and dryer	0.86	0.55	0.55	0.60
Total general	5.48	3.59	3.75	3.68
Administrative expenses				
Advertising	0.12	0.08	0.08	0.07
Contributions and donations	0.02	0.01	0.00	0.00
Dues and subscriptions	0.05	0.02	0.02	0.02
Bad debt	0.23	0.17	0.19	0.09
Office supplies and postage	0.17	0.11	0.11	0.12
Store and warehouse supplies	0.20	0.14	0.13	0.11
Telephone and marketing service	0.08	0.06	0.06	0.06
Travel and meetings	0.10	0.07	0.06	0.08
Annual meeting	0.05	0.03	0.02	0.04
Board of directors	0.06	0.03	0.02	0.01
Professional fees	0.21	0.14	0.11	0.10
Total administrative	1.28	0.87	0.81	0.70
Labor expenses				
Salaries and wages	3.75	2.64	2.59	2.46
Benefits	0.40	0.26	0.25	0.22
Payroll tax	0.33	0.21	0.21	0.18
Pension	0.15	0.10	0.10	0.08
Total labor	4.63	3.21	3.14	2.93
Other	0.63	0.50	0.42	0.51
Total operating expenses	12.02	8.18	8.12	7.83
Interest expense	0.73	0.73	0.79	1.14
Interest income	0.54	0.32	0.29	0.24
Other income	0.81	0.28	0.41	0.35
Income from own operations	1.68	1.53	1.19	1.22
Income from other cooperatives	0.59	0.21	0.21	0.31
Income tax	0.12	0.13	0.10	0.15
Net income	2.15	1.61	1.30	1.38

Appendix table B2— Average common size income statement for mixed marketing cooperatives based on size, 1983-90.

Item	Small	Medium	Large	Super
	<i>Percent</i>			
Net sales	100.00	100.00	100.00	100.00
Cost of goods sold	93.17	92.22	91.55	91.74
Gross margins	6.03	7.78	8.45	8.26
Service income	6.28	4.75	4.77	4.34
General expenses				
Depreciation	1.62	1.53	1.70	1.37
Rent or lease	0.19	0.19	0.20	0.30
General insurance	0.70	0.50	0.46	0.47
Property tax	0.39	0.39	0.40	0.33
Other taxes and fees	0.10	0.14	0.17	0.13
Repair and maintenance	0.62	0.55	0.64	0.69
Auto and truck	0.54	0.50	0.53	0.63
Utilities and dryer	0.67	0.58	0.63	0.59
Total general	4.83	4.37	4.72	4.51
Administrative expenses				
Advertising	0.14	0.15	0.14	0.13
Contributions and donations	0.01	0.01	0.01	0.05
Dues and subscriptions	0.04	0.03	0.04	0.02
Bad debt	0.40	0.19	0.15	0.16
Office supplies and postage	0.17	0.18	0.17	0.12
Store and warehouse supplies	0.19	0.19	0.18	0.24
Telephone and marketing service	0.08	0.09	0.07	0.07
Travel and meetings	0.10	0.08	0.09	0.11
Annual meeting	0.06	0.04	0.03	0.03
Board of directors	0.06	0.04	0.04	0.02
Professional fees	0.21	0.16	0.13	0.11
Total administrative	1.45	1.15	1.03	1.07
Labor expenses				
Salaries and wages	4.29	3.99	4.16	3.98
Benefits	0.38	0.38	0.39	0.30
Payroll tax	0.37	0.31	0.32	0.29
Pension	0.13	0.18	0.14	0.14
Total labor	5.16	4.86	5.01	4.71
Other	0.66	0.58	0.62	0.66
Total operating expenses	12.11	10.96	11.39	10.94
Interest expense	0.89	0.88	0.96	1.07
Interest income	0.53	0.42	0.35	0.32
Other income	0.79	0.58	0.40	0.62
Income from own operations	1.43	1.69	1.63	1.54
Income from other cooperatives	0.31	0.32	0.36	0.27
Income tax	0.12	0.15	0.14	0.19
Net income	1.61	1.85	1.87	1.61

Appendix table B3— Average common size income statement for mixed farm supply cooperatives based on size, 1983-90.

Item	Small	Medium	Large	Super
	<i>Percent</i>			
Net sales	100.00	100.00	100.00	100.00
Cost of goods sold	85.76	88.00	87.07	86.26
Gross margins	14.24	12.00	12.93	13.74
Service income	7.02	4.58	4.51	5.38
General expenses				
Depreciation	2.40	1.75	1.90	1.98
Rent or lease	0.61	0.21	0.22	0.27
General insurance	0.96	0.62	0.59	0.63
Property tax	0.50	0.38	0.45	0.46
Other taxes and fees	0.14	0.13	0.12	0.45
Repair and maintenance	1.15	0.73	0.68	1.01
Auto and truck	1.14	0.98	0.86	1.21
Utilities and dryer	0.93	0.60	0.52	0.70
Total general	7.62	5.37	5.35	6.73
Administrative expenses				
Advertising	0.30	0.24	0.19	0.24
Contributions and donations	0.02	0.01	0.01	0.00
Dues and subscriptions	0.06	0.03	0.01	0.02
Bad debt	0.68	0.46	0.25	0.40
Office supplies and postage	0.31	0.24	0.20	0.18
Store and warehouse supplies	0.37	0.26	0.38	0.18
Telephone and marketing service	0.13	0.10	0.11	0.07
Travel and meetings	0.15	0.18	0.15	0.14
Annual meeting	0.06	0.06	0.10	0.05
Board of directors	0.08	0.05	0.05	0.04
Professional fees	0.29	0.18	0.13	0.11
Total administrative	2.46	1.81	1.57	1.41
Labor expenses				
Salaries and wages	7.65	6.14	6.02	8.28
Benefits	0.69	0.56	0.54	0.50
Payroll tax	0.64	0.56	0.52	0.61
Pension	0.28	0.20	0.26	0.18
Total labor	9.26	7.46	7.34	7.56
Other	1.15	0.64	1.06	0.95
Total operating expenses	20.69	15.28	15.32	16.65
Interest expense	1.13	1.13	1.52	1.68
Interest income	0.72	0.72	0.50	0.72
Other income	1.07	0.57	0.62	0.50
Income from own operations	1.22	1.46	1.72	2.03
Income from other cooperatives	0.44	0.31	0.39	0.57
Income tax	0.17	0.13	0.19	0.10
Net income	1.49	1.65	1.92	2.49

Appendix table B4— Average common size income statement for specialized farm supply cooperatives based on size, 1983-90.

Item	Small	Medium	Large	Super
	<i>Percent</i>			
Net sales	100.00	100.00	100.00	100.00
Cost of goods sold	82.74	81.88	83.54	81.37
Gross margins	17.26	18.12	16.46	18.63
Service income	3.47	3.03	3.06	4.09
General expenses				
Depreciation	1.93	1.96	1.70	1.81
Rent or lease	0.16	0.18	0.14	0.31
General insurance	0.82	0.74	0.74	0.79
Property tax	0.35	0.34	0.44	0.46
Other taxes and fees	0.23	0.42	0.41	1.18
Repair and maintenance	0.75	0.83	0.68	0.71
Auto and truck	1.11	1.21	1.27	0.45
Utilities and dryer	0.49	0.51	0.44	1.06
Total general	5.85	6.19	5.81	6.78
Administrative expenses				
Advertising	0.44	0.44	0.39	0.43
Contributions and donations	0.04	0.07	0.01	0.02
Dues and subscriptions	0.05	0.04	0.04	0.04
Bad debt	0.56	0.54	0.56	0.29
Office supplies and postage	0.35	0.29	0.24	0.25
Store and warehouse supplies	0.37	0.38	0.65	0.40
Telephone and marketing service	0.16	0.15	0.11	0.12
Travel and meetings	0.19	0.18	0.16	0.22
Annual meeting	0.08	0.06	0.08	0.07
Board of directors	0.10	0.07	0.05	0.05
Professional fees	0.37	0.22	0.20	0.23
Total administrative	2.69	2.44	2.51	2.11
Labor expenses				
Salaries and wages	8.39	8.25	7.96	9.21
Benefits	0.75	0.65	0.66	0.89
Payroll tax	0.80	0.73	0.59	0.70
Pension	0.24	0.25	0.35	0.39
Total labor	10.18	9.87	9.55	11.19
Other	0.71	0.82	0.53	0.85
Total operating expenses	19.43	19.32	18.40	20.93
Interest expense	1.14	1.20	1.20	1.45
Interest income	0.79	0.73	0.68	0.38
Other income	0.82	0.62	0.68	1.02
Income from own operations	1.77	1.98	1.29	1.74
Income from other cooperatives	0.70	0.65	0.35	0.36
Income tax	0.12	0.16	0.26	0.26
Net income	2.35	2.47	1.37	1.84

APPENDIX 3

Gross Margin Analysis

When analyzing gross margins, pay particular attention to yearly changes. If they increase, is this related to changes in the sales price, the cost of the goods, the volume, or a combination of the three? An analysis of variation will help the manager pinpoint areas that produce the variance.

The variance analysis is based on the principle of focusing on one variable at a time while holding all others constant. These six steps will help in analyzing the variance:

- 1) Focus on the year-to-year volume change while assuming the selling price remains unchanged.
- 2) Focus on the year-to-year selling price change while assuming the volume did not change.
- 3) Focus on the combined effect on the changes in price and volume—the change in price times the change in volume.
- 4) Focus on the year-to-year volume change while assuming the cost of the product remains unchanged.
- 5) Focus on the year-to-year change in the cost of the product while assuming the volume did not change.
- 6) Finally, focus on the combined effect on the changes in costs and volume.

For example, assume the following values for seed corn sales.

	<i>year 1</i>	<i>year 2</i>	<i>change</i>
Net sales	240,000	244,900	4,900
COGS	228,000	229,100	1,100
Gross margins	12,000	15,800	3,800
Units sold	4,000	3,950	-50
Selling price/unit	60	62	2
COGS per unit	57	58	1

step 1	change in volume times the prior year selling price (50) x 60=	(3,000)
step 2	change in selling price times prior year volume 2 x 4 0 0 0 =	8,000
step 3	combination of the two effects 2 x (50) =	<u>(100)</u>
	net effect on the price and volume	4,900
step 4	change in volume times the prior year COG (50) x 57 =	(2,850)
step 5	change in COGS times prior year volume 1 x 4,000 =	4,000
step 6	combination of the two effects 1x(50) =	<u>(50)</u>
	net effect on the cost and volume	<u>1,100</u>
	total effect on gross margin	3,800

To interpret these results, determine the major influencing factors. Such an analysis of gross margins can focus on the most feasible improvements and the likely results of them. For example, if a decline in the cooperative's gross margin caused by a decline in unit sales prices reflects a situation of overcapacity in a competitive market, management won't have much influence over the decline. On the other hand, if the decline in gross margins is caused by an increase in the cost of the goods sold, then management might have some influence on the decline by finding a lower cost supplier. In this example, we see the main cause for an increased gross margin is a change in the selling price.

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