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Analysis of Financial Statements: Local Farm Supply, Marketing Cooperatives

Abstract

This report analyzes the balance sheets and income statements of local farm supply and marketing cooperatives, comparing 1999 and 1998 and trends over the past 10 years. The data represent four cooperative sizes and types. Common-size income statements and balance sheets compare different cooperative sizes and types. Trends for major balance sheet and income statement items and ratio analysis compare and contrast cooperatives by size and type.

Key words: Cooperatives, balance sheet, income statement, farm supply, marketing, sales, and financial ratios.

Analysis of Financial Statments: Local Farm Supply, Marketing Cooperatives

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Preface

This report studied the financial statements of local cooperatives, comparing 1999, 1998, and the past 10 years. Trends of major balance sheet and income statement items as well as financial ratios are presented for four cooperative sizes and types. The information provides cooperative managers and boards of directors with a basis to compare their cooperatives' historical performance with representative cooperative data.

The author thanks the cooperatives that provided their financial statements to RBS staffers who helped make this report possible.

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Highlights

Financial statements of 512 local farm supply and marketing cooperatives were used for this report. The statements of 291 cooperatives were used to compare 1999 to 1998, while those of 512 cooperatives looked at trends over the past 10 years. 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.

From 1998 to 1999, average net income and net sales for all cooperatives decreased 13 percent and 6 percent, respectively. In 1999, average net sales for all cooperatives studied was $13.1 million. More than 42 percent of the cooperatives studied were small cooperatives--sales of less than $5 million.

In some instances, cooperatives were probably one of the community's larger employers, employing an average 26 full-time and 14 part-time employees with an average annual payroll of $856,541.

Total sales were down 6 percent. Although petroleum products and fertilizer were the two principal farm supplies sold, total farm supply sales were down 3 percent. Marketing activities (mainly grains and oilseeds) provided 43 percent of sales but was also down 14 percent for these cooperatives.

Average total assets grew about 5 percent between 1998 and 1999, fueled by "other" farm supplies. To finance the growth in assets (mainly inventories), total liabilities grew 14 percent while owner equities increased only about 1 percent.

Interest expenses, although less than 1 percent of net sales, increased by 7 percent–the same percentage increase as short-term debt used to finance inventory buildup. Even with an increase of 372 percent in patronage refunds received, local savings and net income were still down 11 percent and 13 percent, respectively.

Financial ratio analysis was used to look at 10-year trends for the 512 cooperatives in the data base. The financial ratio analysis revealed these findings:

- The current ratio (current assets/current liabilities) was fairly steady at around 1.5 between 1990 and 1999, with a slight downturn in 1995. The quick ratio (current assets-inventory/current liabilities) mimicked the current ratio’s trend.

- Total debt ratio peaked at 0.47 in 1996, but then plummeted in 1997.

- The fixed-asset-turnover ratio, a measure of asset use, averaged at least 8 between 1991 and 1995 (i.e., net sales were at least eight times the property, plant, and equipment levels). This ratio was at its lowest in 1999 at 6.53.

- Return on total assets measures the rate of return on total investments. The ratio was at its lowest point (6.86) of the 10 year-period in 1999.

- Return on total equity before taxes grew from 1995 to 1997, but declined to its lowest point at 8.32 in 1999.

Analysis of Financial Statements: Local Farm Supply, Marketing Cooperatives

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This report analyzes the financial statements of 291 local cooperatives for use as a measuring tool by cooperative managers, directors, and members for their local's operation. Ratio analysis and trends are discussed. The information is sub-divided into four cooperative sizes and types.

Farm supply sales (petroleum, fertilizer, feed, etc.) of local cooperatives averaged $7.4 million in 1999 while marketing sales averaged $5.7 million. Grain (corn, wheat, soybeans, etc.) made up of 98 percent of total marketing sales. Income from services (product delivery, fertilizer application, grains and oilseeds hauling and storage, etc.) averaged $0.5 million.

Local agricultural cooperatives played a vital role in providing goods and services to their member-patrons and the rural community. These cooperatives paid an average of $48,000 in annual property taxes, averaged 26 full-time and 14 part-time employees, and had an average annual payroll of $856,000.

This study focuses on the balance sheet, income statement, and financial ratios derived from these statements.

Profile of Respondent Cooperatives

USDA's Rural Business-Cooperative Service (RBS) annually surveys farmer cooperatives and use the data for reports such as this. For this report, a cooperative had to sell some farm supplies, those that exclusively marketed members' products were not included. In addition to selling farm supplies, cooperatives also had to provide an annual report that had a detailed income statement.

The RBS database has 512 cooperatives. This report focused on the 291 that provided information for both 1998 and 1999. When looking at long-term trends (1990 through 1999) in the financial ratio analysis section, all 512 cooperatives were used to obtain a more complete understanding of the local cooperatives' business.

Cooperative Size—Cooperatives were grouped into four sizes by sales volume, using actual figures. Sales groupings in this report were the same as in prior reports. Product mix was ignored in classifying size--small, medium, large and super--because size may be related to the cooperative's product mix. For example, a cooperative with $10 million in sales that exclusively marketed grains and oilseeds could be considered small compared with similar marketing organizations. But, a strictly farm supply cooperative with sales of $10 million could be quite substantial.

Cooperative Type—To account for differences in operations and orientation based on product mix, cooperatives were placed in four descriptive categories: 1) farm supply; 2) mixed farm supply; 3) mixed marketing; and 4) marketing. They closely represent business operations of these cooperatives as summarized in table 1.

This report focuses on cooperatives handling farm supplies–62 percent in 1999 sold only farm supplies; 17 percent offered mixed farm supplies; 16 percent were mixed marketing; and 5 percent were purely marketing (table 2). Of the respondents, 42 percent were small; 26 percent, medium; 20 percent, large; and 12 percent, super. Both types of marketing cooperatives tended to be larger while most farm supply cooperatives were small.

The first part of this report focuses on the 291 cooperatives. In the financial ratio analysis sections, data between the years were not completely comparable in that the same cooperatives did not respond to the CS survey every year and may not be statistically

Table 1—Size and type definitions used for respondent cooperatives

Cooperative size	Definition	Number
Small	up to $5 million in total sales	122
Medium	$5 million to $10 million	75
Large	$10 million to $20 million	59
Super	$20 million and more	35
Cooperative type		
Farm supply	total net sales from farm supplies	180
Mixed farm supply	from 50 to 99 percent	49
Mixed marketing	from 25 to 49 percent	48
Marketing	less than 25 percent	14

Table 2—Respondent cooperatives by size and type

Cooperative type	Small	Medium	Cooperative size Large	Super	Total
			Number		Percent
Farm supply	104	45	24	7	61.86
MIxed farm supply	7	14	14	14	16.84
Mixed marketing	6	12	6	14	16.49
Marketing	5	4	5	0	4.81
Percent of total	41.93	25.77	20.27	12.03	100.00

valid to draw industry-wide conclusions. However, the samples are large and do represent a cross section of cooperatives selling farm supplies and marketing grains and oilseeds throughout the United States.

Sales Mix—Responding cooperatives fell in to five major farm supply and two marketing categories (table 3). Petroleum was the dominant production supply item sold by small and medium-sized cooperatives. Sales of small cooperatives, the most numerous, averaged $2.6 million in 1999. Farm production supplies represented the bulk (87 percent) of their sales. As cooperatives grew in size, the importance of farm supplies declined (77 percent for medium-sized cooperatives, 73 percent for large, and 43 percent for super).

Sales of mixed farm supply cooperatives averaged $15 million, with $11 million in exclusively farm supplies. Petroleum was the most important farm supply item sold, with feed second. Feed sales, however, decreased 6 percent from 1998. Grain sales decreased 9 percent. Average sales of marketing and mixed marketing cooperatives were $26 million and $24 million, respectively, and much larger than both categories of farm supply cooperatives.

Balance Sheet Analysis

The balance sheet of a local cooperative states its financial position at the end of a 12-month fiscal year. The balance sheet represents the cooperative's assets, liabilities, member equity, and their mutual relationship. The balance sheets of these 291 local cooperatives shows typical levels for assets, liabilities, and member equities for different sizes and types.

Table 4 compares common-size balance sheets for all respondents for 1999 and 1998. Appendix tables 1-4 show common-size balance sheets by size and type for 1999. Each account is listed as a percentage of total assets. The dollar amount of total assets is listed at the bottom of the table. By cooperative size, total assets ranged from $1.7 million for small to $18.5 million for super-size cooperatives. By type, total assets were $4 million for farm supply, $8.8 million for mixed farm supply, $11 million for mixed marketing, and $10.6 million for marketing.

Table 3—Average farm supplies sold and products marketed as a percent of total sales, and change from 1998 to 1999

	1998	1999	Change 1998 to 1999
		Percent	
Farm supplies sold:			
Feed	10.07	10.00	-6.40
Seed	1.32	1.55	10.20
Fertilizer	10.74	10.57	-7.18
Crop protectants	9.05	9.19	-4.20
Petroleum products	16.78	17.66	-0.74
Other	6.62	7.36	-4.76
Total	54.58	56.33	-2.73
Products marketed:			
Grains and oilseeds	44.47	42.80	-9.25
Other	.95	.87	-13.45
Total	45.42	43.67	-9.33
Total sales	100.00	100.00	
Based on sales of:	$13,947,282	$13,150,989	

Current Assets—Cash and cash equivalents as a percent of total assets decreased as cooperative size increased. Cash was 13.3 percent of total assets for small cooperatives, but dropped to 3.2 percent for super cooperatives. Mixed marketing cooperatives held the most cash by type (25.5 percent), followed by farm supply cooperatives (13.5 percent).

Current assets declined by 1.59 percent from 1998 to 1999. Most occurred in cash and cash equivalents. Grain and oilseed inventories increased 4.4 percent. Those inventories increased more than 60 percent for medium-sized cooperatives.

Farm supplies were up from 1998 by about 1 percent. By size, farm supply inventories increased about 11 percent more for large. Surprisingly, super cooperatives' farm supply inventories were down by 0.6 percent from the previous year. Marketing cooperatives (11.7 percent) had higher inventories than farm supply cooperatives (5.9 percent).

Accounts receivable in this study were farm supply trade accounts, not grains and oilseeds trade receivables. Farm supply and grains and oilseeds trade receivables ("other" current assets) were separated to allow ratio analysis elsewhere in this study. Accounts receivable for farm supply sales increased only 0.7 percent while farm supply sales decreased 2.7 percent.

The age of accounts receivable refers to how long ago the sale that started this receivable was made. Most cooperatives offer credit sale discounts to promote prompt payment. Terms might be 2 percent-10 days, net 30 days (no discount). Discounts might be offered on all farm supply sales or on certain products. While terms and specific products discounts were not known, 43 cooperatives listed their discounts on sales. The rate was 10.2 percent on total farm supply sales.

The age of accounts receivable was known for 43 cooperatives for both years (table 5)—51 percent current and 14 percent from 31 to 60 daysf old. The largest difference between the 2 years was nearly 8 percent for account of receivables that were more than 6 months old.

Investments and Other Assets—About 24.2 percent of cooperative's total assets was invested in the Bank for Cooperatives, other cooperatives, and/or CoBank. Both large and super cooperatives investment amounted to 24 and 22 percent, respectively, of total assets (table 6). Overall, the marketing cooperatives had less invested than the farm supply cooperatives (table 7).

Property, Plant, and Equipment—Net property, plant, and equipment (PP&E) as a percent of total

Table 4—Common-size balance sheet and change in accounts, 1998 to 1999

	1998	1999	Percentage change
		Percent	
Assets			
Current assets			
Cash and cash equivalants	6.32	4.66	-22.80
Accounts receivable	10.61	10.22	0.74
Inventories--grains and oilseeds	9.00	8.99	4.44
--farm supplies	13.95	13.47	1.06
Prepaid expenses	0.87	0.81	-2.45
Other current assets	6.45	6.25	1.34
Total current assets	47.20	44.40	-1.59
Investments and other asssets			
Investments	23.00	24.19	10.43
Other assets	1.80	2.05	8.82
Net property, plant, and equipment	28.00	29.36	10.01
Total assets	100.00	100.00	4.61
Liabilities and owner equities			
Current liabilities			
Current portion of long-term debt	2.48	2.82	18.74
Notes payable-seasonal	7.36	8.83	25.51
Accounts payable	6.34	6.29	3.69
Patrons credit balances & other liabilities	14.61	11.31	-29.51
Accrued taxes	0.57	0.59	9.00
Accrued expenses	1.65	1.67	5.72
Patronage refunds (cash)	1.33	1.11	-12.40
Total current liabilities	34.34	32.62	-0.64
Long-term debt	9.65	10.20	10.56
Total liabilities	43.99	42.82	1.82
Owner equities			
Allocated equity	41.06	41.66	6.13
Unallocated equity	14.95	15.52	8.67
Total owner equities	56.01	57.18	6.80
Total liabilities and owner eqities	100.00	100.00	4.61
Based on total assets of:	$6,568,827	$6,871,656	

Table 5—Age of accounts receivab le, 1999 and 1998

Accounts receivable age	1999	1998
	Percent	
Current, 0 to 30 days	51.42	46.29
31 to 60 days	13.91	10.21
61 to 90 days	10.98	7.73
91 to 120 days	2.10	2.55
121 to 180 days	8.39	9.86
Greater than 6 months	12.87	20.60
Accounts writtten off this period	0.33	2.76
Based on accounts receivable of:	$26,586,496	$29,598,705

assets ranged between 21 percent and 33 percent for all cooperative sizes. Large cooperatives had the largest percent. Net PP&E increased 10 percent from 1998. Marketing and mixed farm supply cooperatives handling grains and oilseeds had higher dollar amounts of PP&E, probably due to extensive storage and handling facilities. Farm supply and mixed marketing cooperatives had growth in net PP&E of at least 7 percent.

Current Liabilities—They declined 0.6 percent between 1998 and 1999. The largest decrease was in patron's credit balances and other liabilities and the largest increase in notes payable (seasonal). At 41 percent of total assets,\ allocated equity remained almost constant between the 2 years. Farm supply and marketing cooperatives had largest change while mixed farm supply and mixed marketing were down 6 and 0.5 percent, respectively.

Patrons' credit balances and other liabilities decreased 19 percent. Current-term and seasonal-short-term debt used for financing operating expenses grew in double digits. Accrued expenses grew 6 percent and were a slightly larger percentage of total assets for large and for both types of farm supply cooperatives. Cash patronage refunds and dividends grew 5.7 percent, less than 2 percent of total assets for all sizes and types of cooperatives.

Long-term Debt—Long-term debt increased 10 percent from 1998 to 1999. As a percent of total assets by size, large cooperatives and by type, mixed farm supply cooperatives were larger.Twenty-six percent of the cooperatives had no long-term debt. The Bank for Cooperatives and CoBank were the most frequent source of debt capital. Regional cooperatives as well as commercial banks also supplied debt capital.

Member Equities—Comparing this to total assets represents the percent of the cooperative's assets owned by the members, with creditors claiming the rest. Over all sizes and types of cooperatives, members averaged at least 56 percent ownership for both years.

Members of small cooperatives had the highest percentage of ownership (77.5 percent) while those in of super-size cooperatives had the lowest (51.4 percent). By type, members of farm supply cooperatives owned at least 65 percent of the assets while those in mixed farm supply cooperatives owned 58 percent. Both types of marketing cooperatives had lower member ownership—49 percent for marketing and 52 percent for mixed marketing.

Member equities consisted of both allocated (preferred, common, and other kinds of ownership certificates) and unallocated equity. Allocated equity as a percentage of total assets was highest for small cooperatives at 57 percent and more than 45 percent for both farm supply cooperatives.

Unallocated equity averaged more than 6 percent of total assets for all types except mixed farm supply cooperatives. By size, unallocated equity as a percent of total assets fell as cooperative size increased.

Income Statement Analysis

This shows the net results of cooperative operations. Because most managers' performance is judged by net income, members attach great importance to the income statement. The underlining values of the income statement are studied. Table 8 presents a common-size income statement for 291 cooperatives and

Table 6—Common-size balance sheets by cooperative size, 1999

	Small	Medium	Large	Super
	Percent of total assets			
Assets				
Current assets				
Cash and cash equivalants	13.27	6.49	3.48	3.24
Accounts receivable	11.12	10.65	12.21	9.12
Inventories--grains and oilseeds	1.12	2.71	3.63	14.07
--farm supplies	17.34	16.33	16.09	11.14
Prepaid expenses	1.63	1.47	0.72	0.53
Other current assets	3.12	3.96	3.13	8.71
Total current assets	47.60	41.61	39.26	
Investments and other asssets				
Investments	29.70	27.95	24.46	22.14
Other assets	1.13	2.17	3.12	1.71
Net propert, plant, and equipment	21.57	28.27	33.16	29.34
Total assets	100.00	100.00	100.00	100.00
Liabilities and owner equities				
Current liabilities				
Current portion of long-term debt	1.14	1.75	2.03	3.73
Notes payable-seasonal	3.31	5.84	7.37	11.19
Accounts payable	6.48	7.30	7.29	5.55
Other liabilities	5.03	8.78	9.12	13.96
Accrued taxes	0.25	0.42	0.64	0.67
Accrued expenses	1.49	1.41	1.95	1.65
Patronage refunds (cash)	1.00	1.16	1.12	1.12
Total current liabilities	18.70	26.66	29.52	37.87
Long-term debt	3.80	8.92	12.20	10.77
Total liabilities	22.50	35.58	41.72	48.64
Owner equities				
Allocated equity	56.63	46.42	43.02	37.30
Unallocated equity	20.87	18.00	15.26	14.06
Total owner equities	77.50	64.42	58.28	51.36
Total liabilities and owner eqities	100.00	100.00	100.00	100.00
Based on total assets of:	$1,700,780	$4,310,058	$7,529,933	$18,510,012

Table 7—Common-size balance sheets by cooperative type, 1999

	Farm supply	Mixed farm supply	Mixed marketing	Marketing
		Percent of total assets		
Assets				
Current assets				
Cash and cash equivalants	6.83	3.85	3.78	3.18
Accounts receivable	11.12	11.87	9.58	6.56
Inventories--grains and oilseeds	0.09	6.93	15.35	17.33
--farm supplies	18.76	12.96	10.82	9.30
Prepaid expenses	1.29	0.55	0.63	0.58
Other current assets	2.89	4.03	9.18	11.07
Total current assets	41.07	40.19	49.34	48.02
Investments and other assets				
Investments	27.36	26.01	21.55	19.88
Other assets	2.47	3.18	1.32	0.78
Net, property, plant, and equipment	29.10	30.62	27.79	31.32
Total assets	100.00	100.00	100.00	100.00
Liabilities and owner equities				
Current liabilities				
Current portion of long-term debt	1.52	2.02	3.93	4.62
Notes payable-seasonal	6.35	7.43	13.24	6.89
Accounts payable	7.67	6.86	4.80	5.57
Patrons credit balances & other liabilities	6.57	8.62	14.61	19.17
Accrued taxes	0.48	0.47	0.81	0.56
Accrued expenses	1.80	2.14	1.34	1.28
Patronage refunds (cash)	1.12	1.05	1.22	0.97
Total current liabilities	25.51	28.59	39.95	39.06
Long-term debt	9.17	13.52	7.73	12.35
Total liabilities	34.68	42.11	47.68	51.41
Owner equities				
Allocated equity	48.75	45.07	35.84	32.94
Unallocated equity	16.57	12.82	16.48	15.65
Total owner equities	65.32	57.89	52.32	48.59
Total liabilities and owner eqities	100.00	100.00	100.00	100.00
Based on total assets of:	$4,040,072	$8,844,195	$10,961,917	$18,579,418

the change between 1998 and 1999. Appendix tables 5 to 8 show common-size income statements by size and type for 1999.

Net Sales—Is obtained by subtracting sales discounts and returns and allowances from gross sales. Average net sales for the 291 cooperatives in 1999 was $13.1 million, down $0.8 million or 5.7 percent from 1998. Table 9 shows net sales by cooperative size and table 10 by type. Net sales of all sizes and types of

Table 8—Income statement and change in accounts, 1998 to 1999

	1998	1999	Percent change
		Percent of net sales	
Net sales	100.00	100.00	-5.71
Cost of goods sold	88.81	87.69	-6.91
Gross margin	11.19	12.31	3.79
Service and other income	4.30	4.98	13.26
Gross revenue	15.49	17.29	7.85
Operating expenses			
Salaries and wages[1]	6.86	7.83	7.64
Administrative[2]	0.64	0.72	6.22
General[3]	3.94	4.41	5.72
Depreciation	1.88	2.19	9.55
Interest expense	0.81	0.87	2.28
Bad debts	0.14	0.11	-27.54
Total expenses	14.27	16.13	6.64
Local savings	1.23	1.16	-10.55
Patronage refunds received	1.68	1.55	-13.22
Savings before income taxes	2.91	2.71	-12.09
Less income taxes	0.21	0.22	-0.39
Net income	2.70	2.49	-13.02
Based on sales of:	$13,947,282	$13,150,989	

[1] Includes salaries and wages, employee insurance, payroll taxes, and pension expense.

[2] Includes professional services, office supplies (includes postage), telephone, markets, meetings and travel, donations, dues and subscriptions, directors' fees and expense, and annual meetings expense.

[3] Advertising and promotion, delivery (auto & truck) expense, insurance, property & business taxes, other taxes and licenses, rent and lease expense, plant supplies & repairs, repairs and maintenance, utilities (includes dryer expense), miscellaneous expenses, patronage refunds payed out, and other expenses.

Table 9—Abbreviated income statement as a percent of net sales for cooperatives by size, 1999

	Small	Medium	Large	Super
	Percent of net sales			
Net sales	100.00	100.00	100.00	100.00
Cost of goods sold	84.19	84.85	84.62	89.80
Gross margin	15.81	15.15	15.38	10.20
Service and other income	4.57	5.21	4.64	5.10
Gross revenue	20.38	21.02	20.02	15.30
Expenses				
Employee[1]	10.25	9.59	9.79	6.46
Administrative[2]	1.24	.99	0.88	0.54
General[3]	4.56	4.74	4.92	4.15
Depreciation	2.50	2.70	2.38	1.98
Interest	0.50	0.85	0.96	0.89
Bad debts	0.30	0.20	0.11	0.06
Total expenses	19.35	19.07	19.04	14.08
Local savings	1.03	1.29	0.97	1.22
Patronage refunds received	2.09	2.09	1.78	1.28
Savings before income taxes	3.12	3.38	2.75	2.50
Less income taxes	0.21	0.26	0.21	0.22
Net income	2.91	3.12	2.54	2.28
Based on total sales of:	$2,636,995	$6,929,384	$13,420,641	$39,126,280

[1] Employee expenses include salaries and wages, payroll taxes, employee insurance, unemployment compensation, and pension expense.

[2] Administrative costs include professional services, office supplies, telephone, meetings and travel, donations, dues and subscriptions, directors' fees and expense, and annual meetings.

[3] General expenses include advertising and promotion, delivery (auto and truck), insurance, property, business and other taxes and licenses, rent and lease expenses, plant supplies and repairs, repairs and maintenance, utilities, miscellaneous, and other.

Table 10—Abbreviated income statement as a percent of net sales for cooperatives by type, 1999

	Farm supply	Mixed farm supply	Mixed marketing	Marketing
		Percent of net sales		
Net sales	100.00	100.00	100.00	100.00
Cost of goods sold	80.70	84.14	91.76	93.30
Gross margin	19.30	15.86	8.24	6.70
Service and other income	4.07	5.95	5.42	4.15
Gross revenue	23.37	21.81	13.66	10.85
Expenses				
Employee[1]	11.84	10.35	5.49	4.03
Administrative[2]	1.12	0.98	0.48	0.33
General[3]	5.13	5.52	3.85	3.21
Depreciation	2.82	2.57	1.81	1.61
Interest	0.92	1.12	0.75	0.77
Bad debts	0.21	0.11	0.07	0.05
Total expenses	22.04	20.65	12.45	10.00
Local savings	1.33	1.16	1.21	0.86
Patronage refunds received	2.30	1.76	1.22	0.94
Savings before income taxes	3.63	2.92	2.43	1.80
Less income taxes	0.28	0.22	0.21	0.18
Net income	3.35	2.70	2.22	1.62
Based on sales of:	$6,036,422	$15,493,319	$23,971,441	$26,704,514

[1] Employee expenses include salaries and wages, payroll taxes, employee insurance, unemployment compensation, and pension expense.

[2] Administrative costs include professional services, office supplies, telephone, meetings and travel, donations, dues and subscriptions, directors' fees and expense, and annual meetings.

[3] General expenses include advertising and promotion, delivery (auto and truck), insurance, property, business and other taxes and licenses, rent and lease expenses, plant supplies and repairs, repairs and maintenance, utilities, miscellaneous, and other.

cooperatives (except medium and marketing) dropped from 1998 to 1999. If assets from tables 6 and 7 are compared to net sales in tables 9 and 10, sales for all types (except farm supplies) are about twice the level of assets. Only super cooperatives fit that category.

Cost of Goods Sold (COGS)—This represented the largest single expense component 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. COGS, therefore, was the purchase price of the farm supplies sold or products marketed. Table 10 shows COGS as a percent of net sales for different cooperative types. Both types of marketing cooperatives had a relatively high COGS compared with farm supply cooperatives. This was expected because they were generally marketing grains and oilseeds for their patrons with only a few cents-per-bushel margin. COGS were down for all but medium-size cooperatives and all types except marketing.

Gross Margins—The excess of net sales over the cost of goods sold averaged 17.3 percent of sales for all cooperatives, up 3.8 percent from 1998. The gross margin or gross margin percentage is an important operating ratio. A small change in the gross margin can tremendously impact local savings. A cooperative manager must maintain a gross margin near industry averages. Thus, least cost sources of supplies need to be developed and marketing cooperatives must pay 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 daily basis. Cooperatives must have adequate gross margins to be profitable and afford to finance essential future-directed discretionary expenditures such as expansion and advertising.

Gross margin equals net sales less cost of goods sold, so cooperatives with higher COGS had lower gross margins. COGS were higher for marketing and larger cooperatives, so gross margins as a percent of net sales were highest for farm supply and small cooperatives. As a percent of sales, farm supply cooperatives–19.3 percent--had the highest gross margin. Although both types of farm supply cooperatives generally had less business volume than those of their marketing counterparts, gross margin percentage was from 9 to 11 percentage points higher. Small cooperatives that mostly sold farm supplies had the highest gross margin by size (15.8 percent).

Gross margins vary not only by cooperative, but also by farm supplies sold or products marketed. Cooperatives have different margins for different products. Forty cooperatives provided their individual product gross margins (table 11). Margins vary due to product type and competition. For instance, fertilizer sold by the truckload has a different margin than a single-bag sale. The services offered in conjunction with a sale (e.g., fertilizer spread by a cooperative truck) also have an impact on margins. Margins are also subject to competition. The gross margin represents a blended margin derived from all products the cooperative sold, services rendered, and products marketed.

The highest weighted (by volume) gross margin for the five main farm supplies (feed, seed, fertilizer, crop protectants, and petroleum products) was for feed at 20 percent. The maximum margin on seed of 89 percent was for a small amount, probably a speciality seed sold by the bag. Margins for other farm supplies ranged from 16 to 19 percent. Grains and oilseeds were the only products marketed where gross margins were known, low at around 5 percent.

Service and Other Income—This mostly consisted of trucking services (delivery of purchases and transfer of products to market), custom application of fertilizers and crop protectants, and drying and storing of grains and oilseeds. While local cooperatives

Table 11—Gross margin on farm supplies sold and grains and oilseeds marketed, 1999

Farm supply	Weighted margin	Maximum	Minimum	Number of observations
		Percent		Number
Feed	20.55	43.30	2.96	41
Seed	17.23	89.52	(2.34)	40
Fertilizer	19.22	44.12	5.96	43
Crop protectants	16.08	28.45	3.42	42
Petroleum products	18.36	35.02	1.33	35
Tires, batteries, & auto accessories	22.40	36.76	(155.03)	28
Machinery	(17.96)	(17.96)	(17.96)	1
Building materials	18.36	30.68	(21.96)	9
Hardware	28.55	37.27	(32.33)	9
Food	24.07	32.51	10.56	9
Other farm supplies	2.67	5.28	(.007)	43
Grains and oilseeds	5.28	13.33	2.12	24

provided many other services to their patrons, these were the primary ones. This income averaged between 4 percent and 6 percent of net sales for all sizes and types of cooperatives.

Other income was derived from non-operating sources such as interest and finance charges on cash equivalents and interest charged on credit sales. Other income also came from the sale of property, plant, and equipment, rentals, and extraordinary items. Sometimes property, plant, and equipment were sold to generate income, but usually fully depreciated and the market value was greater than the book value. In some cases, disposal of a fully depreciated asset may mean a loss. Rental income from unused facilities or equipment provided income flows. Extraordinary items might be either a gain or a loss. A gain could result from a fire loss where the insurance settlement was greater than the book value. A loss might occur from flood damage for which the cooperative had no coverage.

Operating Expenses—These were divided into four main categories--employee; administrative; general; and depreciation, interest, and bad debts. Employee expenses were related to labor costs. Administrative expenses included overhead costs associated with a cooperative and indirectly related to revenue production. General expenses were directly related to revenue production. The bulk were in employee, general, and depreciation categories.

Employee Expenses—These costs included salaries, wages, and benefits (payroll taxes, employee insurance, unemployment compensation, and pension expense) and averaged 7.8 percent of net sales. Employee expenses were up 7.6 percent from 1998.

As a percent of net sales, employee expenses ranged from 10.2 to 6.5 percent–small, 10.2; medium, 9.6; large, 9.8; and super, 6.5 percent. By type, employee expenses as a percent of net sales were 11.8 percent for farm supply cooperatives; 10.3, mixed farm supply; 5.5 mixed marketing; and 4 percent for marketing cooperatives.

Cooperatives surveyed had both part-time and full-time employees. For study purposes, four part-time employees were considered equivalent to a full-time employee. The expense for a single employee averaged $34,493 for an average 29 employees, up about 4 percent from 1998. By size, those expenses ranged from $30,045 for small to $36,133 for super cooperatives and by type from $31,754 for those selling only farm supplies to $36,028 for mixed marketing cooperatives (table 12). Small cooperatives averaged 8 full-time employees (excludes part-time); medium, 17; large, 33; and super, 64. Farm supply cooperatives averaged 19 employees; mixed farm supply, 39; mixed marketing, 33; and marketing, 27.

Cooperatives with significant farm supply sales tended to be more labor intensive. Operating a feed mill or service station, applying chemicals and fertilizers, and selling hardware required the use of several employees. For instance, a small farm supply cooperative had nine full-time employees while a small marketing cooperative used fewer employees--often only a manager, bookkeeper, and two others.

Administrative Expenses—These were indirectly related to generating income. Managers usually had more control over administrative expenses than any other cost. In years when revenues were down, managers could reduce expenses here more easily than elsewhere. Administrative costs include professional services, donations, dues and subscriptions, directors' fees and expenses, annual meetings, meetings and travel, office supplies, and telephone and market information.

Office supplies, the largest administrative expense, comprised 0.25 percent of net sales. Total administrative expenses were 0.72 percent of net sales. They ranged from 1.2 percent for small cooperatives to 0.54 percent for super cooperatives.

Although directors' fees and expenses were a small part of total costs, director compensation was important to many cooperatives. This fee was a small incentive for farmers to sacrifice time normally spent on their own operations devoting several hours of service each month to guiding their cooperative. Table 13 shows the number of directors and their compensation for 244 cooperatives in 1999. Expenses for a 10-member board were rather modest, averaging $896 per director annually. Small cooperatives paid directors the least ($685) and super paid the most ($1,817) while by type, mixed farm supply cooperatives paid the most at $1,365 per director.

General Expenses—Those were usually fixed in the short run and associated with income production--advertising and promotion, delivery (auto and truck), general insurance, property, business and other taxes and licenses, rent and lease expenses, plant supplies and repairs, repairs and maintenance, utilities (including dryer expenses), miscellaneous, and other. Most expenses (except of advertising and promotion)

Table 12—Calculated salaries (using both full- and part-time employee expenses) and actual number of full-time employees, 1999

	Small	Medium	Large	Super	All
Farm supply salaries	$32,204	$39,733	$37,755	$40,333	$37,603
Number of employees	9	19	44	67	19
Mixed farm supply salaries	31,502	38,076	46,975	40,718	41,117
Number of employees	7	18	31	79	39
Mixed marketing salaries	31,036	37,591	34,832	39,855	39,849
Number of employees	6	12	20	60	33
Marketing salaries	34,384	34,040	40,279	38,989	39,812
Number of employees	4	10	11	48	27
All salaries	33,801	39,090	41,066	40,148	39,588
Number of employees	8	17	32	63	26

Table 13—Board member salaries, 1999

Cooperative type	Salaries	Cooperative size	Salaries
Farm supply	$819	Small	$685
Mixed farm supply	1,365	Medium	479
Mixed marketing	716	Large	1,262
Marketing	699	Super	1,817
Average of all	896		

were not under direct management control.

General expenses averaged 4.4 percent of net sales in 1999. Repairs and maintenance at 0.97 and delivery expenses at 0.82 percent of net sales were the largest in the general category, followed by insurance and utilities, 0.54 percent each. For all sizes except super cooperatives, general expenses were about 5 percent. By type, expenses were around 3 percent of net sales for both marketing cooperatives and around 4 percent for both farm supply cooperatives.

Depreciation, Interest, and Bad Debts— Depreciation expense averaged 2.2 percent of net sales; interest, 0.87 percent; and bad debts, 0.11 percent. By size, depreciation expense as a percent of net sales was 2.5 percent for small cooperatives and 1.9 percent for super cooperatives. By type, depreciation expense was 2.8 percent of net sales for farm supply cooperatives, 2.6 percent for mixed farm supply cooperatives, 1.8 percent for mixed marketing, and 1.6 percent for marketing cooperatives.

Interest expenses–long- and short-term debt financing--increased slightly from 0.81 percent of net sales in 1998 to 0.87 percent in 1999. Interest expenses were lowest among small cooperatives at 0.5 and highest among large cooperatives at 0.96. For medium and super cooperatives, interest expense was about the same at 0.85 and 0.89 percent, respectively. By type, interest expenses were about 0.8 percent for both marketing cooperatives and around 1 percent for both farm supply cooperatives.

Bad debts as a percent of net sales fell as size increased--0.3 for small cooperatives and 0.06 for super cooperatives. By type, bad debts was 0.05 for marketing, 0.07 for mixed marketing, 0.11 for mixed farm supply and 0.21 for farm supply cooperatives.

Local Savings—This was generated from operations (before taxes and patronage refunds from other cooperatives). Local savings as a percent of net sales

Table 14—Respondent cooperatives that had losses, 1999

Cooperative type	Small	Medium	Cooperative size Large	Super	Average
			Percent		
Farm supply	31.73	15.56	29.17	0	26.12
Mixed farm supply	28.58	35.72	42.86	35.72	36.74
Mixed marketing	0	25.00	18.75	14.29	16.67
Marketing	40.00	25.00	20.00	0	28.58
Average	30.33	21.34	28.82	20.00	26.46

was around 1 percent for all sizes of cooperatives. By type, it was the highest for farm supply cooperatives (1.33 percent) and the lowest for marketing cooperatives (0.86 percent).

About 26 percent of the cooperatives studied had losses. While small cooperatives have higher returns on net sales, 37 or about one-third lost money, table 14. Thirty-seven percent of the mixed farm supply cooperatives lost money. In 1999, large mixed farm supply cooperatives lost 43 percent.

Patronage Refunds Received—Refunds received or income from other cooperatives resulted from business locals generated with other cooperatives, generally regionals, or cooperative banks such as CoBank. The patronage refund from regionals was based on business volume and consisted of cash refunds and equity stock. Stock was usually revolved back to the local cooperative on a set schedule. Many cooperatives that borrowed funds from CoBank and the Bank for Cooperatives received both cash and noncash patronage income. The noncash patronage from CoBank or the Bank for Cooperatives was from investing in the bank which was usually required in proportion to the funds borrowed.

Patronage refunds reflect the volume of business with regional cooperatives, CoBank or the Bank for Cooperatives. The dollar amount of patronage refunds between 1998 and 1999 was down 13 percent, suggesting 1999 must not have been a good year for regional cooperatives, CoBank, or the Bank for Cooperatives. Patronage refunds received were 2.1 percent of net sales for small and medium-sized cooperatives. By type, patronage refunds as a percent of net sales were higher for farm supply than for marketing cooperatives. These patronage refunds were an important source of revenues and allowed 19 (out of 77) cooperatives that had local losses to show net income.

Income Taxes—Cooperatives paid income taxes on earnings not allocated to members (retained earnings) and on dividend payments. The board determined what amounts of income were allocated to retained earnings and to members. Nonmember business has an impact on retained earnings because cooperatives can allocate the earnings to nonmembers or retain the income. In terms of net sales, income tax paid was 0.22 percent of net sales in 1999.

Income tax paid by cooperatives varied by size and type. Small and large cooperatives paid income taxes equal to 0.21 percent of their net sales, medium, 0.26; and super, 0.22. All cooperatives paid at least 0.2 percent.

Net Income—This appears on cooperative income statements. In 1999, net income as a percent of net sales was 2.5 percent. For large and super cooperatives it was about 2 percent and 3 percent for small and medium-sized cooperatives. By type, farm supply had returns of 3.3 percent on net sales; mixed farm supplies, 2.7 percent, mixed marketing cooperatives, 2.2 percent; and marketing cooperatives, 1.6 percent.

Pre-tax net income was generally distributed five ways–as non-cash patronage allocations, cash patronage refunds, retained earnings, income taxes, and dividends on patron's equity (table 15). Fifty-four percent of net income before taxes was held as non-cash patronage allocations by the 291 cooperatives that provided income allocations. Cash patronage refunds were 21 percent. Except for taxes, distributions of income were basically close to those in 1998.

Financial Ratio Analysis

Looking beyond levels of assets, liabilities, member equities, sales, and expenses, managers and boards of directors need comparative measures to evaluate their cooperative's financial performance.

Table 15—Distribution of net income before taxes

Item	1999	1998
	Percent	
Non-cash patronage allocations	54.19	56.54
Cash patronage refunds	21.51	21.83
Retained earnings	15.73	14.23
Taxes	8.30	7.32
Dividends	.27	.08
Net income before taxes:	$356,366	$405,389
Number of cooperatives:	291	291

Standard ratios used in this report included financial ratio analysis that allow performance comparisons between years and different cooperatives. No single financial indicator provides enough information to determine a cooperative's financial health, so ratios must be carefully interpreted. It is important to look at a group of financial ratios over a period of time, evaluate other cooperatives with similar sales and functions, and/or compare performance with others in the same geographical area.

Most figures show ratios for the 10-year period for all 512 cooperatives. Data for 1998 and 1999 reflect information gathered from the same 291 cooperatives that reported for both years. Performance ratios measure various levels of cooperative operations and generally have both a financial and operational impact. Four categories were used--liquidity, leverage, activity, and profitability. Many factors underlie each and examining one ratio may not pinpoint problems.

Liquidity Ratios—Include current and quick ratios and measure the cooperative's ability to meet short-term obligations. They focus on its ability to remain solvent. The current ratio is current assets divided by current liabilities. However, this ratio does not consider the degree of liquidity of each of current asset components. If the current assets of a cooperative were mainly cash, they would be much more liquid than if comprised of mainly inventory.

If the ratio is less than 1, current liabilities exceed current assets and the cooperative's liquidity is threatened. Improvements can be achieved by selling additional capital stock, borrowing additional long-term debt, or disposing of unproductive fixed assets and retaining proceeds. Current liabilities may also be reduced by retaining a greater portion of allocated savings (reducing the cash portion).

A high current ratio is a favorable condition financially because it indicates the ability to pay current liabilities from the conversion of current assets into cash. Operationally, this same high ratio tends to increase operating freedom and reduce the probability of bill-paying difficulty from write-downs of accounts receivable or inventory.

Figure 1 shows the current and quick ratios for the surveyed cooperatives. Current ratio was relatively constant for the last 5 years. The total current assets and liabilities decreased 1.6 and 0.64 percent, respectively. From 1998 to 1999, farm supply inventories, accounts receivable, and other receivables were the only elements of current assets that grew. Lower grain and oilseed inventories probably caused the 29-percent decrease in other liabilities (which contains grain trade payables).

The current ratio fell as cooperative size increased. The ratio was highest for small cooperatives (2.54) and lowest at 1.24 for super cooperatives (table 16). By type, the ratio was at least 1.20 for all types of cooperatives (table 17).

Quick ratio is current assets minus inventories, divided by current liabilities. Inventories--the least liquid of all current assets--are excluded. All elements of this ratio have increased. Financially, a high ratio allows little dependence on the salability of inventory to meet current obligations. Operationally, the results are the same as with the current ratio.

The quick ratio mimicked the movement of the current ratio. Small cooperatives (1.56) had the highest ratio and it decreased as size increased to 0.57 for super cooperatives (table 17). The quick ratio ranged from 0.55 for marketing cooperatives to 0.87 for farm supply cooperatives. This ratio was highest in 1990 and lowest in 1995 (figure 1).

Table 16—Financial analysis ratios by cooperative size, 1999

Ratio	Small	Medium	Large	Super
Liquidity				
Current	2.54	1.56	1.33	1.24
Quick	1.56	.85	.66	.57
Leverage				
Debt	.22	.35	.42	.49
Debt-to-equity	.29	.55	.71	.95
Times-interest-earned	7.26	4.95	3.87	3.80
Activity				
Total-asset-turnover	1.55	1.61	1.78	2.11
Fixed-asset-turnover	7.19	5.68	5.37	7.20
Profitability				
Gross profit margin	15.81	15.15	15.38	10.20
Return-on-total-assets before interest & taxes	5.61	6.82	6.61	7.17
Return-on-total-equity	7.98	10.81	10.54	12.91

Leverage Ratios—These ratios look at the long-term solvency of the cooperative and help analyze the use of debt and the ability to meet obligations in times of crisis. Debt ratio is defined as total debt divided by total assets. Elements include long-term debt plus short-term debt and total assets. Long-term debt increased about half the same rate of total assets, which may indicate some short-term obligations were being carried and converted to long-term debt. With inventories increasing in the short term, quick financing is needed, usually through the use of short-term debt.

In fact, between 1998 and 1999, short- and long-term debt increased 25 and 10 percent, respectively (table 5). Lenders would rather see a low ratio indicating the cooperative's ability to repay the loan. Overall, this ratio decreased slightly from .44 to .43 (figure 2). Reducing debt, increasing savings, or financing a greater portion of assets with working capital may improve this ratio.

Larger cooperatives were financing more assets with debt, but the highest ratio for any size or type of cooperative was still only 0.51 (tables 16 and 17). Small cooperatives had the lowest use of debt at 0.22 and marketing cooperatives the highest. By type, farm supply cooperatives had the lowest use of debt.

Debt-to-equity ratio is calculated by dividing long-term debt by total member equity. This ratio shows the financial flexibility and the long-term capital structure of the cooperative. High ratios indicate inadequate borrowing power. Debt-to-total-equity ratio decreased from 0.79 in 1998 to 0.75 in 1999 (figure 2 & table 18). A low ratio is more favorable and financially impacts the cooperative through independence on outside sources of funds relative to owners' equity. A low ratio may indicate low return on equity. Operationally, a low ratio tends to reduce interest cost. Improvement may be gained by disposing of unproductive assets and using proceeds to liquidate debt, or accelerating payments on long-term loans. Other ways include increasing local equity by generating higher levels of local savings, slowing down equity retirement programs, selling additional capital stock, or retaining more allocated savings.

As cooperatives' size grew, so did their use of long-term debt. The ratio was 0.29 for small cooperatives and 0.95 for super cooperatives (table 16). Marketing cooperatives had, at 1.06, the highest ratio by type, while farm supply cooperatives were the lowest at 0.53. When looking at the trend, the ratio increased slightly each year from 1990, except in 1999 (figure 2).

Table 17—Financial analysis ratios by cooperative type, 1999

Ratio	Farm supply	Mixed farm supply	Marketing	Mixed marketing
Liquidity				
Current	1.61	1.41	1.23	1.24
Quick	0.87	0.71	0.55	0.58
Leverage				
Debt	0.35	0.42	0.51	0.48
Debt-to-equity	0.53	0.73	1.06	0.91
Times-interest-earned	4.95	3.61	3.34	4.25
Activity				
Total-asset-turnover	1.49	1.75	2.52	2.19
Fixed-asset-turnover	5.13	5.72	8.06	7.87
Profitability				
Gross profit margin	19.30	15.86	6.70	8.24
Return-on-total-assets before interest & taxes	6.79	7.07	6.46	6.94
Return-on-total-equity	10.27	10.49	12.32	13.49

Figure 1—Current and Quick Ratios

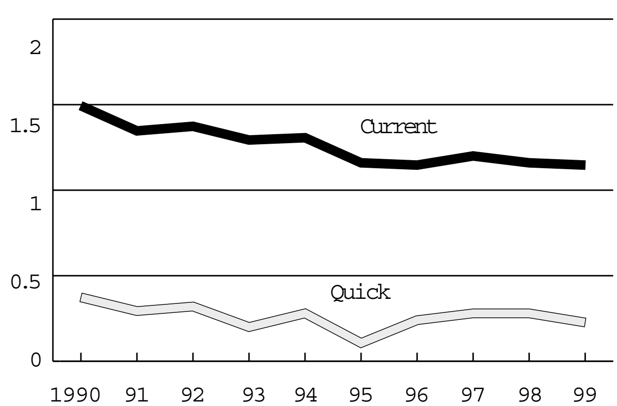
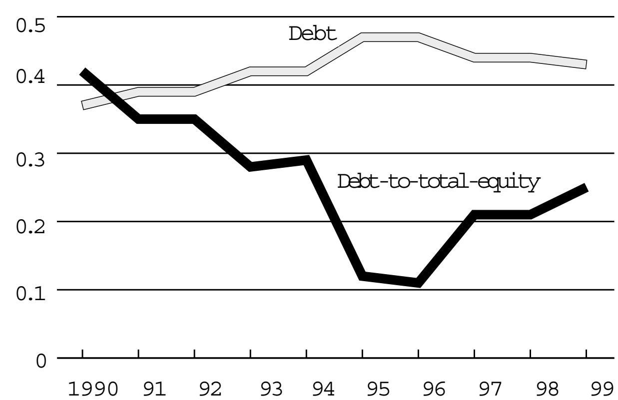


Figure 2—Debt-to-Total-Equity and Debt atio



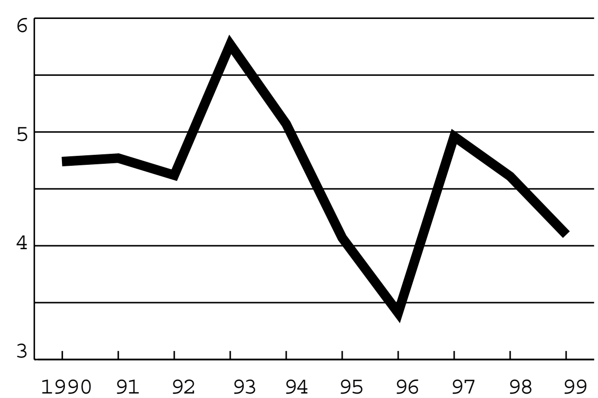
Times-interest-earned ratio is the number of times interest expense is covered by earnings. It is calculated by dividing earnings before interest and taxes by interest expense. A ratio of one or more indicates the ability of current earnings to pay current interest expenses. Lending institutions are more apt to loan to cooperatives whose times-interest-earned ratio is more than one (1) because it shows their ability to pay interest payments. Subsequently, a lending institution may lend funds at lower rates more readily for capital improvements.

This ratio was higher for respondent cooperatives in 1993 before starting a downward slide (figure 3). This ratio started a short-lived rebound in 1997 before another downward trend. Collecting old receivables, improving inventory turnover, disposing of assets and reducing debt with proceeds, or reducing debt with

Table 18—Financial analysis ratios for all cooperatives, 1999 and 1998

Ratio	1999	1998
Current	1.36	1.37
Quick	0.67	0.71
Debt	0.43	0.43
Debt-to-equity	0.75	0.79
Times interest earned	4.10	4.61
Total-asset-turnover	1.92	2.13
Fixed-asset-turnover	6.53	7.62
Gross profit margin	12.43	11.32
Return-on-total-assets before interest & taxes	6.86	7.88
Return-on-total-equity	8.32	10.21

Figure 3—Times-Interest-Earned



working capital may improve this ratio. Financially,a high ratio affects the return on equity and tends to increase it. Operationally, a high ratio reduces interest cost.

Interest coverage was the greatest for smaller cooperatives and generally fell as size increased to the super category (table 16). By type, the ratio ranged from 3.34 for marketing to 4.95 for farm supply cooperatives.

Activity Ratios—These ratios measure how well cooperatives use assets. A low ratio could mean that the cooperative was overcapitalized or carrying too much inventory. A high ratio could be deceptive. A cooperative with fully depreciated older assets could have an artificially high ratio even though those assets were no longer operating efficiently.

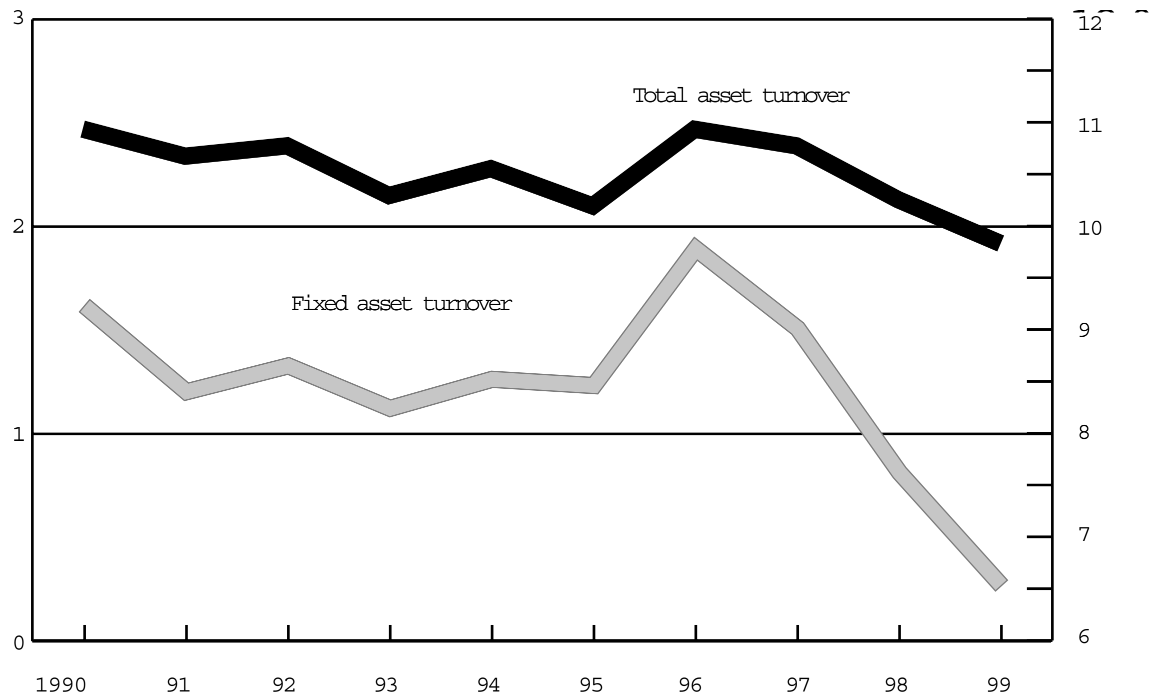
Total-asset-turnover ratio was found by dividing net sales by total cooperative assets. This ratio went down slightly from 2.13 in 1998 to 1.92 in 1999 (figure 4). The elements almost negated each other--total sales decreased by 6 percent and total assets increased by 5 percent. A high ratio favorably influences finances through the reduction of financial leverage and/or increased return on equity. A high ratio operationally tends to reduce interest costs.

The ratio was higher for larger cooperatives (table 16). Super cooperatives had the highest ratio at 2.11, indicating the most efficient use of assets. By cooperative type, the total asset turnover ratio was higher for marketing than for farm supply. The total asset turnover ratio was lowest in 1999 at 1.92 and highest in 1990 and 1996 at 2.47.

Fixed-asset-turnover ratio represents net sales divided by net property, plant, and equipment (PP&E). This ratio is similar to the total-asset-turnover ratio and shows how well the cooperative used its fixed assets. This ratio by itself might not give a complete picture of the cooperative's financial health. A cooperative with fully depreciated assets would have an artificially high ratio. A cooperative that invested heavily in PP&E for future expansion will have a temporarily low ratio.

After a high in 1996 of 9.78, this ratio remained relatively level between 1991 and 1995 (figure 4). In 1999, the ratio was 6.53, a slight decrease from 1998 and the lowest for the 10-year period. Sales decreased 6 percent while investment in fixed assets increased 10 percent. The measure for this ratio may or may not show favorable or unfavorable conditions, but merely cooperative conditions. An abnormally high ratio usually indicates very old, nearly depreciated fixed assets or the leasing of property and equipment.

Figure 4—Total and Fixed Asset Turnover



By size, a fixed-asset-turnover ratio of 7.20 was greatest for super cooperatives and by type, the highest (8.06) for marketing cooperatives.

A high ratio financially favorably influences by increasing asset use, reducing financial leverage, and/or increasing return on equity. A high ratio, operationally, tends to reduce depreciation and interest costs. It may also increase costs related to operating leases, personnel and travel, or delivery expenses. This ratio may be improved by restricting further investments in fixed assets; redesigning production, or office facilities to increase the sales generating potential of existing space and equipment; and/or selling idle machinery and parts, unused vehicles, and unnecessary equipment.

Profitability Ratios—These ratios, such as gross profit margin, indicate the efficiency of the cooperative's operations. Because a cooperative is owned by its user-members, many common industry profitability ratios have little meaning. For instance, profitability ratios measuring the return on common or preferred stock of similar investor-oriented firms are not appropriate because there is seldom an open market for cooperative stock.

Gross profit margin–an important operating ratio--is found by subtracting the cost of goods sold from net sales and then dividing this amount (gross margin) by net sales. A small change in the gross margin has a tremendous impact on local savings. It indicates the cooperative's pricing policy and cost of goods offered for sale.

For all cooperatives, the gross profit margin averaged 12.4 percent in 1999, the highest for the 10-year period (figure 5). By size, this margin was around 15 percent for all but the super cooperatives, which was lowest at 10.2 percent. The gross margins were 19.3 and 15.8 percent, respectively, for farm supply and mixed farm supply cooperatives (table 17).

Return-on-total-assets measures the rate of return on total investment. It is determined by dividing net income by total assets and usually calculated before interest and taxes. This ratio is a measure of performance. It is not sensitive to the leverage position of the cooperative. Although some assets were financed through debt, the ratio measures return to both members and lenders. This ratio declined by 1.02 percent to 6.86 percent from1998 and 1999 (table 18).

Net savings (before income taxes) declined 12 percent while interest expense increased only 2 percent in the 2-year period (table 8). For the decade, this ratio was highest in 1996 and 1997 and has been fairly constant (figure 6). Operationally, a high ratio tends to reduce interest cost and financially indicates a comparatively high rate of return on assets employed.

Figure 5—Gross Margin Percent

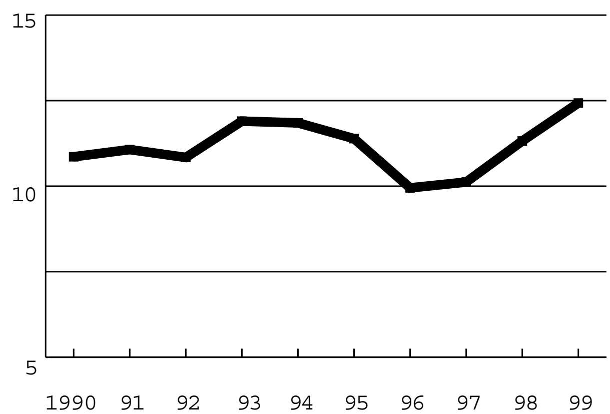
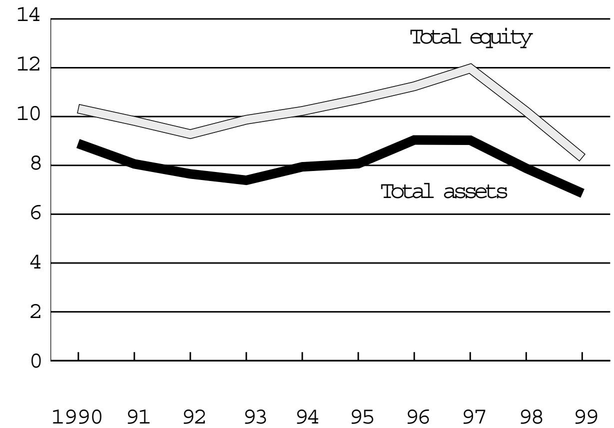


Figure 6—Return on Total Assets and Total Equity



Super, medium, and large-sized cooperatives had a higher return on total assets (table 16). Super-sized cooperatives were slightly higher at 7.17 percent. By cooperative type, return on total assets was highest for mixed farm supply cooperatives, at 7.07 percent.

Return-on-total-equity is net income divided by allocated equity. It was determined by subtracting unallocated equity from total member equities. It represents member investment in their cooperative and is an important measure of profitability.

This ratio decreased almost 2 percent in 1999 (table 18). This ratio is sensitive to the amount of debt capital in the cooperative and best used in conjunction with other measures such as the return-on-total-assets. Net savings decreased 13 percent while total equity increased about 5 percent from 1998 to 1999.

Financially, a high ratio is favorable and tends to decrease financial leverage. However, a high ratio may also be a symptom of insufficient investment. Operationally, a high ratio tends to reduce interest cost over time but may occur when both total debt and interest costs are high.

By size, this ratio increased as the cooperative grew in size. Super cooperatives had the highest return on allocated equity (12.91 percent). Farm supply and mixed farm supply cooperatives ratios were 10.27 percent and 10.49 percent and marketing and mixed marketing cooperatives were 12.32 percent and 13.49 percent (table 17).

Conclusions

Agricultural cooperatives continued to play a vital role in supplying goods and services to farmers and marketing their products. They were also important to rural communities, often one of the largest employers, and provided considerable tax revenues. There has been extensive consolidation of local cooperatives during the past two decades reflected an attempt to maintain an adequate size from which to provide their members with expanded products and markets. In many consolidations, cooperatives maintained branch locations to better serve members.

Locals maintained strong ties to regional cooperatives, CoBank, or the Bank for Cooperatives through which they obtained products, gained marketing opportunities, or borrowed needed capital. Although patronage refunds to local cooperatives decreased in the 2-year period, they helped 19 cooperatives remain profitable. Locals, however, can't depend consistently on large patronage refunds. This indicates further consolidation of locals is likely.

Although current assets declined, total assets increased 7 percent from 1998 to 1999. Investment in PP&E, grain and oilseed inventories, farm supply inventories, and accounts receivable for farm supply sales grew. More than half of the accounts receivable were less than 30 days old.

Current liabilities declined 0.6 percent in the 2-year period, with patrons' credit balances and "other" liabilities having the largest decrease. Current term and seasonal short-term debt used for financing operating expenses grew in double digits. Growth was also experienced in accrued expenses, long-term debt, and cash patronage refunds and dividends.

Owner equities grew 6 percent. Through all size and type categories, members averaged about 56 percent ownership in their cooperative for both years. Members of small cooperatives had the highest percentage of ownership while those in super-size cooperatives had the lowest.

Net sales and cost of goods sold fell. Grain production and sales were low and affected feed sales, which were also lower in 1999. Gross margins vary not only by cooperative, but also by farm supplies sold or products marketed. Margins increased about 4 percent.

The impact on ratio analysis follows:

1. Liquidity ratios--current ratio (current assets/current liabilities) was fairly steady at around 1.5 between 1990 and 1999. The quick ratio (current assets-inventory/current liabilities) mimicked the current ratio's trend;
2. Leverage ratios--debt ratio was at a high of 0.47 in 1996. After 1996, the ratio started to decline, with the sharpest downturn in 1997;
3. Activity ratios--total-asset-turnover ratio fell from 2.13 in 1998 to 1.92 in 1999 because total sales decreased 6 percent while assets increased only 5 percent with much of the increase in inventories; and finally
4. Profitability ratios--return on total assets ratio fell from 7.88 in 1998 to 6.53 in 1999 because total assets increased while net income decreased (13 percent).

Production and prices for most grains and oilseeds decreased greatly in 1999 and most inventories are probably stored until the cooperative or producers can capture higher prices. Other pressing issues are sure to arise in the coming years.

Cooperatives are owned by their farmer/member/patrons who want to own a business where they can purchase supplies and market products. In the interest of those member-owners, cooperatives will continue to adapt to changing economic conditions.

Appendix table 1—Common-size balance sheets for farm supply cooperatives, 1999

Item	Cooperative size: Small	Medium	Large	Super
	Percent of total assets			
Current assets				
Cash and cash equivalents	13.51	6.63	3.48	3.55
Accounts receivable	11.11	10.29	11.90	1.62
Inventories--grains and oilseeds	0.09	0.01	0.20	[1]
--farm supplies	18.07	18.59	20.12	16.60
Prepaid expenses	1.70	1.73	0.77	0.92
Other current assets	2.68	3.09	2.16	4.93
Total current assets	47.16	40.34	38.63	37.62
Investments and other assets				
Investments	30.13	29.88	24.20	24.70
Other assets	1.20	2.39	3.37	2.66
Net property, plant, and equipment	21.51	27.39	33.79	35.02
Total assets	100.00	100.00	100.00	100.00
Liabilities and owner equities				
Current liabilities				
Current portion of long-term debt	1.17	1.33	1.90	1.61
Notes payable-seasonal	2.92	6.56	7.73	8.70
Accounts payable	6.75	7.36	8.50	7.82
Other liabilities	4.62	7.00	7.65	6.34
Accrued taxes	0.26	0.39	0.69	0.56
Accrued expenses	1.57	1.64	2.22	1.49
Patronage refunds (cash)	1.02	1.22	1.16	0.96
Total current liabilities	18.31	25.50	29.85	27.47
Long-term debt	3.97	9.15	11.10	14.18
Total liabilities	22.29	34.66	40.95	41.65
Owner equities				
Allocated equity	56.97	51.07	44.14	39.83
Unallocated equity	20.75	14.28	14.91	18.52
Total owner equities	77.71	65.35	59.05	58.35
Total liabilities and owner equities	100.00	100.00	100.00	100.00
Based on total assets of:	$1,767,633	$4,790,804	$8,284,667	$14,894,088
-Number	85	38	26	5

[1] Less than 0.01 percent.

Appendix table 2—Common-size balance sheets for mixed farm supply cooperatives, 1999

Item	Small	Medium	Large	Super
	Cooperative size			
	Percent of total assets			
Assets				
Current assets				
Cash and cash equivalents	1.23	5.87	4.08	3.41
Accounts receivable	16.06	11.48	12.45	11.53
Inventories--grains and oilseeds	3.77	2.91	4.55	7.96
--farm supplies	18.41	14.70	13.19	13.37
Prepaid expenses	0.46	0.62	0.51	0.56
Other current assets	2.88	3.59	0.78	5.70
Total current assets	42.81	39.17	35.56	42.53
Investments and other assets				
Investments	36.29	26.28	26.57	25.36
Other assets	0.37	2.71	4.39	2.78
Net property, plant, and equipment	20.53	31.84	33.48	29.33
Total assets	100.00	100.00	100.00	100.00
Liabilities and owner equities				
Current liabilities				
Current portion of long-term debt	2.25	2.58	2.29	1.77
Notes payable-seasonal	9.32	4.52	5.88	8.70
Accounts payable	9.42	8.32	6.11	6.84
Patrons credit balances & other liabilities	1.31	7.10	7.50	9.70
Accrued taxes	0.00	0.40	0.52	0.47
Accrued expenses	1.86	1.18	2.26	2.29
Patronage refunds (cash)	0.82	1.02	1.03	1.07
Total current liabilities	24.98	25.12	25.59	30.84
Long-term debt	4.97	11.58	17.05	12.51
Total liabilities	29.96	36.70	42.64	43.35
Owner equities				
Allocated equity	49.74	41.64	45.29	45.51
Unallocated equity	20.31	21.66	12.07	11.14
Total owner equities	70.05	63.30	57.36	56.65
Total liabilities and owner equities	100.00	100.00	100.00	100.00
Based on total assets of:	$1,265,428	$3,789,366	$8,311,432	$17,431,572
-Number	7	15	16	16

Appendix table 3—Common-size balance sheets for mixed marketing cooperatives, 1999

Item	Small	Medium	Large	Super
	Cooperative size			
	Percent of total assets			
Assets				
Current assets				
Cash and cash equivalents	25.55	7.88	1.86	3.34
Accounts receivable	9.29	11.23	13.87	8.65
Inventories--grains and oilseeds	8.82	11.15	9.83	17.61
--farm supplies	9.11	11.09	9.34	10.37
Prepaid expenses	0.86	1.70	0.79	0.48
Other current assets	4.92	6.64	7.77	9.76
Total current assets	58.55	49.69	43.46	50.21
Investments and other assets				
Investments	22.82	24.54	24.64	20.67
Other assets	0.00	1.16	1.10	1.40
Net property, plant, and equipment	18.63	24.61	30.80	27.72
Total assets	100.00	100.00	100.00	100.00
Liabilities and owner equities				
Current liabilities				
Current portion of long-term debt	0.46	2.09	1.63	4.58
Notes payable-seasonal	2.67	4.51	9.85	14.92
Accounts payable	2.21	6.48	5.57	4.53
Patrons credit balances & other liabilities	7.98	17.42	12.67	14.79
Accrued taxes	0.22	0.54	0.78	0.86
Accrued expenses	0.79	0.92	1.03	1.45
Patronage refunds (cash)	0.97	1.03	1.15	1.26
Total current liabilities	15.30	32.99	32.68	42.39
Long-term debt	0.23	4.38	7.13	8.30
Total liabilities	15.53	37.36	39.81	50.69
Owner equities				
Allocated equity	55.56	38.22	39.15	34.66
Unallocated equity	28.91	24.42	21.04	14.65
Total owner equities	84.47	62.64	60.19	49.31
Total liabilities and owner equities	100.00	100.00	100.00	100.00
Based on total assets of:	$1,572,889	$3,718,720	$6,200,072	$20,056,164
-Number	6	13	14	24

Appendix table 4—Common-size balance sheets for marketing cooperatives, 1999

Item	Small	Medium	Large	Super
	Cooperative size			
	Percent of total assets			
Assets				
Current assets				
Cash and cash equivalents	9.89	0.88	7.09	2.75
Accounts receivable	8.32	9.82	5.57	6.42
Inventories--grains and oilseeds	13.88	14.29	17.56	18.12
--farm supplies	6.42	5.49	13.17	8.76
Prepaid expenses	2.34	0.26	1.51	0.46
Other current assets	8.58	8.96	10.28	11.31
Total current assets	49.43	39.70	55.18	47.82
Investments and other assets				
Investments--other cooperatives	22.61	18.55	9.74	20.53
Other assets	1.87	0.05	0.30	0.80
Net property, plant, and equipment	26.09	41.70	34.78	30.85
Total assets	100.00	100.00	100.00	100.00
Liabilities and owner equities				
Current liabilities				
Current Portion of long-term debt	0.19	3.14	3.57	4.94
Notes payable-seasonal	4.23	6.39	1.71	7.37
Accounts payable	3.26	4.52	10.31	5.37
Patrons credit balances & other liabilities	12.56	9.03	22.49	19.63
Accrued taxes	0.37	0.70	0.29	0.58
Accrued expenses	0.44	0.99	0.86	1.36
Patronage refunds (cash)	0.95	1.26	0.98	0.96
Total current liabilities	22.00	26.03	40.21	40.21
Long-term debt	3.01	11.36	14.21	12.63
Total liabilities	25.01	37.39	54.42	52.84
Owner equities				
Allocated equity	58.69	28.82	30.47	32.26
Unallocated equity	16.30	33.79	15.11	14.90
Total owner equities	74.99	62.61	45.58	47.16
Total liabilities and owner equities	100.00	100.00	100.00	100.00
Based on total assets of:	$1,572,889	$3,386,535	$4,152,686	$18,373,629
-Number	6	3	4	13

Appendix table 5—Abbreviated income statement as a percent of net sales for farm supply cooperatives, 1999

Item	Cooperative size			
	Small	Medium	Large	Super
	Percent of net assets			
Net sales	100.00	100.00	100.00	100.00
Cost of goods sold	82.26	81.19	79.24	81.02
Gross margin	17.74	18.81	20.76	18.98
Service and other income	4.51	4.39	3.62	3.84
Gross revenue	22.25	23.20	24.38	22.82
Expenses				
Employee[1]	11.43	11.36	12.57	11.46
Administrative[2]	1.34	1.16	1.08	0.79
General[3]	4.77	4.96	5.48	5.16
Depreciation	2.73	3.14	2.62	2.90
Interest	0.53	0.99	1.06	1.06
Bad debts	0.35	0.24	0.16	0.03
Total expenses	21.13	21.85	22.97	21.40
Local savings	1.11	1.35	1.41	1.42
Patronage refunds received	2.41	2.62	2.08	2.06
Savings before income taxes	3.52	3.97	3.49	3.48
Less income taxes	0.24	0.30	0.29	0.24
Net income	3.28	3.67	3.20	3.24
Based on sales of:	$2,536,616	$6,643,042	$13,216,636	$23,585,707

[1] Employee expenses include salaries and wages, payroll taxes, employee insurance, unemployment compensation, and pension expense.
[2] Administrative costs include professional services, office supplies, telephone, meetings and travel, donations, dues and subscriptions, directors' fees and expense, and annual meetings.
[3] General expenses include advertising and promotion, delivery (auto and truck), insurance, property, business and other taxes and licenses, rent and lease expenses, plant supplies and repairs, repairs and maintenance, utilities, miscellaneous, and other.

Appendix table 6—Abbreviated income statement as a percent of net sales for mixed farm supply cooperatives, 1999

Item	Small	Medium	Large	Super
	Cooperative size			
	Percent of net assets			
Net sales	100.00	100.00	100.00	100.00
Cost of goods sold	88.38	85.70	83.97	83.73
Gross margin	11.62	14.30	16.03	16.27
Service and other income	4.05	7.26	5.89	5.78
Gross revenue	15.67	21.56	21.92	22.05
Expenses				
Employee[1]	8.05	9.88	10.92	10.29
Administrative[2]	1.22	0.98	1.07	0.94
General[3]	3.49	5.66	5.62	5.52
Depreciation	1.44	2.59	2.62	2.61
Interest	0.73	0.94	1.13	1.16
Bad debts	0.14	0.18	0.05	0.11
Total expenses	15.08	20.23	21.43	20.63
Local savings	0.60	1.34	0.49	1.43
Patronage refunds received	1.26	1.58	1.90	1.75
Savings before income taxes	1.86	2.92	2.39	3.18
Less income taxes	0.12	0.20	0.10	0.28
Net income	1.74	2.72	2.29	2.90
Based on sales of:	$2,738,617	$6,936,308	$13,332,550	$31,256,467

[1] Employee expenses include salaries and wages, payroll taxes, employee insurance, unemployment compensation, and pension expense.

[2] Administrative costs include professional services, office supplies, telephone, meetings and travel, donations, dues and subscriptions, directors' fees and expense, and annual meetings.

[3] General expenses include advertising and promotion, delivery (auto and truck), insurance, property, business and other taxes and licenses, rent and lease expenses, plant supplies and repairs, repairs and maintenance, utilities, miscellaneous, and other.

Appendix table 7—Abbreviated income statement as a percent of net sales for mixed marketing cooperatives, 1999

Item	Small	Medium	Large	Super
	Cooperative size			
	Percent of net assets			
Net sales	100.00	100.00	100.00	100.00
Cost of goods sold	91.68	91.20	92.23	91.73
Gross margin	8.32	8.80	7.77	8.27
Service and other income	6.40	4.98	5.25	5.49
Gross revenue	14.72	13.78	13.02	13.76
Expenses				
Employee[1]	6.14	5.89	5.36	5.46
Administrative[2]	0.81	0.64	0.50	0.45
General[3]	4.53	3.49	3.75	3.90
Depreciation	1.79	1.88	1.87	1.79
Interest	0.12	0.53	0.72	0.79
Bad debts	0.08	0.16	0.12	0.07
Total expenses	13.47	12.59	12.32	12.45
Local savings	1.25	1.19	0.71	1.31
Patronage refunds received	0.42	1.45	1.45	1.16
Savings before income taxes	1.67	2.64	2.16	2.47
Less income taxes	0.04	0.25	0.21	0.22
Net income	1.63	2.39	1.95	2.25
Based on assets of:	$3,031,967	$7,659,546	$14,099,985	$46,800,267

[1] Employee expenses include salaries and wages, payroll taxes, employee insurance, unemployment compensation, and pension expense.

[2] Administrative costs include professional services, office supplies, telephone, meetings and travel, donations, dues and subscriptions, directors' fees and expense, and annual meetings.

[3] General expenses include advertising and promotion, delivery (auto and truck), insurance, property, business and other taxes and licenses, rent and lease expenses, plant supplies and repairs, repairs and maintenance, utilities, miscellaneous, and other.

Appendix table 8—Abbreviated income statement as a percent of net sales for marketing cooperatives, 1999

Item	Cooperative size			
	Small	Medium	Large	Super
	Percent of net assets			
Net sales	100.00	100.00	100.00	100.00
Cost of goods sold	93.51	93.93	94.14	93.19
Gross margin	6.49	6.07	5.86	6.81
Service and other income	4.04	6.02	3.89	4.11
Gross revenue	10.53	12.09	9.75	10.92
Expenses				
Employee[1]	3.88	4.63	3.48	4.05
Administrative[2]	0.58	0.54	0.34	0.31
General[3]	3.47	3.40	2.72	3.25
Depreciation	1.77	2.13	1.57	1.58
Interest	0.31	0.40	0.47	0.82
Bad debts	0.08	0.02	0.07	0.05
Total expenses	10.11	11.12	8.67	10.06
Local savings	0.41	0.97	1.07	0.85
Patronage refunds received	1.02	1.30	0.53	0.95
Savings before income taxes	1.43	2.27	1.60	1.80
Less income taxes	0.05	0.21	0.14	0.19
Net income	1.39	2.06	1.46	1.61
Based on sales of:	$3,545,504	$7,357,734	$12,721,337	$46,160,446

[1] Employee expenses include salaries and wages, payroll taxes, employee insurance, unemployment compensation, and pension expense.
[2] Administrative costs include professional services, office supplies, telephone, meetings and travel, donations, dues and subscriptions, directors' fees and expense, and annual meetings.
[3] General expenses include advertising and promotion, delivery (auto and truck), insurance, property, business and other taxes and licenses, rent and lease expenses, plant supplies and repairs, repairs and maintenance, utilities, miscellaneous, and other.

U.S. Department of Agriculture

Rural Business–Cooperative Service

Stop 3250

Washington, D.C. 20250-3250

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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.

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