



Financial Condition and Performance of Local Cooperatives in Missouri, 1970, 1978, and 1983

by
C. Brice Ratchford
Charles Cramer
Abdallah Omezzine
Brian Griffith

Special Report 326
July, 1985

Agricultural Experiment Station
University of Missouri-Columbia

FINANCIAL CONDITION AND PERFORMANCE OF LOCAL
COOPERATIVES IN MISSOURI, 1970, 1978, and 1983*

by

C. Brice Ratchford, Professor of Agricultural Economics
Charles Cramer, Professor of Agricultural Economics
Abdallah Omezzine, Research Assistant
Brian Griffith, Research Assistant

*This study was made under ACS Cooperative Agreement 58-3031-3-0033.

Introduction

Cooperatives are important to Missouri farmers and the state's economy. The purpose of this study is to determine the current economic health of the independent local cooperatives and changes over a 13 year period. All are incorporated under Missouri Statutes. Each has an elected board of directors who is responsible to the members for the operations of the firm. There are wide differences in volume of business, product and service lines, and size of geographic area served.

All of the locals are voluntarily affiliated with either MFA or Farmland Industries or both. In effect, the locals are retailers for the regionals. The regionals are the manufacturers and wholesalers owned by the locals.

The 1982-1983 data were obtained from the annual financial reports. Data for 1969-1970 and 1977-1978 were obtained from the same sources and have been published in previous University of Missouri Agriculture Experiment Station Reports.^{1/} The fiscal years end at different times. The three studies used reports ending between September of one year and August of the next. For ease of exposition, the data are labeled 1970, 1978, and 1983.

All studies included the entire population. The number has decreased from 126 in 1970 to 119 in 1978 to 105 in 1983. The attrition is due to a few mergers and a few going out of business.

The consumer price index (CPI) increased 155.7 percent between 1970 and 1983. This fact should be kept in mind as absolute dollar amounts are compared. Where possible, the absolute amounts are converted to common size or percentages which partially eliminates the impact of inflation.

Comparison of Financial Statements: Balance Sheets

The ^{2/}consolidated and common size balance sheets are presented in Table 1.

Total assets have increased during the 13 year period by 253 percent, considerably above the rate of inflation. The increase in real terms occurred, however, between 1970 and 1978. The increase in assets from 1978 to 1983 was only 9.5 percent while the CPI increased 87.7 percent during the same period. This means that the asset base eroded in real terms between 1978 and 1983.

^{1/}Gries and Torgerson, "Financial Structure of Local Missouri Farm Supply Cooperatives," Special Report 157, University of Missouri-Columbia, Agriculture Experiment Station, August 1973. Ratchford, Devino, McCutcheon, and Thomas, "Financial Structure and Conditions of Locally Owned Farm Supply and Marketing Cooperatives in Missouri," Special Report 272, University of Missouri-Columbia, Agriculture Experiment Station, November 1981.

^{2/}The consolidated statement is the sum of the balance sheets of the 105 local cooperatives. The common size statement presents each item as a percent of total assets for the 105 cooperatives.

TABLE 1: Consolidated and Common Size Balance Sheets of Missouri Locally Owned Farm Supply and Marketing Groups, 1970-1978 and 1982-1983

	1970 126 Locals		1978 119 Locals		1983 105 Locals		1978-83 Change	
	\$ Amount (000)	% of Total Assets	\$ Amount (000)	% of Total Assets	\$ Amount (000)	% of Total Assets	% of Total Assets	% of Total Assets
<u>Current Assets</u>								
Cash	2,839	6.00	5,622	3.69	4,137	2.48	-1.21	-3.52
Accounts & Notes Receivable	8,394	17.73	31,560	20.69	38,893	23.29	2.60	5.56
Merchandise Inventory	11,778	24.88	36,415	23.87	34,489	20.65	-3.22	-4.23
Other	<u>772</u>	<u>1.63</u>	<u>4,847</u>	<u>3.18</u>	<u>7,489</u>	<u>4.48</u>	<u>1.30</u>	<u>2.85</u>
Total Current Assets	23,783	50.24	78,444	51.43	85,008	50.90	-0.53	0.66
<u>Other Assets</u>								
Intercooperative Investments	7,587	16.03	35,120	23.03	41,489	24.85	1.82	8.82
Other Investments	<u>386</u>	<u>.82</u>	<u>613</u>	<u>.40</u>	<u>3,227</u>	<u>1.93</u>	<u>-1.11</u>	<u>-0.39</u>
Total Other Investments	7,973	16.85	35,733	23.43	44,716	26.78	3.35	9.93
<u>Fixed Assets</u>								
Total Cost	30,231	63.87	72,316	47.42	86,973	52.08	4.66	-11.79
Less Allowance for Depreciation	<u>14,655</u>	<u>30.96</u>	<u>33,962</u>	<u>22.27</u>	<u>49,713</u>	<u>29.76</u>	<u>7.49</u>	<u>- 1.20</u>
Net Fixed Assets	15,576	32.91	38,354	25.15	37,260	22.32	-2.83	-10.59
TOTAL ASSETS	47,332	100.00	152,531	100.00	166,984	100.00	.00	.00

TABLE 1 (Continued)

	1970		1978		1983		1978-83	1970-83
	126 Locals		119 Locals		105 Locals		Change	
	\$	% of	\$	% of	\$	% of	% of	% of
	Amount	Total	Amount	Total	Amount	Total	Total	Total
	(000)	Assets	(000)	Assets	(000)	Assets	Assets	Assets
<u>Current Liabilities</u>								
Accounts Payable	5,339	11.28	15,720	10.31	19,863	11.90	1.59	.62
Notes Payable	7,838	16.56	27,953	18.33	30,835	18.47	.14	1.91
Certificates of Indebtedness	449	.95	3,361	2.20	4,935	2.98	.76	2.01
Equities Payable	--	--	1,515	.99	637	.38	-.61	.38
Accrued Liabilities	934	1.97	3,099	2.03	1,332	.80	-1.23	-1.17
Other	<u>1,271</u>	<u>2.68</u>	<u>5,972</u>	<u>3.92</u>	<u>2,037</u>	<u>1.21</u>	<u>-2.71</u>	<u>-1.47</u>
Total Current Liabilities	15,831	33.43	57,620	37.78	59,639	35.72	-2.06	2.28
<u>Term Liabilities</u>								
Notes Payable	4,450	9.40	14,342	9.40	14,049	8.41	- .99	- .99
Certificates of Indebtedness	4,049	8.55	5,264	3.45	3,123	1.87	-1.58	-6.68
Bonds	1,120	2.37	2,278	1.49	1,622	.97	- .52	- 1.40
Other	<u>37</u>	<u>.08</u>	<u>891</u>	<u>.58</u>	<u>--</u>	<u>--</u>	<u>- .58</u>	<u>- .08</u>
Total Term Liabilities	9,656	20.40	22,775	14.92	18,794	11.25	-3.69	-9.15
TOTAL LIABILITIES	25,487	53.84	80,395	52.70	78,433	46.97	-5.73	-6.87
<u>Net Worth</u>								
Capital Stock	1,702	3.60	4,285	2.81	5,098	3.05	.24	- .55
Preferred Stock	888	1.88	1,534	1.01	2,723	1.63	.62	- .25
Membership Fees	82	.17	186	.12	699	.42	.30	.25

TABLE 1 (Continued)

	1970		1978		1983		1978-83	1970-83
	126 Locals		119 Locals		105 Locals		Change	
	\$ Amount (000)	% of Total Assets	\$ Amount (000)	% of Total Assets	\$ Amount (000)	% of Total Assets	% of Total Assets	% of Total Assets
<u>Net Worth (Continued)</u>								
Unallocated Savings	5,179	10.94	17,852	11.71	19,314	11.56	- .15	.62
Allocated Savings	<u>13,994</u>	<u>29.57</u>	<u>48,279</u>	<u>31.65</u>	<u>60,717</u>	<u>36.37</u>	<u>4.72</u>	<u>6.80</u>
Total Net Worth	21,846	46.16	72,136	47.20	88,551	53.03	5.73	6.87
TOTAL LIABILITIES AND NET WORTH	47,332	100.00	152,531	100.00	166,984	100.00	.00	.00

Total current assets were about 50 percent of all assets in all periods. The mix of current assets changed considerably with a decrease in cash and merchandise inventory and a sharp increase in accounts receivable.

Intercooperative investments have increased from 16 percent of total assets in 1970 to 25 percent in 1983. These investments are of particular concern because the local cooperative has essentially no control over size or liquidity. There is also a question about their actual current value in view of large losses suffered recently by MFA and Farmland. As of 1983 no local had adjusted the value of the equity held in a regional cooperative.

Fixed assets have decreased from 33 to 22 percent of assets in 13 years. Even absolute values declined between 1978 and 1983. These data indicate that there has been very little investment in fixed assets in the last five years.

There has been relatively little change in current liabilities. Term liabilities (long term debt) have decreased percentage wise in all periods and have decreased in absolute terms between 1978 and 1983.

Net worth has increased from 46 percent of assets in 1970 to 53 percent in 1983. Allocated savings are the predominant category. The percent of equity in unallocated savings has remained about constant. One reason likely is that under current practices unallocated savings is the first balance sheet item adjusted when the cooperatives' have operating losses.

The balance sheets as presented show the average Missouri local cooperative to be in excellent financial health. The judgment must be tempered by the uncertainties arising from the intercooperative investments which are 25 percent of the value of all assets and 50 percent of net worth in 1983. The accounts receivable are another uncertainty and in 1983 amounted to 44 percent of net worth.

Working capital is defined as current assets less current liabilities. As a ratio of total assets, working capital was 17 percent in 1970, 14 percent in 1978, and 15 percent in 1983, a generally satisfactory level in all years.

Income Statements

The consolidated and common size income statements are shown in Table 2. The dollar volume of net sales increased 243 percent between 1970 and 1983 but only 11.5 percent between 1978 and 1983. The change in the CPI for the same periods was 155.7 and 87.7 percent respectively. Between 1970 and 1978 there were significant decreases in the percentage points of net sales in the cost of goods sold, gross margins on sales, gross operating income and operating expenses. Between 1970 and 1983 the cost of goods sold rose 2.5 percentage points and gross margins on sales dropped 2.5 percentage points. Operating expenses as percent of total sales increased 0.9 percent between 1978 and 1983 but were 0.3 percent less than in 1970.

The impact of the changes mentioned above had a major impact on earnings. Consolidated net operating income in 1983 was a negative \$28,000. Patronage dividends received in 1983 amounted to \$1,259,000, only 26 percent of the amount received in 1978. The combination of essentially zero local earnings and substantially reduced patronage dividends received produced total earnings

TABLE 2: Consolidated and Common Size Income Statements Missouri Owned Farm Supply and Marketing Coops, 1970-1983

	1970 126 Locals		1978 119 Locals		1983 105 Locals		1978-83	1970-83
	\$	%	\$	%	\$	%	Change	
	Amount (000)	Net Sales	Amount (000)	Net Sales	Amount (000)	Net Sales	% Net Sales	% Net Sales
Net Sales	\$131,597	100.00	\$405,239	100.00	451,869	100.00	--	--
Cost of Goods Sold	116,088	88.21	368,695	90.98	409,874	90.71	- .26	2.50
Gross Margin on Sales	15,509	11.79	36,544	9.02	41,995	9.29	.27	-2.50
Other Income	2,483	1.89	9,283	2.29	15,488	3.43	1.14	1.54
Gross Operating Income	17,992	13.68	45,827	11.31	57,483	12.72	1.41	- .96
Operating Expenses	17,190	13.06	43,865	10.82	57,511	12.72	1.90	- .34
Net Operating Income	802	.62	1,962	.48	-28	.00	- .48	- .62
Patronage Dividends Received	1,347	1.02	4,886	1.21	1,259	.28	- .93	- .74
Net Income	2,149	1.64	6,848	1.69	1,231	.28	-1.41	-1.36

in 1983 of only .28 percent of sales. The situation is exacerbated by the fact that less than 50% of the patronage refunds were in cash.

Most Missouri locals have traditionally depended on patronage refunds from regionals for the majority of their total earnings. Proof is in the fact that in 1970 the regionals supplied 63 percent of total earnings, in 1978 71 percent, and in 1983 100 percent. While local cooperatives have control over local earnings, the significance of the regional patronage minimizes their control over total earnings.

Interrelationships Between the Balance Sheets and Income Statements

An important relationship is earnings to net worth. Most of the net worth is classified as either allocated or unallocated earnings. Unless there are current earnings, neither can grow and losses must be reflected in one of these equity categories.

The nature of capital in a cooperative also increases the importance of current earnings. All equity, except unallocated equity, must at some time be returned to the current holders. There is no secondary market. Hence the cooperative is faced with the problem of having sufficient current earnings to both retire "old" equity and accumulate additional equity.

The practice used uniformly on handling patronage refunds had impacts on both the income and balance sheet statements. The total value of the patronage refund received is reported as income at full value, even though a high percentage is in paper. This affects directly the amount of cash patronage refund the local can distribute. The withheld earnings statements of locals in fact represent withholdings by both the local and regional, but this fact is not indicated on the distribution notice. This makes the local responsible for retiring its own and the regional's equity.

The statements do permit calculation of return on intercooperative investments. The return in 1970 was 17.8 percent, in 1978 was 13.9 percent, and in 1983 was 3.0 percent. In all years the return was higher than on local investments.

The present accounting practices result in inflation of the amount of total equity in the system. Both the regionals and locals count the same amounts as equity. The impact is shown by excluding intercooperative investments from both assets and equity. The ratio of net worth to assets becomes 38 percent instead of 53 percent in 1983.

Variation in Financial Strength and Earnings

Net worth as a percent of total assets is one measure of financial strength. The variation among cooperatives in the ratio for 1983 is shown in Table 3. Only seven or 6.6 percent had a ratio of less than 25 percent; and only 36 or 34.2 percent had a ratio value of less than 50 percent. At the other extreme, 23 cooperatives or 22 percent had a ratio value in excess of 75 percent.

The consolidated and common size income statements for the 53 cooperatives with net losses and the 52 with gains are shown in Table 4. The

TABLE 3: Net Worth as Percent of Total Assets, 1983

Ratio Value	Number	Percent
0-25	7	6.6
25.1-50	29	27.6
50.1-75	46	43.8
75.1-100	23	22.0
	<u>105</u>	<u>100.0</u>

Table 4: Consolidated and Common Size Income Statements for Cooperatives
Showing Net Losses and Net Income Gains, 1983

	Cooperatives With Loss		Cooperatives With Gain	
	\$ Amount (000)	% of Net Sales	\$ Amount (000)	% of Net Sales
Number	53		52	
Net Sales	179,417	100.00	272,452	100.00
Cost of Goods Sold	163,425	91.09	246,449	90.45
Gross Margin	15,991	8.91	26,003	9.55
Other Income	5,685	3.17	9,802	3.60
Gross Operating Income	21,677	12.08	35,805	13.14
Operating Expenses	26,919	15.00	30,592	11.23
Net Operating Income	-5,241	- 2.92	5,213	1.91
Patronage Dividend	703	.39	555	.20
Net Income	-4,538	- 2.53	5,768	2.11
Interest Paid	3,887		2,980	
Interest as Percent of Operating Expenses		14.44		9.74

cooperatives with positive net income had average net sales of \$5.2 million as contrasted to average sales of \$3.4 million for those with losses. The major reasons for the difference in performance are the higher gross margins (0.64 percent) generated by the profitable cooperatives and lower operating expenses (3.77 percent).

Most of the difference in operating expenses is due to the fact that interest payments were 14.44 percent of total operating costs for the cooperatives with losses but only 9.74 percent for those with positive net margins. Patronage refunds received are less important to the profitable cooperatives in both an absolute and relative sense.

Analysis by Volume of Sales

Size and profitability are often assumed to be positively correlated. The cooperatives were sorted into five groups based on total sales. The groups are: Sales of less than 1 million--15 cooperatives; sales of 1 to 1.9 million--24 cooperatives; sales of 2 to 3.9 million--29 cooperatives; sales of 4 to 7.9 million--26 cooperatives; and sales of over 8 million--11 cooperatives. A summary of performance is presented in Table 5.

There is some relation between size and profitability. The percent of cooperatives showing profits increased from 20.0 percent in the smallest group to 63.6 percent in the largest group. Also only 30.8 percent of the cooperatives with less than two million sales showed profits while 60.6 percent of those with sales over two million were profitable.

Larger size was not a necessary condition for profitability, however. For example, the nine profitable cooperatives in the one to two million sales groups had a net return of 2.27 percent on sales while the seven profitable cooperatives in the largest sales group had earnings of 2.59 percent of sales. The profitable cooperatives in the smallest category earned .37 percent on sales contrasted to only .16 percent for those in the four to eight million category. With the exception of the smallest category, losses as percent of sales were about the same regardless of size.

A similar analysis was made in the 1978 study.^{3/} There was less correlation between size and profitability in 1983 than in 1978.

Selected balance sheet items by size category are presented in Table 6. The following conclusions may be drawn. Other assets which are primarily investments in regional cooperatives are more prominent in the balance sheets of the smaller cooperatives. Term liabilities are a higher percent of total liabilities in the smaller cooperatives. Net worth is about the same regardless of size except for the largest category.

The same characteristics were evident in 1978.^{4/}

^{3/}Ratchford, Devino, McCutcheon, Thomas, "Financial Structure and Condition of Locally Owned Farm Supply and Marketing Cooperatives in Missouri", SR 272, UMC Agricultural Experiment Station, Nov. 1981, page 13.

^{4/}Op. cit., page 14.

TABLE 5: Net Income and Net Loss for Missouri Locally Owned Farm Supply and Marketing Cooperatives for Five Size Categories Based on Total Sales, 1983

Groups	I Less Than 1 Million \$	II 1-1.9 Million \$	III 2-3.9 Million \$	IV 4-7.9 Million \$	V Greater Than 8 Million \$	Total
Number of Associations	15	24	29	26	11	105
Number of Associations with Positive Net Income	3	9	17	16	7	52
Percent with Positive Net Income	20.0%	37.5%	58.6%	61.5%	63.6%	49.5%
Total Net Income	\$59,305	\$275,531	\$819,528	\$145,511	\$3,158,397	\$5,768,272
Net Sales	\$15,777,640	\$12,135,873	\$47,588,073	\$89,055,908	\$122,094,840	\$272,452,334
Net Incomes to Net Sales (includes only those with positive net income)	.37%	2.27%	1.72%	.16%	2.59%	2.12%
Number of Associations with Net Losses	12	15	12	10	4	53
Percent with Losses	80.0%	62.5%	41.4%	38.5%	36.4%	50.5%
Total Net Losses	(\$338,194)	(\$462,799)	(\$617,150)	(\$1,270,523)	(\$1,849,455)	(\$4,538,121)
Net Sales	\$7,549,506	\$22,097,682	\$34,621,116	\$48,716,202	\$66,432,554	\$179,417,060
Net Losses to Net Sales	(4.48%)	(2.09%)	(1.78%)	(2.61%)	(2.78%)	(2.53%)

TABLE 6: Balance Sheet Information for Missouri Locally Owned Farm Supply and Marketing Cooperatives for Five Size Categories Based on Total Sales, 1983

Groups	I Less Than 1 Million \$ (000)	II 1-1.9 Million \$ (000)	III 2-3.9 Million \$ (000)	IV 4-7.9 Million \$ (000)	V Greater Than 8 Million \$ (000)	Total (000)
Number of Associations	15	24	29	26	11	105
Total Assets	\$3,396 100.00%	\$12,228 100.00%	\$30,816 100.00%	\$52,329 100.00%	\$68,215 100.00%	\$166,984 100.00%
Current Assets	\$1,718 50.59%	\$6,449 52.75%	\$15,426 50.06%	\$25,223 48.20%	\$36,192 53.06%	\$85,008 50.91%
Other Assets	\$1,168 34.39%	\$3,658 29.91%	\$10,120 32.84%	\$15,030 28.72%	\$14,740 21.61%	\$44,716 26.78%
Fixed Assets	\$510 15.02%	\$2,121 17.34%	\$5,270 17.10%	\$12,076 23.08%	\$17,284 25.33%	\$37,260 22.31%
Current Liabilities	\$764 22.50%	\$3,407 27.86%	\$9,737 31.60%	\$17,680 33.79%	\$28,051 41.12%	\$59,639 35.72%
Term Liabilities	\$649 19.11%	\$1,887 15.43%	\$3,338 10.83%	\$5,513 10.54%	\$7,408 10.86%	\$18,794 11.25%
Net Worth	\$1,983 58.39%	\$6,934 56.71%	\$17,741 57.57%	\$29,136 55.67%	\$32,756 48.02%	\$88,551 53.03%

The consolidated and common size income statements for the five sales categories are presented in Table 7. The following conclusions may be drawn. On average, profitability improves with size. The smaller cooperatives have higher gross margins, but these were more than offset by higher operating expenses as percent of sales. There was not a major difference in relative value of patronage refunds received by size category.

The same characteristics were evident in 1978.^{5/}

Financial ratios for the five size groups are presented in Table 8. The ratios are defined in the appendix. The current ratio and acid test measure liquidity. Liquidity decreased as size increased, but on average no size category had a problem. The leverage ratios reflect the earlier statements on the greater use of term liabilities by smaller cooperatives and low fixed assets in the smaller cooperatives. The larger cooperatives are more highly leveraged, but on average no group had a problem. The profitability ratios confirm earlier statements on the relation of size to earnings. The very high negative ratio of net income to net worth in the two smallest categories will necessarily result in corresponding decreases in net worth.

Some of the activity ratios show significant trends. Sales to working capital consistently increased with size, while sales to fixed assets decreased with size. No trend was evident in sales to total assets, inventory turnover, or the critical accounts receivable collection period.

A similar analysis was made in 1978.^{6/} The relative situation remained essentially the same in the two periods.

Intercooperative Investments and Patronage Refunds

A summary of the amount and relative importance of intercooperative investments is given in Table 9. In the 13 year period (1970-1983) the amount has increased 447 percent with most of the increase coming between 1970 and 1978. As a percent of total assets, these investments were seven percent higher in 1978 than in 1970 and 8.81 percent higher in 1983 than in 1970. The share of net worth represented by these investments rose from 34.73 percent in 1970 to 48.69 percent in 1978 but decreased to 46.85 percent in 1983.

Stock in the Bank for Cooperatives was \$1,533,921 or 3.6 percent of total intercooperative investments. All of the balance was in either MFA or Farmland Industries and was represented by written notices of allocation (from MFA) or non-voting common stock (from Farmland). The St. Louis Bank for Cooperatives is currently revolving its equity in six years while the date when the regionals will revolve is indeterminate.

The ratio of intercooperative investments to total assets was related to total sales and net earnings for 1983, Table 10. Earnings and profitability as measured by net income as percent of sales decreased as the percent of

^{5/}Op. cit., pages 16-17.

^{6/}Op. cit., pages 18-19.

TABLE 7: Income Statements of Missouri Locally Owned Farm Supply and Marketing Cooperatives for Five Size Categories Based on Total Sales, 1983

Groups	I Less Than 1 Million \$	II 1-1.9 Million \$	III 2-3.9 Million \$	IV 4-7.9 Million \$	V Greater Than 8 Million \$	Total
Number of Associations	15	24	29	26	11	105
Sales	\$9,127	\$34,234	\$82,209	\$137,772	\$188,527	\$451,869
Cost of Goods Sold	\$8,031 87.99%	\$30,307 88.53%	\$74,040 90.06%	\$123,853 89.90%	\$173,644 92.11%	\$409,874 90.71%
Gross Margin on Sales	\$1,096 12.01%	\$3,926 11.47%	\$8,169 9.94%	\$13,919 10.10%	\$14,884 7.89%	\$41,995 9.29%
Other Income	\$422 4.62%	\$870 2.54%	\$2,395 2.91%	\$4,508 3.27%	\$7,293 3.87%	\$15,488 3.43%
Gross Operating Income	\$1,518 16.63%	\$4,797 14.01%	\$10,564 12.85%	\$18,427 13.37%	\$22,177 11.76%	\$57,483 12.72%
Operating Expenses	\$1,828 20.03%	\$5,056 14.70%	\$10,745 13.07%	\$18,684 13.37%	\$21,198 11.24%	\$57,511 12.73%
Net Operating Income (or Loss)	-\$310 -3.40%	-\$259 -.75%	-\$181 .22%	-\$256 .19%	\$978 .52%	-\$280 -.01%
Patronage Dividends Received	\$31 .34%	\$72 21%	\$383 .47%	\$441 .32%	\$331 .18%	\$1,259 .28%
Net Income (or Loss)	-\$279 -3.06%	-\$187 -.56%	\$202 .25%	\$185 .13%	\$1,309 .70%	\$1,230 .27%

TABLE 8: Financial Ratios for Missouri Locally Owned Farm Supply and Marketing Cooperatives for Five Size Categories Based on Total Sales, 1983

	I Less Than 1 Million \$	II 1-1.9 Million \$	III 2-3.9 Million \$	IV 4-7.9 Million \$	V Greater Than 8 Million \$	Total
Number of Associations	15	24	29	26	11	105
<u>Liquidity Ratios</u>						
Current Ratio	2.25	1.89	1.58	1.48	1.29	1.40
Acid Test	1.07	1.11	.93	.79	.79	.83
<u>Leverage Ratios</u>						
Current Liabilities to Net Worth	.44	.49	.56	.61	.86	.68
Term Liabilities to Net Worth	.33	.27	.19	.19	.23	.21
Total Liabilities to Net Worth	.76	.76	.74	.80	1.10	.90
Fixed Assets to Net Worth	.26	.31	.30	.41	.53	.42
<u>Profitability Ratios</u>						
% Local Return	- 9.16	-2.12	-.60	-.49	1.43	-.02
% Return on Investments in other Cooperatives	2.60	1.96	3.79	2.94	2.25	2.81
% Net Income to Net Worth	-14.10	-2.70	1.14	.64	3.99	1.39
% Net Income to Total Assets	- 8.22	-1.53	.66	.35	1.92	.73
<u>Activity Ratios</u>						
Sales to Working Capital	10.72	11.25	14.45	18.33	23.16	17.81
Sales to Fixed Assets	17.89	16.14	15.60	11.41	10.91	12.12
Sales to Total Assets	2.69	2.80	2.68	2.63	2.76	2.70
Inventory Turnover	10.11	11.32	11.86	11.04	12.81	11.88
Net Accounts Receivable Collection Period	22.31	32.86	32.77	31.50	29.91	30.98

TABLE 9: Intercooperative Investments as Percent of Total Assets and Net Worth Missouri Locally Owned Farm Supply and Marketing Coops, 1970, 1978, 1983

	<u>1970</u>	<u>1978</u>	<u>1983</u>
Number of Associations	126	119	105
Intercooperative Investments	\$7,587,000	\$35,120,000	\$41,489,000
Intercooperative Investments as Percent of Total Assets	16.03%	23.03%	24.84%
Intercooperative Investments as Percent of Net Worth	34.73%	48.69%	46.85%

TABLE 10: Missouri Locally Owned Farm Supply and Marketing Cooperatives Arrayed by Percentage of Intercooperative Investments of Total Investments, 1983

Intercoop. Investments to Total Assets	Number	Total Sales	Average Sales	Total Net Income	Average Net Income	Net Income as % of Total Assets
Less than 18%	14	\$110,235,825	\$7,873,987	\$2,848,450	\$203,460	2.58%
18 - 24%	13	\$66,871,961	\$5,143,997	\$98,654	\$7,589	.15%
24 - 28%	27	\$118,956,457	\$4,405,794	-\$428,737	-\$15,879	- .36%
28 - 34%	25	\$106,964,110	\$4,278,564	-\$747,231	-\$29,889	- .69%
Greater than 34%	26	\$48,841,041	\$1,878,501	-\$540,985	-\$20,807	-1.11%

total assets represented by intercooperative investments increased. The data do not warrant a conclusion that large intercooperative investments per se are responsible for or even a major contributor to low earnings. Rather, a high ratio of intercooperative investments to total assets are largely reflective of the philosophy of the cooperative, market opportunities, management, and strategies of the cooperatives.^{6/} Data in Table 10 reaffirms the fact that the smaller cooperatives are more dependent on the performance of the regional cooperatives than are the large ones. This situation was true in all three studies.

The same analysis was made in 1978.^{7/} The relative situation is unchanged.

The patronage dividends received represent the return on the intercooperative investment. In 1983 the total patronage refund received was \$1,259,000. This represents a 3.0 percent return on the investment. Only \$332,606 or 28.8 percent of the refund was in cash, which is 0.8 percent return. If only the cash portion had been taken into the income statements, the 1983 consolidated income would have been \$304,606 rather than \$1,231,000.

Comparison of Financial Ratios

A comparison of average financial ratios for the three studies is shown in Table 11. There has been little change in liquidity. The cooperatives are slightly less leveraged in 1983 than in either 1970 or 1978. There has been a steady decline in profitability as evidenced by the decrease in local return from 2.4 in 1970 to 1.67 in 1978 to zero in 1983. Likewise, the return on investments in other cooperatives has decreased from 17.75 percent in 1970 to 13.92 percent in 1978 to 3.00 percent in 1983. In all periods, however, the return on intercooperative investments was higher than on local investments. The activity ratios point to a mixed performance. Inventory turnover has increased, indicating better inventory management. The accounts receivable collection period, however, has lengthened substantially.

Ratio Guidelines

Ratios are tools to assist in evaluating financial aspects of a single cooperative. An average of a population, such as shown in Table 11, is often used for comparative purposes.

Because of the large number of locals with poor performances, a different approach was selected. Weighted averages were used in all cases. Two steps were used to select good standards for comparison. First, the eight most profitable cooperatives in sales categories I, II, and III, with IV and V combined were selected. The measure of profitability was percent of net income plus interest expense to total assets. The net income plus interest

^{7/}Op. cit., page 26.

^{8/}It is the observation of the authors that the local cooperatives with a large share of assets represented by investments in other cooperatives are much less aggressive competitors.

TABLE 11: Average Financial Ratios^{1/} of Missouri Locally Owned Farm Supply and Marketing Coops, 1970-1978

	1970	1978	1983
Number of Associations	126	119	105
<u>Liquidity Ratios</u>			
1. Current Ratio	1.50	1.36	1.43
2. Acid Test	.76	.73	.85
<u>Leverage Ratios</u>			
3. Current Liabilities to Net Worth	.72	.80	.67
4. Term Liabilities to New Worth	.44	.32	.21
5. Total Liabilities to Net Worth	1.17	1.11	.89
6. Fixed Asset to Net Worth	.71	.53	.43
<u>Profitability Ratios</u>			
7. Local Return	2.02	1.67	0.00
8. Return on Investments in Other Cooperatives	17.75	13.92	3.00
9. Net Income to Net Worth	9.84	9.49	1.39
10. Net Income to Total Assets	4.54	4.49	.73
<u>Activity Ratios</u>			
11. Sales to Working Capital	16.55	19.46	17.81
12. Sales to Fixed Assets	8.45	10.57	12.12
13. Sales to Total Assets	2.78	2.66	2.70
14. Inventory Turnover	9.86	10.13	11.88
15. Net Accounts Receivable Collection Period	22.96	28.04	30.99

^{1/}See appendix for definition and calculation of ratios.

expense gives returns on total assets. This step partially offset the impact of volume of sales, yet included the better performing cooperatives. Second, the 32 most profitable were divided into quartiles based on profitability. Median values were calculated for the lower and upper quartiles along with the median of the entire group. The lower part of the suggested range is the midpoint between the median value for the lower quartile and group median, and the upper point of the range is the midpoint between the group median and the median value of the upper quartile.

The values resulting from the above procedure are given in Table 12. The data from which the ranges were developed are in Table 13. Table 13 also gives the median value for the lower and upper quartile, as well as the median for the population. These data enable a cooperative to compare itself with a number of situations.

The ratios for 1983 calculated in the above manner proved not to be as predictable as in 1978. In the former study the population median was always between the median for the lower and upper quartiles and the upper quartile had a more favorable ratio than the lower quartile. While this situation often prevailed in 1983, there were several cases where the population median was greater than the value for the lower and upper quartiles and in three cases the value for the upper quartile was less favorable than for the lower quartile. There is no apparent reason for the 1983 situation.

The suggested guidelines are the ranges except for the profitability ratios where only a minimum is suggested. The minimum is the low point of the range previously described.

Although of limited usefulness, it is interesting to compare the data for 1978 and 1983 in Table 12. The greatest differences are in the profitability ratios and in some of the activity ratios.

Conclusion

The purpose of the study was to determine the financial strength of Missouri local cooperatives and changes from 1970 through 1983. The major findings are:

1. The number of independent local cooperatives in Missouri is declining slowly, from 126 in 1970 to 105 in 1983.
2. The balance sheets as presented show that the average Missouri local cooperative is in excellent financial health. There is increasing concern as to whether the balance sheets reflect true value. The questions arise due to large accounts receivable with farmers, some of whom are in financial difficulty, and the worth of the investments in the regional cooperatives with both MFA and Farmland experiencing large losses in recent years.
3. Earnings as percent of net sales from local operations have declined from .62 percent in 1970 to zero in 1983. Even in 1970 earnings were low.
4. The average Missouri local cooperative has and continues to depend heavily on patronage refunds from the regionals to give minimally satisfactory total earnings. This practice ties performance of the locals directly to the performance of the regionals.

Table 12: Financial Ratio Guidelines for Missouri Locally Owned Farm Supply and Marketing Cooperatives

Ratio	Range about the Median for the most Profitable 32 Cooperatives 1978	Range about the Median for the most Profitable 32 Cooperatives 1983 ^{a/}	Suggested Guidelines 1983
<u>Liquidity Ratios</u>			
Current Ratio	1.55 - 2.32	1.12 - 2.00	1.15 - 2.00
Acid Test	.87 - 1.40	1.35 - 1.31	1.31 - 1.35
<u>Leverage Ratios</u>			
Current liabilities to new worth	.34 - .68	.37 - .42	.37 - .42
Term liabilities to net worth	.12 - .28	.12 - .13	.12 - .13
Total liabilities to net worth	.54 - 1.03	.50 - .54	.50 - .54
Fixed asset to net worth	.29 - .49	.31 - .40	.31 - .40
<u>Profitability Ratios (%)</u>			
Local return	6.30 - 10.60	5.60 - 7.82	Greater than 5.60
Return on investments in other cooperatives ^{b/}	12.50 - 20.50	2.20 - 2.74	Greater than 10.0
Net income to net worth	14.40 - 20.20	9.20 - 12.91	Greater than 9.20
Net income to total assets	8.70 - 12.20	6.13 - 8.36	Greater than 6.13
<u>Activity Ratios</u>			
Sales to working capital	8.45 - 12.30	10.03 - 10.48	10.00 - 10.50
Sales to fixed assets	11.50 - 16.65	13.00 - 10.76	10.75 - 13.00
Sales to total assets	2.35 - 3.05	2.77 - 2.82	2.77 - 2.82
Inventory turnover	9.08 - 12.45	12.54 - 13.15	12.55 - 13.15
Net accounts receivable collection period	18.49 - 28.60	29.50 - 26.16	26.00 - 24.50

^{a/}The first figure is the midpoint between the median for the least profitable and group median. The second figure is the midpoint between the group median and the median for the eight most profitable coops.

^{b/}The returns on such investments should always at least equal the opportunity costs which for a local will be either the rate of interest paid for borrowed money or the rate earned on funds invested.

TABLE 13: Lower Quartile, Median, and Upper Quartiles Financial Ratios for Missouri Farm Supply and Marketing Cooperatives, 1982-83

Ratios	Interquartile Range ^a	Most Profitable 32 Cooperatives (Median Values)	Population (Median Values)
Number of Associations		32	105
<u>Liquidity Ratios</u>			
Current Ratio	Lower Quartile	2.21	2.24
	Entire Group	1.98	1.40
	Upper Quartile	2.01	1.35
Acid Test	Lower Quartile	1.39	1.23
	Entire Group	1.31	.83
	Upper Quartile	1.31	.82
<u>Leverage Ratios</u>			
Current Liability to Net Worth	Lower Quartile	.34	.40
	Entire Group	.41	.68
	Upper Quartile	.42	.72
Term Liability to Net Worth	Lower Quartile	.10	.28
	Entire Group	.14	.21
	Upper Quartile	.12	.19
Total Liability to Net Worth	Lower Quartile	.45	.68
	Entire Group	.55	.89
	Upper Quartile	.54	.91
Fixed Assets to Net Worth	Lower Quartile	.25	.23
	Entire Group	.38	.42
	Upper Quartile	.42	.48
<u>Profitability Ratios</u>			
Local Return (%)	Lower Quartile	4.54	-4.50
	Entire Group	6.78	-.17
	Upper Quartile	8.86	1.03
Return on Invest. in Other Coop. (%)	Lower Quartile	1.79	1.55
	Entire Group	2.61	2.81
	Upper Quartile	2.86	2.60
Net Income to Net Worth (%)	Lower Quartile	7.12	-6.68
	Entire Group	11.39	-4.45
	Upper Quartile	14.44	3.13

TABLE 13: (Continued)

Ratios	Interquartile Range ^{a/}	Most Profitable 32 Cooperatives (Median Values)	Population (Median Values)
Net Income to Total Assets (%)	Lower Quartile Entire Group Upper Quartile	4.93 7.34 9.35	-4.01 .73 1.64
<u>Activity Ratios</u>			
Sales to Working Capital	Lower Quartile Entire Group Upper Quartile	9.32 10.73 10.21	9.29 18.51 20.81
Sales to Fixed Assets	Lower Quartile Entire Group Upper Quartile	15.73 11.27 10.24	19.47 12.12 10.81
Sales to Total Assets	Lower Quartile Entire Group Upper Quartile	2.73 2.81 2.83	2.79 2.70 2.74
Inventory Turnover	Lower Quartile Entire Group Upper Quartile	12.32 12.75 13.55	10.06 11.88 12.50
Net Accounts Receivable Collection Period	Lower Quartile Entire Group Upper Quartile	31.76 26.92 25.40	27.50 30.98 30.00

^{a/}The lower quartile represents the lowest one-fourth of the group in terms of earnings and the upper quartile represents the highest one-fourth in terms of earnings.

5. Cooperatives must retire or revolve all equity, except the unallocated, to present holders at some time. Current earnings are necessary to retire or revolve capital and accumulate new capital. Earnings in 1983 permit neither course of action.

6. With present accounting practices, the total patronage refund from the regionals is considered current income even though only part is in cash. Also the equity from the regionals is comingled with other equity in the statement net worth. The practice places an additional restriction on the percent of the patronage refund that the local can pay in cash and makes the local directly responsible for revolving the regionals equity. This practice also inflates the total equity in the coop system.

7. There was wide variation in earnings of local cooperatives. In 1983, 53 had losses averaging 2.53% on net sales and 52 had gains averaging 2.12% in net sales. Most of the difference results from interest payments which were 14.44% of sales for those with losses and 9.74% for those with positive net income.

8. Profitability and size are generally positively correlated. More of the larger cooperatives were more successful. Yet a few very small cooperatives were very profitable and a few large ones had losses. The conclusion is that larger size is likely to enhance profitability but large size is not a sufficient condition for profitability.

9. Intercooperative investments are 24.8% of all assets of local cooperatives in 1983, an increase of almost 9 percent since 1970.

10. Financial ratios computed quantify many of the conclusions reached above. The data as presented show strong liquidity and low leverage. All profitability ratios show poor earning performance in 1983. The activity ratios are mixed but confirm generally poor performance in 1983.

11. The suggested ratio guidelines are based upon median values of actual performance of the most profitable cooperatives in the size categories \$1-2 million net sales, \$2-4 million net sales, \$4-8 million net sales, and over \$8.0 million net sales. These should be useful in appraising financial aspects of Missouri local coops.

Recommendations

The study suggests the following recommendations:

1. Cooperatives need to develop plans that insure adequate local earnings to remain a viable institution. In deciding on an earnings goal, consideration should be given to the amount of equity that must be retired or revolved and additional capital requirements. Likewise the percent of the patronage refund the cooperative wants to pay in cash will influence the earnings goal. The investments of locals in regional cooperatives have generally been profitable, indeed more so than investments in local operations. Regardless of the performance of regional investments, local cooperatives should have a goal of satisfactory earnings from internal operation.

2. Balance sheets should be carefully examined to insure that they fairly present the situation. The valuation of accounts receivable and investments in other cooperatives should receive particular attention.

The locals should not unilaterally change the value of the investments in other cooperatives. Unless there is coordination between the regionals and locals any change will result in creating taxable income for some party. It is a matter that should be discussed by the locals and regionals. Pending some possible resolutions, those persons analyzing the balance sheets of locals should realize the investments in the regionals are likely overvalued.

There are also accounting and tax guidelines that should be followed in placing a value on accounts receivable. Any changes should be checked with the auditors.

3. Larger cooperatives tend to be more profitable and hence of greater value to the farmer-owner than smaller cooperatives. Hence, consideration should be given in geographic areas where there are several coops to mergers.

4. Consideration should be given to changing accounting practices for patronage from regionals. Under current accounting and tax guidelines, both cash and non-cash patronage refunds must be included as net income in the year received when the allocations are "qualified." Such would not be the case if the regionals issued "non-qualified" allocations. Switching from qualified to non-qualified allocations would be a major policy change that would require deep and serious study.

The locals can and should reflect in the income statement the amount of the patronage refund received that was in cash and in paper and highlight the fact in any narrative report.

The local cooperatives can separate the equity account of each member into the equity owned in the regional and in the local; and consideration should be given to making such a change. One advantage would be that the equity involvement plan for each type could be based on the respective policies and performances. Also it would be a valuable educational tool with members. The disadvantages are some added cost, particularly initially, and some loss in flexibility.

5. Currently all locals charge any annual operating losses against unallocated equity until that account is depleted. Several even show a negative unallocated equity in the balance sheet. Consideration should be given to allocating the losses to farmers and charging them against the allocated equity account. This practice would permit individual farmers to use the loss when filing their personal income tax.

APPENDIX
Definition of Financial Ratios

I. Liquidity Ratios: These ratios give an indication of the firm's capacity to meet its short-term obligations as they mature.

A. Current Ratios

$$\text{Calculation: } \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Guideline: 1.25 - 2.00

Interpretation: The ratio is a rough measure of a cooperative's ability to service its current liabilities at a given point in time. The ratio does not measure the critical factors of quality and composition of current assets.

B. Acid Test

$$\text{Calculation: } \frac{\text{Current Assets} - \text{Ending Inventory}}{\text{Current Liabilities}}$$

Guideline: 1.00 - 1.35

Interpretation: The ratio is a more conservative measure of liquidity than the current ratio. The less liquid inventory is not included in current assets. A ratio below 1 to 1 indicates a dependency on inventory to liquidate short-term debt.

II. Leverage Ratios: These ratios measure the amount of debt in relation to net worth.

A. Current Liabilities to Net Worth

$$\text{Calculation: } \frac{\text{Current Liabilities}}{\text{Net Worth}}$$

Guideline: .35 - .50

Interpretation: The ratio measures the amount of current debt to net worth. Creditors prefer a low ratio. A high ratio could indicate excessive current debt.

B. Term Liabilities to Net Worth

$$\text{Calculations: } \frac{\text{Term Liabilities}}{\text{Net Worth}}$$

Guideline: .12 - .20

Interpretation: The ratio measures the amount of term debt to net worth. Creditors like a low ratio, but a low ratio could indicate under utilization of term debt. A high ratio could indicate excessive debt.

C. Total Liabilities to Net Worth

$$\text{Calculation: } \frac{\text{Total Liabilities}}{\text{Net Worth}}$$

Guideline: .50 - .60

Interpretation: The ratio expresses the relationship between total liabilities and capital supplied by member patrons. A low ratio indicated greater flexibility to borrow in the future. A high ratio indicated low protection provided by the member patrons for the creditors.

D. Fixed Assets to Net Worth

$$\text{Calculation: } \frac{\text{Fixed Assets}}{\text{Net Worth}}$$

Guideline: .30 - .40

Interpretation: The ratio measures the extent to which net worth is tied up in non-liquid fixed assets.

III. Profitability Ratios: These ratios measure the effectiveness of management through the relationships of investment, returns and sales.

A. Local Return

$$\text{Calculations: } \frac{\text{Net Operating Margin}}{\text{Total Assets - Intercooperative Investment}}$$

Guidelines: Equal to or greater than interest on long term treasury bills.

Interpretation: The ratio measures the profitability of a cooperative's total non-intercooperative assets.

B. Return on Intercooperative Investment

$$\text{Calculation: } \frac{\text{Returns from Other Cooperatives}}{\text{Investments in Other Cooperatives}}$$

Guideline: Equal to or greater than interest on long term treasury bills.

Interpretation: The ratio measures the rate of return on investments in other cooperatives.

C. Net Income to Worth

$$\text{Calculation: } \frac{\text{Net Income}}{\text{Net Worth}}$$

Guideline: Equal to or greater than prevailing interest rates.

Interpretation: The ratio measures the rate of return on member patrons' investment in the cooperative.

D. Net Income to Total Assets

$$\text{Calculation: } \frac{\text{Net Income}}{\text{Total Assets}}$$

Guideline: Equal to or greater than prevailing interest rates.

Interpretation: The ratio measures the rate of return to member patrons' and creditors investments.

IV. Activity Ratios: These ratios measure the utilization of a cooperative's resources.

A. Sales to Working Capital

$$\text{Computation: } \frac{\text{Sales}}{\text{Current Asset} - \text{Current Liabilities}}$$

Guideline: 9.0 - 11.0

Interpretation: The ratio measures how efficiently working capital is employed. A low ratio may indicate poor working capital management. A high ratio may suggest a poor margin of protection for current creditors.

B. Sales to Fixed Assets

$$\text{Computation: } \frac{\text{Sales}}{\text{Net Fixed Assets}}$$

Guideline: 11.0 - 13.0

Interpretation: The ratio measures the ability of a cooperative to generate sales from its fixed assets.

C. Sales to Total Assets

$$\text{Computation: } \frac{\text{Sales}}{\text{Total Assets}}$$

Guideline: 2.5 - 3.0

Interpretation: The ratio measures the ability of a cooperative to generate sales from its total assets.

D. Inventory Turnover

$$\text{Calculation: } \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$$

Guideline: 11.0 - 13.0

Interpretation: The ratio measures the numbers of time inventory turned over during the year. A high ratio can indicate better liquidity, superior merchandising or shortages of inventory.

E. Net Accounts Receivable Collection Period

$$\text{Calculation: } \frac{\text{Net Accounts Receivable}}{\text{Sales} \div 360}$$

Guideline: 18.0 - 29.0

Interpretation: The ratio measures the number of days sales in accounts receivable. It gives a rough measure of the credit policy of the cooperative.