Changing Structure of Regional Cooperatives

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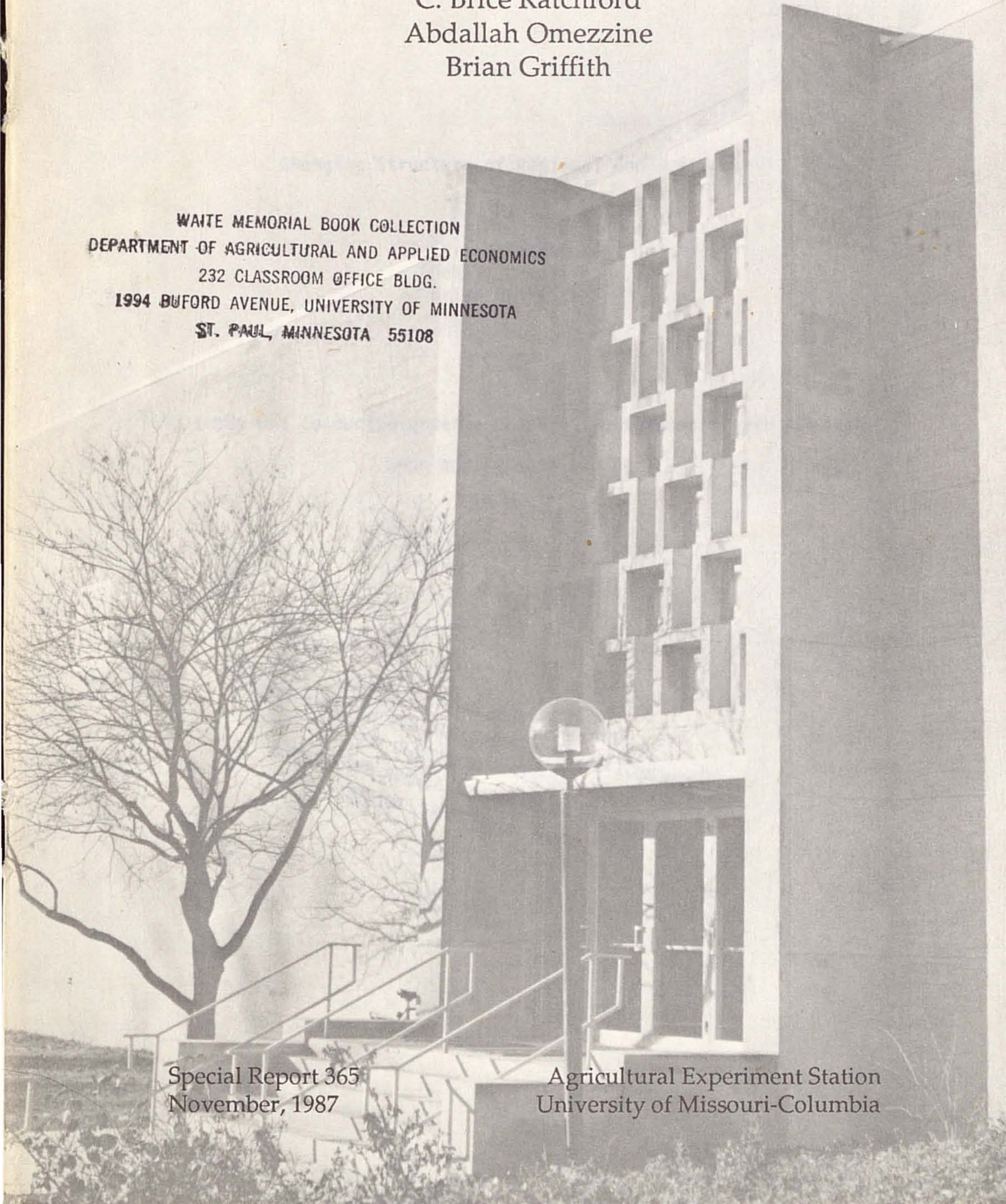

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The structure of an industry influences behavior of firms and also often influences profitability. The major elements of structure are: number and size of firms; ease of entry into or exit from business; and degree of product differentiation. One characteristic of industry structure in the United States is that it is constantly changing. While cooperatives differ from investor-owned firms (IOFs), the options available to cooperatives and competitive behavior between them are limited by the structure of their industry.

This study focused on the major regional cooperatives serving the milk, rice, cotton, grain and fertilizer industries.[1/] The structures of these industries were described in other studies based on data from the U.S. census. Because the Agricultural Cooperative Service (ACS) studied the cooperative sector of these industries, this study concentrates on the relationship of regional cooperatives to their members, be they farmers, cooperatives or both. It also focuses on recent changes in the cooperatives' relationship with members, other cooperatives and IOF firms. And finally, it reviews performance under the various structures.

The specific objectives were:

1. To determine the number, size and organizational structure of regional cooperatives involved in the production and distribution of fertilizer and the marketing of grain, milk, rice and cotton.
2. To identify changes in structure during 1981-84.
3. To identify recent changes in relationships within the federated cooperatives.

4. To determine the extent to which cooperatives use marketing agreements, pooling and bargaining tools, emphasizing change in the last four years.
5. To identify the marketing functions performed and their impact on structural and performance dimensions.
6. To identify the pressures, if any, for significant changes in the structure in each industry.

The researchers collected the primary data through a mail survey. They sent surveys to 71 cooperatives, and, 50 completed questionnaires were returned. The questionnaire asked for basic financial data for the 1981, '82, '83 and '84 fiscal years. They also requested non-financial information about types of memberships available; the relationships between regionals and their members; marketing channels; and changes in structural elements between 1981-84.

While most of the cooperatives did not confine themselves to a single activity, such as marketing grain, 39 cooperatives clearly had one primary activity.[2/] For 13 cooperatives, two or more lines of activity were of major importance. This latter group was labeled "mixed cooperatives."

The researchers united statistical analysis to comparing means and standard deviations because the sample size in each group was small. They calculated financial ratios from the means of balance sheet and operating statement elements.

Financial statements were the only measure of performance available. They are at best only an indication of performance for cooperatives because they do not reflect all benefits to owners/members. All net returns from a cooperative corporation go to members, and the firm has two options for returning all or part of the benefits. The firm can return the benefits up front through lower prices for its products and services, or it can distribute net earnings at the end of the year as patronage refunds. The organizations that pool usually give most of the potential savings to members when determining a price. Financial statements are better indicators of performance when the cooperatives price competitively and give the benefits to members in the form of patronage refunds. Even here, however, the statements are not as reliable a measure as they are for an IOF firm.

Summary of Financial Information for All Cooperatives

A summary of key balance sheet and operating statement items, along with four financial ratios for all cooperatives, is presented in Table 1. The information in this and all other tables is the average for the cooperative reporting for a particular year. This summary serves as a reference point. A direct comparison between industry groups is misleading because of differences between the groups.

The year 1981 was the best of the four years in terms of financial performance. Total sales averaged more than $900 million and earnings were 8.58 percent of net worth. Sales were 3.47 times total assets. The current ratio was 1.35 and the ratio of liabilities to total assets was 68 percent.

The year 1982 ended with a small average negative net income and decreasing total sales. There were minor changes in the current ratio, liabilities to assets and sales to assets. In 1983, total sales decreased sharply, but there was improvement over 1982 in all ratios except sales to total assets. There was considerable improvement in 1984. While total sales remained an average of $83 million below 1981, there was an improvement in all ratios except net income to net worth, which was 5.70 percent.[3/]

Table 1 Financial Information For All Cooperatives

Item	Average For 1981	1982	1983	1984
Number of Cooperatives	46	47	50	49
	Thousand Dollars			
Total Assets	262,056	258,339	244,544	236,666
Total Liabilities	178,868	178,379	164.936	152,670
Net Worth	83,188	79,960	79,608	83,996
Total Sales	909,593	850,063	726,650	826.962
Net Income Before Taxes	8,265	(368)	2,748	5,607
Income Tax	1,121	657	1,148	818
Net Income from Internal Operations	7,144	(1,025)	1,600	4,789
Patronage Refunds Received	6,480	4,139	2,403	2,826
Total Net Income	13,624	3,114	4,003	7,615
	Percents			
Current Ratio	1.35	1.33	1.37	1.41
Total Liabilities to Total Assets	.68	.69	.67	.64
Net Income/Net Worth	8.58	(1.28)	2.00	5.70
Sales to Total Assets	3.47	3.29	2.97	3.49

Financial and Structural Information For Cooperatives by Industry Type

Dairy Cooperatives

Sixteen dairy cooperatives out of a mailing list of 35 returned useable responses. These regional cooperatives were not located on the West Coast or in northeastern United States.

Key financial data for the group are presented in Table 2. The dairy cooperatives were in reasonably strong financial condition in 1981 and continued so through 1984. Despite lower milk prices in the latter years, the current ratio improved from 1.26 in 1981 to 1.35 in 1984. The total liability to total asset ratio improved from 68.9 percent in 1981 to 62.2 percent in 1984. The worsening economic situation for dairy farmers forced the cooperatives to squeeze their gross margins, which was reflected in the operating statement. Net income to net worth declined from 15.10 percent in 1981 to 8.30 percent in 1984. The total sales to total asset ratio declined from 5.60 in 1981 to 5.00 in 1984.

All of the cooperatives in this study were centralized.[4/] All except a single bargaining association pooled their milk. Only two had written marketing agreements executed with members, although the nature of the product and the way it is handled implies a marketing agreement of some sort.

Twelve of the cooperatives reported total volume of milk handled. Table 3 shows total U.S. production and the share handled by the reporting cooperative. The cooperative share remained quite stable. The drop in share in 1984 resulted from a large drop in one of the major cooperatives.

The cooperatives were asked which of the following marketing functions they performed: assembly, storage, selling, processing, distribution, production of consumers goods and direct exportation. One cooperative performed only one of the functions and two performed all seven. All the

Table 2 Financial Information For Dairy Cooperatives That Responded To The Survey

Item	1981	1982	1983	1984
	Average For			
Number of cooperatives	14	15	16	15
	----------------Thousand Dollars----------------			
Total Assets	95,175	98,763	100,132	102,263
Total Liabilities	65,612	63,660	63,890	62.021
Net Worth	29,535	35,103	36,242	40,242
Total Sales	528,375	501,709	504,223	514,481
Net Income Before Taxes	4,764	4,469	3,758	3,961
Income Taxes	294	287	367	641
Net Income from Internal Operations	4,470	4,182	3,391	3,320
Patronage Refund Received	1,119	596	535	757
Total Net Income	5,589	4,778	3,926	4,077
	------------------Percents------------------			
Current Ratio	1.26	1.30	1.32	1.35
Total Liabilities/Total Assets	68.90	64.40	63.80	62.20
Net Income/Net Worth	15.10	11.90	9.40	8.30
Sales/Total Assets	5.60	5.10	5.00	5.00

Table 3 Share of Total U.S. Milk Production Handled by Reporting Coops

Year	* Total U.S. Production	Milk Handled by Reporting Coops	Share of Reporting Cooperatives
	---------------------Hundred Thousand Pounds---------------------		
1981	130,467	46,730	36%
1982	133,144	48,010	36%
1983	137,301	52,250	38%
1984	132,371	46,800	35%

*Source: U.S. Ag. Statistics for 1985

other performed either five or six functions. The reporting cooperatives have generally moved quite far in integrating the channel toward consumers.

The cooperative sector continued to restructure, with 30 percent of those reporting merging with another cooperative during the four-year period, 30 percent acquiring at least one IOF dairy firm and 50 percent entering into a joint venture with another cooperative, an IOF firm or both.

The types of restructuring that occurred during the four-year study are apparently continuing at an accelerated pace.

Grain Cooperatives

Selected financial information for eight grain cooperatives is contained in Table 4.[5/] The data confirm other reports, which show that the 80s brought hard times to grain cooperatives.

In 1981, average net income from internal operations was $7,399 (11.54 percent of net worth). By 1984, that figure dropped to a loss of $6,044,000 (-10.50 percent of net worth). There was also a substantial loss in 1982 and a small positive net income in 1983. Because of patronage refunds received, total net income was positive (although quite modest) for all years except 1984.

Despite low earnings, there was little change in balance sheets during the study years. Total assets decreased slightly, but so did liabilities, leaving the ratio of total liabilities to total assets essentially unchanged at .70 to .71. There was slight improvement in the current ratio from 1981 (1.17) to 1984 (1.20). The average balance sheet was not strong in any year.

Activity as measured by the ratio of sales to total assets remained in the 5.03 to the 5.45 range except for 1983, when volume was sharply reduced due to the Payment-In-Kind program.

Table 4 Financial Information For Grain Cooperatives That Responded To The Survey

Item	Average For 1981	1982	1983	1984
Number	7	7	8	8
	Thousand Dollars			
Total Assets	211,421	194,953	199,771	196,056
Total Liabilities	147,314	136,424	142,075	138,601
Net Worth	64,107	58,529	57,696	57,455
Total Sales	1,141,891	978,148	727,646	1,069,088
Net Income before Taxes	7,864	(3,263)	845	(5,896)
Income Taxes	465	487	202	148
Net Income from Internal Operations	7,399	(3,750)	643	(6,044)
Patronage Refund Received	4,390	3,813	2,415	2,233
Total Net Income	11,789	63	3,058	(3,811)
	Percents			
Current Ratio	1.17	1.16	1.21	1.20
Total Liabilities/Total Assets	.70	.70	.71	.71
Net Income/Net Worth	11.54	(6.40)	1.11	(10.51)
Sales/Total Assets	5.40	5.03	3.64	5.45

Six of the grain cooperatives were federated, one was centralized and one was both centralized and federated. None pooled their members' grain and none had marketing agreements with members.

Typically, marketing functions performed were assembly, storage and selling. One cooperative however, was primarily a processor (AGP) and two did some direct exporting.

There was a lot of restructuring within these cooperatives during the four years. Two major restructurings occurred when Harvest States was created through the consolidation of Farmers Union Grain Terminal Association (GTA) and North Pacific Grain Growers and when AGP was created through consolidation of soybean crushing facilities owned by Farmland, Boone Valley and Land-O-Lakes. Other restructurings were: Far-Mar-Co merged with Farmland Industries 1981; Growmark purchased the St. Louis Grain Terminal in 1982; and MFA sold elevators to Far-Mar-Co and sold soybean crushing operations to Staley in 1984. Two additional cooperatives made minor acquisitions of other cooperatives.

The share of total U.S. production handled by the reporting cooperatives is given in Table 5. In both 1981 and 1982, the share was 14.9 percent but rose to 19 percent in 1983, the year of PIK. The share had declined, however, to 13.8 percent in 1984.

The four years studied proved to be a harbinger of what was to come. The largest cooperative of the group, Agri Industries, faced bankruptcy, sold its assets and formed a non-cooperative joint venture with Cargill. The grain division of Farmland, Far-Mar-Co, was sold to Union Equity. Growmark spun its grain division into a joint venture with ADM. Landmark, Ohio Farmers and Agraland Grain merged into Countrymark, with a wholly-owned subsidiary of Mid-States Terminals. Farmers Export Co-op has passed from the scene. There

Table 5 Share of Total U.S. Grain Production handled by Reporting Coops

Year	Volume handled by Coops	U.S. Production*	Share of Reporting Cooperatives
	(Bu)	(Bu)	
	------------------------Hundred Thousands------------------------		
1981	2,071	13,876	14.9%
1982	2,091	14,024	14.9%
1983	1,654	8,717	19.0%
1984	1,786	12,972	13.8%

*Source - Agricultural Statistics for 1985 were many consolidations at the local level. It appears that the restructuring is still far from complete.

Fertilizer Manufacturing Cooperatives

While many cooperatives handle fertilizer, only CF Industries and Mississippi Chemical were classified as fertilizer cooperatives in this study. Farmland Industries, which is included in the mixed category, is the third major cooperative fertilizer manufacturer.

The financial information for the two cooperatives is presented in Table 6. They are large organizations with assets of more than $1 billion and sales of more than $2 billion. The organizations showed modest earnings in 1981 and 1984 and substantial losses in 1982 and 1983. Earnings vary sharply from year to year because of three factors. First, with high fixed assets, a change in volume causes large changes in earnings. Second, because of seasonality of use, the manufacturers must carry large inventories, and a significant change in price from one year to the next is reflected in changed earnings. Third, fertilizer is increasingly traded on world markets and cheaper imports adversely affected domestic prices and volume. All three factors had some negative impact on earnings for the four years of the study.

The balance sheets were strong in 1981 and improved slightly by 1984. The ratio of total liabilities to total assets improved from .65 in 1981 to .59 in 1984. The current ratio increased from 1.49 to 1.53 during the same period.

Mississippi Chemical has both farmers and other cooperatives as members. It manufactures and mixes chemicals and distributes them to local cooperatives and farmers. It has no marketing or membership agreements. It acquired a potash company during the four years and spent about $2 million annually for research and development.

Table 6 Financial Information For Fertilizer Cooperatives Included In The Survey

Item	Average For 1981	1982	1983	1984
Number of Cooperatives	2	2	2	2
	Thousand Dollars			
Total Assets	1,257,568	1,126,444	1,021,964	989,723
Total Liabilities	818,359	771,503	640,532	584,339
Net Worth	439,219	354,941	381,432	405,386
Total Sales	2,303,887	2,273,809	1,945,492	2,175,249
Net Income Before Taxes	28,908	(61,065)	(30,828)	24,766
Income Tax	5,338	(841)	8,509	4,076
Net Income from Internal Operations	23,670	(60,224)	(39,337)	20,690
Patronage Refunds Received	12,461	9,982	6,750	11,802
Total Net Income	36,131	(50,242)	(32,587)	32,492
	Percents			
Current Ratio	1.49	1.36	1.50	1.53
Total Liabilities to Total Assets	.65	.68	.63	.59
Net Income/Net Worth	5.39	(16.96)	(10.31)	5.10
Sales to Total Assets	1.83	2.02	1.90	2.20

CF Industries is a federated cooperative with 16 regional cooperatives as members. CF has purchase agreements with its members. It manufactures, mixes and distributes to local cooperatives.

The volume of fertilizer handled by all cooperatives in the study and the cooperative share of total U.S. consumption are shown in Table 7. The cooperative share tended to increase and was substantially higher in 1983, the year of lowest total usage. The cooperatives more than held their own in some hard years for fertilizer manufacturers.

Cotton Cooperatives

Financial data were secured from five regional cotton marketing cooperatives, which is the total population. The results are presented on Table 8.[6/]

Both assets and liabilities varied sharply from year to year primarily because of the size and value of the inventory in the pool of cotton at the end of the fiscal years. Net worth was more consistent, and in 1984, the ratio of total assets to total liabilities was .61, an acceptable level for cooperatives. The current ratio varied from a low 1.06 in 1982 to a high of 1.26 in 1984.

Earnings were good in all years. They exceeded 10 percent on total assets in two of the four years and varied from a 35.90 percent of net worth in 1981 to a high of 50.85 in 1983. It is difficult to compare cooperatives that operate with pools to those that operate on a buy/sell basis, because the cooperative board and management can decide when the pool is closed, how much income goes directly to members and how much the cooperative retains for allocation later.

Table 7 Reporting Cooperative Share of Total Fertilizer Used In The United States

Year	Tons: Handled by reporting coops[1/]	Tons: Total U.S. Use*	Share of Reporting Cooperatives
	(000)	(000)	%
1981	21,241	53,988	39.3
1982	20,250	48,669	41.6
1983	18,516	41,813	44.2
1984	21,169	50,183	42.2

*Source - Ag. Statistics for U.S. 1985

[1/] This table includes the fertilizer production of Farmland Industries.

Table 8 Financial Information For Cotton Cooperatives Included In The Study

Item	Average For 1981	1982	1983	1984
Number of Cooperatives	5	4	5	5
	Thousand Dollars			
Total Assets	77,677	133,061	134,449	62,531
Total Liabilities	58,750	110,091	112,117	38,054
Net Worth	18,927	22,970	22,332	24,477
Total Sales	297,376	282,209	257,589	341,241
Net Income Before Taxes	7,203	11,846	12,099	10,015
Income Tax	408	520	743	599
Net Income from Internal Operations	6,795	11,326	11,356	9,416
Patronage Refunds Received	1,243	931	371	676
Total Net Income	8,038	12,257	11,727	10,092
	Percents			
Current Ratio	1.11	1.06	1.07	1.26
Total Liabilities to Total Assets	.76	.83	.83	.61
Net Income/Net Worth	35.90	49.20	50.85	41.23
Sales to Total Assets	3.83	2.12	1.92	5.46

All the cotton cooperatives supplied non-financial information. All five of the cotton cooperatives were centralized and made no significant structural change from 1981-1984. While only one converted cotton to yarn, three others processed seed and produced consumer products. All were involved in most of the marketing functions listed in the questionnaire.

Four of the five cooperatives required pooling. Two allowed the options of call or seasonal plans.

The share of total U.S. cotton production handled by the cooperatives is given in Table 9. The table shows that the volume handled by the cooperatives is much less volatile than total production. The cooperatives' share also appears to be growing.

Rice Milling Cooperatives

There are five rice milling cooperatives, and all are included in this study. Each operates in a small geographic area and has only farmers as members. Financial information on the cooperatives is presented in Table 10.

Both total assets and liabilities increased, and so did net worth. The ratio of total liabilities to total assets improved from .67 in 1981 to .59 in 1984. The current ratio increased from 1.24 in 1981 to 1.44 in 1984. The balance sheets were strong.

Sales declined from $326 million in 1981 to $229 million in 1984. Net earnings, while dropping steadily over the four years, were still a respectable 10.20 percent of net worth in 1984. Because all the cooperatives pooled rice, the cooperatives net earnings did not necessarily have the same significance as they did in non-pooled operations. None of the rice cooperatives received patronage refunds, and only one paid income taxes. These items were therefore dropped from the tables. The lower sales volume as

Table 9 Share of U.S. Cotton Production Handled By The Reporting Cooperatives

	Bales		
Year	Handled by reporting coops (000)	U.S. Production* (000)	Share of Reporting Cooperatives %
1981	3,038	15.645	19.4
1982	3,516	11,962	29.4
1983	2,848	7,771	36.6
1984	3,490	12,981	26.9

*Source: Agricultural Statistics for 1985

Table 10 Financial Information For Reporting Rice Cooperatives

Item	1981	1982	1983	1984
	Average For			
Number of Cooperatives	4	5	5	5
	Thousand Dollars			
Total Assets	71,277	76,294	102,831	89,911
Total Liabilities	48,060	50,001	67,434	53,074
Net Worth	23,217	26,293	35,397	36,837
Total Sales	326,262	256,380	230,002	228,915
Net Income Before Taxes	6,145	6,078	5,750	3,757
	Percents			
Current Ratio	1.24	1.25	1.32	1.44
Total Liabilities to Total Assets	.67	.66	.66	.59
Net Income/Net Worth	26.46	23.12	16.24	10.20
Sales to Total Assets	4.58	3.36	2.24	2.55

reflected in the sales to total asset ratio decreased from 4.58 in 1981 to 2.44 in 1983 and was only slightly higher in 1984.

All of the cooperatives were centralized and had producer contracts or marketing agreements. The only structural changes during the four years were minor acquisitions of IOF firms by two cooperatives. Riceland Foods moved more strongly into grains but did not change basic structure or practices.

All cooperatives pooled all rice. Four used only a seasonal pool and one permitted the choice between seasonal, purchase and optional pools.

All the cooperatives are vertically integrated, performing essentially all functions from assembling to producing consumer goods to exporting directly.

The share of total U.S. production handled by the cooperatives is shown in Table 11. Two observations are apparent. The volume of cooperatives is less volatile than total production and cooperatives increased their share since 1981.

Mixed Cooperatives

"Mixed cooperatives" include cooperatives with at least two major product lines. Many offer both farm supplies and marketing services. In the farm supply sector, all cooperatives studies offered fertilizer, petroleum (and other chemicals), feed and seed. Diversity distinguishes these cooperatives from other cooperatives in the study.

The financial data about 13 of the cooperatives are presented in Table 12. The cooperatives were large, with average total assets of $366 million, total liabilities of $249 million and sales of $1,176 million in 1984. The financial information remained remarkably stable over the four years, with the only significant variation occurring in net earnings. The current ratio varied from a relatively strong 1.41 to 1.48. The total liabilities to net

Table 11 Share of U.S. Rice Production Handled By The Reporting Cooperatives

Year	Cwt. Handled by reporting coops (000)	Cwt. U.S. Production* (000)	Share of Reporting Cooperatives %
1981	34,662	182,742	19.0
1982	46,181	153,637	30.1
1983	39,368	99,720	39.5
1984	39,395	137,033	28.7

*Source: Agricultural Statistics for 1985.

Table 12. Financial Information For Mixed Cooperatives Included In The Survey

Item	Average For 1981	1982	1983	1984
Number	13	13	13	13
	----Thousand Dollars----			
Total Assets	377,206	384,834	367,285	366,377
Total Liabilities	262,951	267,258	251,414	248,757
Net Worth	114,255	117,576	115,871	117,620
Total Sales	1,288,246	1,247,164	1,089,948	1,144,207
Net Income before Taxes	8,280	4,120	5,752	9,053
Income Taxes	1,476	1,576	874	662
Net Income from Internal Operations	6,804	2,544	4,878	8,391
Patronage Refund Received	13,324	7,977	4,251	3,655
Total Net Income	20,128	10,521	9,129	12,046
	----Percents----			
Current Ratio	1.81	1.44	1.48	1.48
Total Liabilities/Total Assets	.70	.69	.68	.68
Net Income/Net Worth	5.96	2.16	4.21	7.13
Sales/Total Assets	3.42	3.24	2.97	3.12

worth continued at about .70 for the four years and reflected a basic weakness in the balance sheets, particularly if the intercooperative investments could be removed from the assets.[7/]

Net income was positive in all years but was relatively low. The net income or a percentage of net worth was 5.96 percent in 1981. It dropped to 2.16 percent in 1982 and recovered to 7.13 percent in 1984. This shows earnings were below opportunity returns during the period. Activity as measured by sales to total assets remained at a fairly healthy level throughout the period.

Fourteen cooperatives supplied non-financial information. Of the 14 cooperatives in this group, nine had federated memberships, two had centralized and three had mixed memberships. Two of the three mixed cooperatives were primarily centralized. During the period in study, Goldkist converted from truly mixed to primarily centralized by purchasing locals and by executing management contracts with about 100 locals. In 1984, Goldkist still had 24 local cooperatives as members. Southern States reported 136 local cooperatives as members, including 114 that Southern States manages under terms of a management contract. Land-O-Lakes was primarily centralized in milk marketing and federated for farm supplies.

Three other federated cooperatives "took over" a few local cooperatives and initiated management contracts with a few locals. Two of the federated cooperatives said they took over the locals either because the locals were failing or because the regional needed to maintain a presence in the local market.

Only one of the group, Growmark, required contracts with either farmers or cooperative members. Additionally Goldkist required contracts for its poultry operation.

The number of marketing functions performed was limited, except where the cooperatives marketed poultry, milk or pork. In the federated cooperatives, the functions performed for fertilizer were limited to mixing and distributing to local cooperatives. The exception was Farmland, which also manufactured fertilizer.

Land-O-Lakes milk pooling and the Far-Mar-Co's voluntary pool were the only pooling efforts.

Some structural changes in addition to those mentioned earlier were as follows: Two of the groups acquired IOFs; four formed joint ventures with IOFs; three acquired other cooperatives; and five embarked upon joint ventures with other cooperatives.

Since 1984, significant structural changes occurred within the group of mixed cooperatives. FCX went out of business, with Southern States and Goldkist taking over FCX's territory and functions. Landmark and Ohio Farmers merged into Countrymark. Farmland sold its grain operation to Union Equity and Growmark spun its grain operation into a joint venture with ADM. Indiana Farm Bureau is now requiring contracts with members. Land-O-Lakes and Cenex undertook a massive joint venture on farm supplies. The federated regionals continue to acquire a few locals and to execute management contracts with others. These latter actions, however, usually solve local crises and are not a deliberate policy to change structure.

Effect Of Operating At Less Than Full Capacity

Those cooperatives with a single major product line were asked to indicate the percent of full capacity at which they operated in 1984. Table 13 indicates the impact of operating at less than capacity on earnings and on two ratios that measure strength of balance sheets. Net income as a percent

Table 13 Impact Of Operating At Less Than Full Plant Capacity In 1984 As Reported By 26 Cooperatives With A Single/Major Product Line

		Ratios		
Capacity Used	Responses	Net Income/ Assets	Fixed Assets/ Net Worth	Total Liabilities/ Assets
Less than 75 per cent	10	-.05	.97	.66
75 - 90 per cent	10	+.03	.81	.65
Greater than 90 per cent	6	+.10	.63	.54

of assets was minus .05 for the 10 cooperatives operating at less than 75 percent of capacity and increased to a positive value of .10 for those operating at above 90 percent capacity. The fixed assets to net worth ratio declined from .97 for the least-used capacity to .63 for the highest-used capacity. Likewise, total liabilities to total assets decreased from .66 to .54.

Comparative Performance of Centralized, Federated and Combination Centralized and Federated Cooperatives

The financial performance and financial strength of the centralized, federated and combination of cooperatives is shown in Tables 14, 15 and 16. Earnings as measured by the ratio of net income (net worth) were highest in all years for the centralized group.[8/] The combination cooperatives performed better in terms of income than federated cooperatives. The performance of the federated group was poor except in 1981.

The current ratio was satisfactory or better for all groups in all years, and there was no significant difference between the groups. The total liabilities to total asset ratio was essentially the same for the combination and federated cooperatives and were stronger by about 10 percent than the same ratio for the centralized cooperatives (See footnote 8). This is consistent with an earlier observation that despite poor earnings, balance sheets of the federated cooperatives remained strong, at least until 1984. The sales to total assets ratio was stronger in the centralized and combination cooperatives than for those that were federated.

Caution must be used in generalizing the above information because the type of membership is not independent of the industry. Most of the more profitable cooperatives were in dairying, cotton and rice, and most of the cooperatives in these lines were centralized. Both the grain marketing and

Table 14 Financial Information For Centralized Cooperatives Included In The Survey

Item	Average For 1981	1982	1983	1984
Number of Cooperatives	14	15	15	14
	---------------Thousand Dollars	---------------		
Total Assets	192,280	196,012	212,429	195,359
Total Liabilities	148,202	150,966	162,640	140.979
Net Worth	44,078	45,046	49,789	54,380
Total Sales	771,882	661,003	645,873	726,901
Net Income Before Taxes	8,594	6,347	7,531	7,133
Income Tax	2,797	1,683	752	1,160
Net Income from Internal Operations	5,797	4,664	6,779	5,973
Patronage Refunds Received	953	1,206	977	1,500
Total Net Income	6,750	5,870	7,751	7,473
	------------------Percents	------------------		
Current Ratio	1.40	1.36	1.37	1.47
Total Liabilities to Total Assets	.77	.77	.76	.72
Net Income/Net Worth	13.15	10.35	13.65	10.65
Sales to Total Assets	4.01	3.37	3.04	3.72

Table 15 Financial Information For The Federated Cooperatives Included In The Survey

Item	1981	1982	1983	1984
	Average For			
Number of Cooperatives	12	12	11	11
	Thousand Dollars			
Total Assets	503,089	468,599	424,055	395,540
Total Liabilities	332,733	311,203	268,963	361,158
Net Worth	170,356	157,396	155,092	34,382
Total Sales	1,537,972	1,403,421	1,158,260	1,314,702
Net Income Before Taxes	15,136	(12,151)	(5,526)	3,352
Income Tax				
Net Income from Internal Operations	15,136	(12,151)	(5,526)	3,352
Patronage Refunds Received	15,836	8,950	5,101	5,546
Total Net Income	30,972	(3,201)	(415)	8,998
	Percents			
Current Ratio	1.38	1.38	1.42	1.50
Total Liabilities to Total Assets	.66	.66	.63	.91
Net Income/Net Worth	8.88	(7.72)	(3.56)	9.75
Sales to Total Assets	3.05	2.99	2.73	3.32

Table 16 Financial Information For The Combination Centralized/Federated Cooperatives Included In The Survey

Item	Average For 1981	1982	1983	1984
Number of Cooperatives	12	12	12	12
	----------------Thousand Dollars----------------			
Total Assets	257,014	254,549	238,276	240,565
Total Liabilities	169,111	172,839	157,641	156,471
Net Worth	87,903	81,710	80,635	84,094
Total Sales	901,747	898,814	746,790	752,334
Net Income Before Taxes	4,186	977	4,263	8,122
Income Tax	341	744	823	1,183
Net Income from Internal Operations	3,845	233	3,440	6.929
Patronage Refunds Received	6,153	4,082	2,057	2,462
Total Net Income	9,998	4,315	5,497	9,391
	--------------------Percents--------------------			
Current Ratio	1.34	1.28	1.32	1.33
Total Liabilities to Total Assets	.66	.68	.66	.65
Net Income/Net Worth	4.37	0.29	4.26	8.23
Sales to Total Assets	3.51	3.53	3.13	3.13

fertilizer industries are currently in trouble and most of the cooperatives dealing in these lines are federated. The number of cooperatives in the study was insufficient to compare the three organizational options within a given industry.

Performance and Financial Strength Related to the Number of Marketing Functions Performed

Cooperatives that provided marketing services were asked to indicate which of the following marketing functions they performed: (1) assembly (2) storage (3) selling agent (4) processing (5) distribution (6) production of consumer goods and (7) exporting directly. None of the mixed cooperatives were able to respond because the functions varied by product line. Of the total, 33 responded in a means that could be quantified.

The 33 were sorted into groups that performed one to three functions, four to five functions and six or more functions. The greater the number of functions performed, the more completely was the cooperative integrated toward the end consumer. The results in financial terms are presented in Tables 17, 18 and 19. In terms of earnings, there was a clear, positive correlation between the earnings and number of marketing functions performed as measured by the net income net worth ratio. There was not a significant difference, however, in current ratio, total liabilities to total assets and sales to total assets. It is interesting that the in-between group -- the one performing four to five functions -- was much larger than those performing one to three functions and considerably larger than the group performing six or more functions.

Again, caution is urged in generalizing these results because the analysis is not independent of the industry. For example several large grain

Table 17 Financial Information For The Reporting Cooperatives Providing 1-3 Marketing Functions

Item	Average For 1981	1982	1983	1984
Number of Cooperatives	14	15	15	14
	---------------Thousand Dollars---------------			
Total Assets	133,512	138,187	142,251	121,250
Total Liabilities	97,385	102,580	104,307	82.289
Net Worth	36,127	35,607	37,944	38,961
Total Sales	438,827	391,356	342,637	424,479
Net Income Before Taxes	508	(190)	103	1,692
Income Tax	797	850	471	569
Net Income from Internal Operations	(189)	(1,040)	(268)	1,123
Patronage Refunds Received	1,596	1,596	862	1,175
Total Net Income	1,407	556	594	2,298
	------------------Percents------------------			
Current Ratio	1.32	1.24	1.25	1.38
Total Liabilities to Total Assets	.73	.74	.73	.68
Net Income/Net Worth	(.52)	(2.92)	(.71)	2.88
Sales to Total Assets	3.28	2.83	2.41	3.50

Table 18 Financial Information For The Reporting Cooperatives Performing 4-5 Marketing Functions

Item	Average For 1981	1982	1983	1984
Number of Cooperatives	12	13	13	12
	---Thousand Dollars---			
Total Assets	424,106	368,465	339,989	338,025
Total Liabilities	306,845	262,328	233,632	221.165
Net Worth	117,261	106,137	106,357	116,860
Total Sales	1,605,211	1,394,741	1,107,719	1,338,383
Net Income Before Taxes	6,102	(5,428)	(6,629)	2,190
Income Tax	(316)	618	1,024	1,288
Net Income from Internal Operations	5,786	(6,046)	(7,553)	902
Patronage Refunds Received	11,199	7,367	3,659	3,501
Total Net Income	16,985	1,321	(3,894)	4,403
	---Percents---			
Current Ratio	1.22	1.30	1.32	1.35
Total Liabilities to Total Assets	.72	.71	.69	.65
Net Income/Net Worth	4.93	(5.79)	(7.10)	.77
Sales to Total Assets	3.78	3.78	3.26	3.96

Table 19 Financial Information For The Reporting Cooperatives Providing Six or More Marketing Functions

Item	Average For 1981	1982	1983	1984
Number of Cooperatives	12	12	12	12
	---Thousand Dollars---			
Total Assets	235,436	251,517	271,253	250,446
Total Liabilities	175,466	186,843	200,597	177.136
Net Worth	59,970	64,674	70,656	73,310
Total Sales	1,066,542	975,924	967,489	991,299
Net Income Before Taxes	11,651	9,286	9,608	8,819
Income Tax	2,910	1,754	341	304
Net Income from Internal Operations	8,741	7,532	9,268	8,515
Patronage Refunds Received	1,695	1,461	1,162	1,690
Total Net Income	10,436	8,993	10,430	10,205
	---Percents---			
Current Ratio	1.41	1.41	1.41	1.47
Total Liabilities to Total Assets	.75	.74	.74	.71
Net Income/Net Worth	14.57	11.65	14.76	13.92
Sales to Total Assets	4.53	3.88	3.57	3.96

marketing cooperatives are in the group performing four to five functions and the entire grain group performed poorly largely because of the state of the industry.

Observations On The Study And Questions It Raises

The period included in the study was one of generally hard times for cooperatives. The same was true for most IOF agribusiness firms. Because of lack of comparability of a number of ratios between coops and IOFs, it is not possible to determine how the cooperatives fared compared to the IOFs. It seems clear that a significant cooperative sector will survive the current farm recession. There is no evidence in the study that would lead to the conclusion that the cooperative sector's share of the total market is declining. Indeed, for cotton and rice, the share seems to be increasing.

Earnings of the cooperatives are generally low. This is certainly related in part to large excess capacity in many cooperatives. Predictors from the public and private sectors agree that an increase in the total size of the agribusiness market is not likely to occur in the near future. The market is mature. While the study did not specifically address this issue, there is no evidence in annual reports and newsletters that the cooperatives as a body can increase their market share. Thus, their viable alternative becomes producing the desired earnings with existing volume. Comments written on some of the questionnaires indicated that management is counting on increased size markets in the future to solve their problems. Such a strategy is not likely to be successful for most cooperatives.

The cooperatives made significant structural changes since 1981, and the changes led to a more rational structure. The major IOF competitors also restructured but in a more dramatic way. Business journals cite numerous cases in which a major agribusiness firm acquired some firm or sold a subsidiary, dropped one line of activity or added another or moved out of one location or into another. The financial statements of the publically held IOFs show that the moves have strengthened performance.

The nature of a cooperative means that some of the options used by an IOF are not available to cooperatives. Cooperatives cannot change product lines or location simply to improve earnings. There is a serious question, however, whether cooperatives have gone as far and as fast as they can. The bottom-up control of the federated cooperatives brings to the forefront the possible conflict between the welfare of a local community and the welfare of the cooperative and its members. Often, concern for the local community has priority. The issues of bigness, member control and tradition emerge whenever there is talk of merger or acquisition. Researchers need to study how much restructuring cooperatives can do and how fast they must do it.

Granted, if cooperatives cannot keep pace with their IOF competitors in restructuring, are there some unique features that cooperatives can exploit? Customer loyalty and fewer advertising costs should be advantages. But are these in fact advantages? Are there others? How can cooperatives take advantage of them?

The information in the questionnaires revealed that joint ventures with IOFs and cooperative-controlled, profit-making subsidiaries are two restructuring options cooperatives are using. These moves raise a whole series of questions for cooperatives. The most fundamental question is, "To what extent are joint ventures designed to circumvent the fundamentals of cooperatives and their legal status under Capper-Volstead?"

The term "rationalize" increasingly appears in discussions of market channels. Rationalize means to have sufficient control, by some means, of the channel so that it is technically and economically efficient, passes signals quickly and accurately and, most importantly, maintains the desired margins. Cooperatives traditionally object to this philosophy, with the best evidence being their distaste for member contracts. In most regional and interregional federated cooperatives, each member is free to use or not use the cooperatives goods or services. At times, the member even makes the higher organizational unit the residual supply source or market. In many federations, locals insist that the regionals offer a technically inefficient delivery system. Rational channels will be a competitive tool of the IOFs. This study reveals that there is some movement toward more rational channels, but the rate of change is slow. The question is, "Can cooperatives survive and serve members as well as possible without rationalizing channels at about the same pace as their competitors?"

An issue related to channel rationalization is the number of marketing functions performed, which is a measure of vertical integration. This study confirms other studies and observations that show earnings increase as the channel becomes more vertically integrated. This is logical, because both margins and the opportunity for market power are lowest at the assembly stage in marketing and at the retail stage in farm supplies, while they are generally higher at intermediate stages. The fertilizer cooperatives are basic, which accounted for excellent earnings and downward pressure on consumer prices for two decades. The good performance continued until excess capacity and off-shore production caught up with them.

A number of marketing cooperatives have succeeded in differentiating their products and instituting successful branding. Some have gained strong consumer franchises. Where this has happened, cooperative members have benefitted greatly. Comments provided by respondents in the survey indicated that a significant number of members view product differentiation as a future strategy. While the strategy cannot be ruled out, the obstacles must be studied seriously. Major obstacles include differentiating products and securing and committing funds for new product development and promotion in consumer markets.

The questionnaire asked respondents to list the amount of money spent on research and development. Most left the item blank. It is impossible to tell whether it was overlooked or if the amount was zero. Sixteen respondents did respond positively, but the amount was dismally low. Comments indicated that most of the cooperatives planned no major change in research spending. The few cooperatives that were that were planning an increase indicated that the increase would be used for developing consumer products. This situation poses a question of the future role of cooperatives in an economy where proprietary products developed with large Research and Development expenditures will increasingly prevail

A look at the seed industry may provide insight. Seed breeding and the initial stages of multiplication have moved from the public to private sector because Science made product differentiation possible. Subsequently, the seed companies, which had been relatively small business firms, were purchased by conglomerates with deep pockets and strong research interests and capacity. During this transition, according to ACS statistics, the cooperatives share of the seed market declined significantly and is the only major farm input in which cooperatives lost substantial market share.

So-called biotechnology opens the door for frequent replication of the seed example. Assuming cooperatives cannot or will not make the investment in biotechnology to develop proprietary products, what is their future role? It seems that the alternatives may be serving as a captive retailer of an IOF manufacturer or aggressively seeking and bargaining for exclusive distribution rights in some given area. The latter course would exploit the traditional cooperative strengths of good contact with and good delivery to farmers.

The small number of respondents and failures to report on some questions made it impossible to address each objective in a strictly analytical manner. The overall issue in any structure study, however, is the relative competitive position of the participants. This leads to a bottom line conclusion: If cooperatives are to give farmers benefits, they must be able to compete effectively with the IOFs in matters such as rationalizing channels, disposing excess capacity, minimizing inherent weaknesses and maximizing unique strengths. Lack of some basic opportunity for restructuring must be offset by vigorous exploitation of the cooperatives' advantages.

Footnotes

1/ Regional cooperatives operate in more than one state. The names of the cooperatives included were supplied by the ACS.

2/ For purposes of this study, the major activity had to account for 60 or more percent of total sales.

3/ The four ratios used throughout were calculated as follows: Current ratio is current assets divided by current liabilities. Total liabilities to total assets is total liabilities divided by total assets. Net income to net worth is net income from internal operations divided by net worth. Sales to total assets is total sales divided by total assets.

4/ Land-O-Lakes is a centralized/federated cooperative, but because of its several product lines it is included in the "mixed" group.

5/ AGP became a separate operating entity in 1983.

6/ The list does not include the marketing agent in common for the operating cooperatives (ANC) but does includes the denim manufacturing cooperative in Lubbock, Texas (American Cotton Growers).

7/ The rationale for removing such from assets is that the receiving (reporting) cooperative has no options on amount or current evaluation.

8/ The ratio showed high earnings for the federated group in 1984, but this is due solely to the sharp drop in net worth due to large losses in 1982 and 83.