

A black and white photograph of a tall, cylindrical grain elevator in a rural landscape. The elevator is the central focus, with a smaller structure to its left. The background shows rolling hills and trees under a bright sky. The image is slightly faded and has a grainy texture.

# Factors Influencing the Flow of Grain from Local to Regional Grain Marketing Cooperatives in the Midwest

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C. Brice Ratchford and Donald Street\*

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## Introduction

Cooperatives are important organizations in the marketing of farmers' grain. Local cooperatives handle about 40 percent of farm sales.<sup>1</sup> Grain exports are important to farmers as about one-third of the corn and milo, 40 percent of the soybeans and 60 percent of the wheat are exported. While cooperatives are major markets at the farm level, they are directly responsible for only 7 to 8 percent of U.S. exports.<sup>2</sup>

Farmer owners of cooperatives continue to urge their cooperatives to play a larger role in exporting, and cooperatives have responded in several ways. Some regional cooperatives have stepped up their own export programs and some have formed an interregional cooperative named the Farmers Export Cooperative (FEC) which has the sole purpose of exporting farmers' grain. Some FEC owners and other regional cooperatives purchased half interest in the Alfred C. Toepfer Company of Hamburg, West Germany. Toepfer is a world-wide trading firm. The purchase of Toepfer represents a completely different strategy for increasing cooperative exports.

The Farmers Export Cooperative has faced serious problems recently and has been partially dismantled. The outcome of the other efforts remains in question.

It was this setting that prompted the University of Missouri to undertake research to identify barriers to cooperatives increasing exports. A basic concern is the relationship of the many firms in the cooperative sector. This particular study analyzes the relation of local cooperatives to the regionals. The specific objectives were:

- (1) To identify the marketing patterns of local cooperatives;
- (2) To determine the importance of several factors in the decisions of local cooperatives on moving grain to the regionals;
- (3) To determine the attitude of local cooperative managers to additional coordination within the cooperative channel.

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<sup>1</sup>U.S. Department of Agriculture, Farmer Cooperative Service, *Improving The Export Capability of Grain Cooperatives*, by Stanley K. Thurston, Michael J. Phillips, James E. Haskell, and David Volkin, Research Report 34 (Washington, D.C.: Government Printing Office, 1976).

<sup>2</sup>Ibid.

\*C. Brice Ratchford is Professor of Agricultural Economics. Donald Street was formerly a graduate assistant in Agricultural Economics and is currently a staff economist with the Agricultural Cooperative Service, USDA.

Data were secured through a questionnaire mailed to 2,300 local cooperatives affiliated with Missouri Farmers Association (MFA) and Farmland Industries, Inc. The locals were in 21 states. It was known that many of the locals handled only farm supplies and that many were affiliated with more than one regional. Those that did market farmers' grain were asked to respond. A total of 807 surveys were returned with 345 indicating that they were not involved in grain marketing. Also 60 of the questionnaires from locals marketing grain were unusable because they were incomplete or incorrectly answered.

The usable surveys of cooperatives involved in grain marketing totaled 402 and represent the data base for the study. The data-base cooperatives were located in 17 states and listed affiliation with 19 regional supply and marketing cooperatives.

Marketing personnel of five regionals were interviewed to gain their perspective of the cooperative marketing system. These were MFA, Farmland, Growmark, Agri-Industries and Riceland; and all except Riceland had affiliates in the sample. Also management personnel were interviewed at Kansas City Terminal Elevator, Inc., St. Louis Grain Company and Farmers Export Corporation, all interregionals, to secure their views.

### Structure of the Cooperative Sector<sup>3</sup>

The cooperative grain marketing sector is organized into three tiers. The Farmer Cooperative Service identifies 14 primary grain marketing regionals in the U.S. Riceland Foods is a fully centralized cooperative, 5 are a combination of centralized and federated and 8 are completely federated. Owners of the 13 fully or partially federated regionals are 2,348 local cooperatives. Some locals are affiliated with more than one regional and are counted more than once.

There are four interregionals whose members are regionals. Three of the interregionals serve as terminal elevators for the regionals. The Farmers Export Corporation is owned by 12 regionals and functions solely as an export agency for the regionals.

Affiliation of a local with a regional is secured primarily by doing business with the regional. Locals have no commitment to stay with a regional over time or to supply a specified quantity. The regionals that own the FEC have made a significant capital investment in the interregional and have made a "best effort" commitment to deliver a relatively small quantity of grain to the corporation.

Competition within the cooperative sector is just as vigorous as between the cooperative and proprietary sector. In the heavy grain producing areas most local cooperatives compete with each other on procurement and marketing. The partially centralized regionals compete with the locals on both procurement and marketing. All regionals compete with the locals on marketing. The regionals compete with each other on procurement and marketing. Most of the regionals also compete with the FEC on exports.

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<sup>3</sup>The data on numbers are from: U.S. Department of Agriculture, Farmer Cooperative Service, *Regional Grain Cooperatives, 1976 and 1977* by Stanley K. Thurston, Research Report 6.

## Procurement and Marketing Patterns of Local Cooperatives

The procurement and marketing patterns of the 402 local cooperatives are shown in Table 1. The design of the table suggests that grain is purchased from and sold to storage. This obviously does not represent a financial transaction. In an accounting sense storage is a source and use of grain at the beginning and end of the marketing period and this is the meaning of its classification.

Essentially all grain is procured from farmers. The practice of independent truckers transporting grain from one elevator to another plays a minor role in the procurement pattern of local cooperatives. Other evidence of the insignificance of trucker-traders is the small number of elevators that do business with private traders: only 33 buy corn, 9 buy milo, 7 buy wheat and 5 buy soybeans from non-farm sources. The locals are marketers of farmers' grain.

There is wide variation in the percent of grain sold to regional cooperatives for each commodity. For corn and milo there are three markets—the regional cooperatives, private firms and farmers. For wheat and soybeans there are two markets—the regionals and the private firms. The regionals get the highest percent of wheat (72.80) and the lowest of milo (28.17). The private firms are the largest market for corn and milo.

## Factors Influencing Marketing Decisions

*Solicitation of Bids.* Local cooperative managers were asked, "Do you regularly solicit bids from other than your regional affiliate?" Most firms do solicit bids from non-cooperative sources as 308 responded yes, 89 no and 5 did not respond.

Soliciting bids from non-cooperative sources does influence the amount of grain going to the regional cooperative, as shown in Table 2. Group one, which solicited bids from cooperative and non-cooperative sources, sold considerably less of all commodities to the regionals than group two which did not solicit bids from non-cooperative sources. The difference varied from 10 percent for wheat to 19 percent for soybeans. Clearly, when a local manager shops around he often finds what he considers a better deal.

**Factors Local Managers Consider When Selling.** Local managers were asked to respond to the following question: Excluding sales to farmers, how do you weigh the following factors when considering prospective grain buyers? The answers were expressed as the percent the manager gave to the eight factors shown in Table 3. Only three of the factors proved to be important.

Price is by far the most important factor, being given a percentage value of 52.99. It is of some surprise that the value was not higher. Discussions with personnel of regional cooperatives indicated that price was the only factor of importance. One grain merchandiser states that "a good grain trader would sell his mother for a half a cent per bushel."

The affiliation with the regional was the second most important factor with a percentage of 18.45. There is some sense of loyalty within the cooperative channel.

Availability of transportation was also an important factor, having a weight of 14.56%. At the time the survey was being completed, there was a shortage of

TABLE 1  
Aggregate Procurement and Marketing Patterns of 402 Local Cooperatives, 1978-79

	COMMODITY							
	Corn		Milo		Wheat		Soybeans	
	Bushels <sup>a</sup>	Percent	CWT <sup>a</sup>	Percent	Bushels <sup>a</sup>	Percent	Bushels <sup>a</sup>	Percent
Purchased from:								
Farmers	352,128	96.61	103,642	90.79	156,365	92.80	102,167	97.28
Private Trade	2,397	0.66	1,904	1.67	14	0.01	447	0.43
Storage	9,962	2.73	8,612	7.54	12,110	7.19	2,392	2.28
Total Purchases	364,487		114,158		168,489		105,005	
Sold to:								
Regional Cooperatives	129,712	35.75	32,389	28.17	121,325	72.80	62,996	60.89
Private Grain Firms <sup>b</sup>	166,361	45.84	47,495	41.30	31,877	19.13	36,013	34.86
Farmers	48,421	13.34	23,888	20.77	757	0.45	245	0.24
Storage	18,385	5.06	11,219	9.76	12,696	7.62	4,052	3.92
Total Sales	362,879		114,991		166,655		103,306	

<sup>a</sup>In thousands.

<sup>b</sup>Includes independent truckers.

TABLE 2  
 Comparison of Marketing Patterns of Local Cooperatives  
 Based on Practice of Solicitation of Bids, 1978-79

	Percent of total sales for each commodity by groups <sup>a</sup>							
	Group One				Group Two			
	Corn	Milo	Wheat	Soybeans	Corn	Milo	Wheat	Soybeans
Purchased by:								
Regional Cooperatives	34.7	23.5	69.5	57.5	46.1	41.5	79.1	86.5
Private Firms	48.0	49.3	22.4	38.5	25.7	14.8	12.6	7.7
Farmers	12.0	16.5	0.6	0.2	24.8	36.3	0.26	0.4
Storage	5.5	10.7	7.6	3.79	3.4	7.3	8.1	5.4

<sup>a</sup>Surveys were sorted by responses to survey question 9

Group 1 represent "yes" responses (N = 308) and group 2 "no" responses (N = 89).

TABLE 3  
The Percentage Weight Given to Factors Influencing Sale  
of Grain by Local Cooperatives, 1978-79

Factor	Average Percent
Price	52.99
Convenience	4.02
Availability of Transportation	14.56
Communication	2.81
Tradition	1.71
Contractual Agreement	1.40
Affiliation with Regional	18.45
Financing	3.84
Other	0.22
Total	100.00

hopper cars and the regional cooperatives and their proprietary competitors were buying and leasing cars. Also there was concern and uncertainty arising from rail abandonment and bankruptcy.

*Role of Price.* To delineate more clearly the role of price, the marketing patterns of the local cooperatives were evaluated as the importance of price increased to the manager. The data set was sorted into four groups based upon the weight assigned to price by the manager. Group one included those locals where the manager assigned 25% or less weight to price, group two included the 26 to 50% group, group three included the 51 to 75% group and group four included the cooperatives where price was greater than 75% of the weight. The number in each group was: group one - 87 locals, group two - 74 locals, group three - 107 locals and group four - 134 locals.

The results of the analysis are presented in Table 4. As the importance of price increases in the manager's mind, the amount of all commodities going to private firms tends to increase and the amount going to the regional cooperatives tends to decrease. The trend is consistent except for group two which departs from the trend line in corn, milo and wheat. The departure cannot be explained by the data. Price-conscious local managers pick and choose among offered prices. Their actions suggest that the proprietary firms frequently offer the higher bid price. The actions also indicate that the possible patronage refund from the regional is largely ignored in day-to-day marketing decisions.

*Size of Local Cooperative.* One hypothesis tested was that there would be a noticeable difference in marketing patterns of small and large cooperatives. Storage capacity was used to sort the cooperatives into three size groups. Group one with 232 elevators had less than one million bushels storage capacity, group two with 117 local cooperatives had from one to two million bushels, and group

TABLE 4

Comparison of Marketing Patterns of Local Cooperatives Based on  
the Importance of Price in Determining Grain Buyers, 1978-79

	Percent of total sales for each commodity by groups <sup>a</sup>															
	One				Two				Three				Four			
	C	M	W	S	C	M	W	S	C	M	W	S	C	M	W	S
Regional Cooperatives	45.9	29.5	84.1	73.6	55.8	42.2	65.0	70.0	35.4	28.6	69.2	58.9	23.1	24.2	65.5	52.4
Private Firms	36.1	33.8	7.5	22.6	25.4	25.1	28.0	24.1	41.7	16.6	21.2	38.3	60.9	63.2	27.8	43.5
Farmers	13.9	27.3	0.1	0.3	10.5	20.0	0.1	—	17.8	35.3	0.3	0.6	11.7	9.4	1.3	0.1
Storage	4.2	9.4	8.3	3.6	7.3	12.7	6.9	5.8	5.1	19.5	9.3	2.2	4.3	3.1	5.4	4.1

<sup>a</sup>Groups based on response for variable "price," question 8 in the Appendix.

Group 1 response  $\leq$  25 percent

Group 2 response  $>$  25 percent and  $<$  50 percent

Group 3 response  $>$  50 percent and  $\leq$  75 percent

Group 4 response  $>$  75 percent

C - Corn

M - Milo

W - Wheat

S - Soybeans



three with 53 locals had over two million bushels of storage. The results of the comparison are shown in Table 5.

The most significant difference is in the proportion of grain going to farmers. The small cooperatives as measured by storage capacity sell a much higher percent of their corn and milo to farmers than the larger cooperatives. The larger cooperatives tend to have more grain in storage, which is not surprising since the measure of size was the amount of storage. The distribution between regional cooperatives and proprietary firms was essentially the same for the three size groups.

*Regional Affiliations.* Local cooperatives in the sample were associated with one or more of eight primary grain-marketing regionals. The regionals most involved were Agri-Industries, Farmland, Far-Mar-Co, Growmark, MFA and Union Equity. The data set was divided into two groups—those that were affiliated with a single regional and those affiliated with more than one regional. The results of the comparison are given in Table 6.

Apparently affiliation with more than one regional increases retention of grain in the cooperative channel. The rate is higher by 4% for corn, 14% for wheat, 16% for milo and 29% for soybeans.

### Attitude of Managers of Local Cooperatives Toward Channel Coordination

It was indicated previously that there is essentially no channel coordination in the cooperative sector. Pooling and contractual arrangements are tools for exercising some control over procurement and marketing.

Local managers were asked to classify their attitudes toward pooling in one of the three categories of high, some or no interest. The following results for the aggregate data set were observed.

Response	Frequency	Percent	Cumulative Percent
High	104	26.6	26.6
Some	212	54.2	80.8
None	75	19.2	100.0

Eighty-one percent of the local managers expressed at least some interest in the pooling program. Far-Mar-Co has operated a seasonal wheat pool in Colorado, Kansas and Nebraska since 1975 under the label Promack. Managers' responses in Kansas and Nebraska were compared with the entire data set.<sup>4</sup> Managers' attitudes in Kansas were significantly more favorable than that of all managers.<sup>5</sup>

<sup>4</sup>The number of observations in Colorado was too small for a valid statistical analysis.

<sup>5</sup>The tabulated Chi square for the set was 5.99 at the 5% level, while the value for the 66 Kansas managers was 54.24. The response for 44 Nebraska managers showed a Chi square at the 5% confidence level of 2.66 which was not significant. While not statistically significant, the responses from Nebraska managers indicate a higher percent of favorable responses than the aggregate data set.

TABLE 5  
Comparison of Local Cooperative Marketing  
Patterns by Size, 1978-79

	Percent of total sales for each commodity by group <sup>a</sup>											
	One				Two				Three			
	C	M	W	S	C	M	W	S	C	M	W	S
Purchased by:												
Regional Cooperatives	39.9	26.0	71.1	65.5	33.9	33.3	72.3	59.4	35.2	25.3	75.4	59.0
Private Firms	38.2	37.1	24.8	31.3	47.6	29.6	17.7	37.0	48.6	62.3	12.2	35.4
Farmers	18.9	22.9	0.3	0.2	13.6	31.8	1.0	0.3	9.7	5.7	0.2	0.1
Storage	3.0	15.1	3.9	3.1	4.9	5.4	8.6	3.3	6.5	6.7	12.2	5.5

Groups based on total storage capacity.

Group 1 response  $\leq$  1 million bushels (N = 232)

Group 2 response  $>$  1 million and  $\leq$  2 million bushels (N = 117)

Group 3 response  $>$  2 million bushels (N = 53)

C - Corn

M - Milo

W - Wheat

S - Soybeans

TABLE 6  
Comparison of Local Cooperative Marketing Patterns  
by Regional Affiliation, 1978-79

	Percent of total sales for each commodity by group <sup>a</sup>							
	Group One				Group Two			
	C	M	W	S	C	M	W	S
Purchased by:								
Regional Cooperatives	34.5	23.3	66.9	49.4	38.5	39.9	80.7	78.3
Private Firms	50.9	45.3	24.6	46.6	35.1	32.0	11.7	17.3
Farmers	10.3	19.6	0.7	0.4	19.9	23.7	0.2	—
Storage	4.4	12.0	7.8	3.6	6.6	4.6	7.4	4.4

<sup>a</sup>A local cooperative must be affiliated with a regional to conduct business with it.

Group 1 - single affiliation (N = 256)

Group 2 - multiaffiliation (N = 145)

C - Corn

M - Milo

W - Wheat

S - Soybeans

Local managers were also asked to classify their interest in using contractual agreements to establish minimum commitments of grain for locals to move to regionals as high, some or none. The aggregate results are presented below.

Response	Frequency	Percent	Cumulative Percent
High	87	22.3	22.3
Some	208	53.3	75.6
None	95	24.4	100.0

Seventy-six percent of the managers expressed some interest in a contractual agreement, slightly less than the percentage showing at least some interest in pooling. Comments written on questionnaires indicate that such agreements would have to include benefits for the local cooperative. Some managers who indicated no interest stated that if the price of the regional was competitive such agreements would not be needed.

The main significance of the statistical summary of the responses to the two questions and comments added by the local managers is that a large majority recognize that the lack of coordination and commitment within the cooperative segment are factors that need further consideration.

### Conclusions

The practices followed and physical location indicated that the primary function of grain-marketing cooperatives is to move grain from farms into the national and international market channels. They tend to be first and second-level handlers in a long market channel. Handlers of any commodity usually have little market power (the ability to influence price). This is certainly the situation for the grain-marketing cooperatives.

The three tiers of cooperatives are owned by farmers but there is essentially no channel organization or control. The data indicate that each unit in the cooperative sector is operating as a shortrun earnings maximizing center. It is not an organized system. Also at all tiers the cooperatives are considered as just an alternative market outlet by the owners.

One assumption of those pushing grain-marketing cooperatives to be more active in exporting was that the known ability of the local cooperatives to procure farmers' grain was a strong asset in the competitive struggle for international markets. The operating practices of the locals show that the assumption is invalid because strong local procurement is not translated into a strong position at the levels where exporting takes place.

### Summary

The data for the study was supplied by 402 local cooperatives in 17 states that market farmers' grain. The locals had affiliation with 19 regional supply and marketing cooperatives.

The local cooperatives buy grain almost exclusively from farmers. The data show that 1% or less comes from non-farmer sources.

Locals have three markets for corn and milo—regional cooperatives, farmers and private grain firms. Private firms are the largest market. Regional cooperatives and private firms are the market for wheat and soybeans, with the regionals being the largest.

About 75% of the local cooperatives solicit bids from private firms and the regional cooperatives. Solicitation of such bids results in less grain going to the regional cooperative.

The quoted price is by far the most important factor influencing to whom the locals sold grain. Price was given a percentage weight of 53 with all other factors totaling 47%. The data also revealed that as the importance of bid price increased to the manager the amount of grain going to the regional cooperative decreased. This suggests that private firms frequently bid higher prices. It shows also that patronage refunds from regionals are either ignored or highly discounted.

Affiliation with one or more regionals was a significant factor in the locals decisions on their market as an 18.5% weight was assigned to the affiliation. The availability of transportation received a weight of 14.6%.

One hypothesis that was tested was that larger cooperatives, as measured by storage capacity, would likely have better management and would have a different marketing pattern than the smaller cooperatives. Data did not substantiate the hypothesis. It is quite possible that the measure of size that was used was not a good one.

Approximately 40% of the locals were affiliated with more than one regional. Those locals with multiple affiliations sent significantly larger quantities to the regionals than those with a single affiliation.

The attitude of local managers to greater channel coordination was secured through questions on the desirability of pooling and contractual arrangements within the cooperative sector. At least some interest was expressed in pooling by 81% of the managers and interest in contractual arrangements was expressed by 76%.

The major conclusion was that there is essentially no coordination in a three-tiered system owned by farmers and operated for their benefit. Each of the units is pursuing maximizing earnings in the shortrun.

### Acknowledgements

The assistance of MFA and Farmland Industries and their affiliated local cooperatives made this study possible. The regionals provided the names of affiliated locals and encouraged managers to participate. The data used in the study was supplied on a mail questionnaire by 402 local grain-marketing cooperatives.