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PRICING SYSTEMS OF TRAINLOADING COUNTRY ELEVATOR COOPERATIVES: A SUMMARY

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Preface

This report summarizes the more comprehensive examination of differential pricing issues and how they are used by selected trainloading country elevators published in Pricing Systems of Trainloading Country Elevators. Copies of this report (Agr. Econ. Rpt. No. 214) can be obtained from the Department of Agricultural Economics, NDSU, Fargo, ND, 58105 or the Agricultural Cooperative Service, U.S. Department of Agriculture, Washington, D.C., 20250. Authors of the comprehensive report are David W. Cobia, William W. Wilson, Steven P. Gunn, and Randal C. Coon. The research was funded by a research agreement between the North Dakota Agricultural Experiment Station and the ACS, USDA.

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Highlights

Unit-train rates for grain and rate deregulation have resulted in a dramatic restructuring of the elevator industry. Excess trainloading capacity was created as many elevators expanded trackage, throughput, and/or storage to capture favorable unit-train rates. This excess capacity led to mergers, liquidations, and creative pricing policies including differential pricing, the practice of charging different prices or margins to different patrons. Differential pricing is feasible as long as patronage can be kept separate and can be based on costs (marginal cost pricing) or differences in demand.

As elevators compete more vigorously for the patronage of some patrons (i.e., large-volume or fringe-area) differences in demand arise. Elevators have strong incentives to attract additional volume because substantial economies of size exist. Once a facility is constructed, total average costs are almost entirely a funtion of volume because even costs normally classified as variable react like fixed costs to changes in volume. Increasing output from 20 to 50 trains per year reduced average fixed costs and average variable costs by 60% and 57%, respectively.

Fifty trainloading cooperative elevators were surveyed to determine their pricing policies. Only 20% of the cooperatives used differential pricing between patrons of different volumes, 54% did to top off a unit train, and 56% used this practice between producers and elevators. Differential pricing policies were used by more elevators for single-car versus unit-train receiving stations and between off-rail and unit-train receiving stations, with 82% and 95%, respectively, employing this practice. In markets where two or more elevators are competing, farmer patrons can receive higher net prices for their grain if the cooperative uses differential pricing to increase volume. However, if differential prices are not used, remaining patrons will receive lower net prices and the cooperative may be forced to merge or liquidate because of lower throughput.

PRICING SYSTEMS OF TRAINLOADING COUNTRY ELEVATOR COOPERATIVES: A SUMMARY

David W. Cobia and Randal C. Coon*

Excess capacity among trainloading country elevators has created interest in the variety of pricing practices by trainloading country elevator cooperatives. This report is a summary of a study[1] initiated to relate relevant theoretical considerations to pricing policies in the economic environment in which they compete, to identify pricing policies employed, and to estimate their impact.

Historical Framework

Country elevators in the Upper Midwest were originally built along railroads about 7 to 14 miles apart to accommodate the distance a horse-drawn grain wagon could travel in a day. Country elevator numbers apparently peaked in the early 1920s. The advent of trucks and improved roads expanded the distance a producer could travel, significantly reduced delivery cost per bushel mile, and correspondingly increased the market area of grain elevators. Market areas of previously geographically isolated elevators now overlapped each other and created new competitive pressures. Relatively small differences in bid prices at distant elevators were sufficient incentives for farmers to bypass local country elevators. Expanded on-farm and off-farm storage built under incentives from government programs added to excess capacity as benefits from these programs fluctuated.

Unit train rates for grain, initiated in 1967, and later rate deregulation prompted a dramatic restructuring of the elevator industry. By shipping 25, 50, 75, or 100 cars from one origin to one destination, railroads realized substantial cost economies which were reflected in the rail rate structure (Table 1). These savings were passed, in part, to shippers in the form of higher prices as elevators tried to increase their volume. Many elevators rapidly expanded trackage, throughput, and often storage to capture these economies (Table 2). In several areas unit trainloading capacity far outstripped demand for such services. During this same time railroads were abandoning many of their branch lines, leaving elevators on them without rail service. Exploding export demand for grain and oilseeds during the 1970s mitigated the adjustment process. Then, with the deterioration of export demand, the country elevator industry was left with acute excess capacity. The problem appears to be acute in Iowa where an estimated 5.8 bushels of throughput capacity exists for every bushel of major grains shipped out of the state (Table 3).

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[1]The complete report, "Pricing Systems of Trainloading Country Elevators," Agr. Econ. Report No. 214, can be obtained from the Dept. of Agr. Econ., NDSU, Fargo, ND, 58105 and Agricultural Cooperative Service, U.S. Dept. of Agriculture, Washington, DC, 20250.

TABLE 1. COST SAVINGS OF 26- AND 52-CAR UNIT-TRAIN RATES OVER SINGLE-CAR RATES FROM MINOT, NORTH DAKOTA, TO THE PACIFIC NORTHWEST, JANUARY 1982

Origination	26-Car	52-Car
	(- - - ¢/cwt - - -)	
Single	26	49
Multiple	19	--

TABLE 2. NUMBER OF ELEVATORS WITH MULTI-CAR LOADING FACILITIES BY LOADOUT CAPACITY FOR SELECTED STATES, 1984

State	Loading Capacity (Cars/Day)			
	24-27	50-54	>75	Total
Iowa	94	52	46	192
Minnesota	52	19	21	92
Nebraska	71	73	23	167
North Dakota	67	26	0	93
Total	284	170	90	544

Excess capacity is not nearly as severe in North Dakota (2.3), in part because unit-train rates were introduced at a later date (1980). It is also more difficult to assemble unit trains in North Dakota because production density is only 1/5 that of Iowa (Table 3) and North Dakota is faced with a variety of crops that require quality segregation in the marketing system.

Large trainloading facilities, thirsty for volume to cover fixed costs, have engaged in vigorous price competition. These radical changes have led to mergers and liquidations--a general restructuring of the industry that is still in progress. Continued depressed demand with accompanying excess capacity has created an environment with incentives for differential pricing.

TABLE 3. PRODUCTION DENSITY AND RATIO OF TRAINLOADING CAPACITY TO INTERSTATE GRAIN SHIPMENTS OF THREE MAJOR GRAINS[1] FOR IOWA, NEBRASKA, AND NORTH DAKOTA, 1985

Item	Iowa	Nebraska	North Dakota
Production density, bu/square mile	36,867	15,487	8,097
Trainloading capacity, million bu[2]	2,956	2,536	1,052
Interstate shipments by rail and truck, million bu[3]	507	475	454
Ratio	5.83	5.34	2.32

[1]Iowa: corn, soybeans, & oats; Nebraska: corn, sorghum, & wheat; North Dakota: wheat, sunflower, & barley.
[2]Assumes two trains per week and 3,333 bu/car.
[3]Estimated for Iowa and Nebraska from various U.S. Department of Agricultural Statistical Reports and interstate shipping shares from Leath and Hill, and actual data for North Dakota provided by the Upper Great Plains Transportation Institute.

Theoretical Framework

Average cost pricing has been the dominant pricing policy of the country grain industry. Differential pricing has become more prominent in this mature industry with the advent of acute excess loadout capacity. Differential pricing is offering price premiums to different groups or classes of patronage. Examples are harvest versus nonharvest, small versus large, near versus distant, or producer versus elevator patrons.

Different marginal costs and different demands are two theoretical justifications for differential prices. Marginal cost pricing is based on the different costs of providing services to different classes of patronage. It is in harmony with the cooperative principle of service at cost and is legal. It is also relatively easy to rationalize to patrons, although it is often unpopular among them. The idea is to price the service so that equal margins exist for all patrons. If it costs 3¢/bu less to service one group of patrons, then that cost difference should be reflected in a price premium, thus maintaining the business at cost principle.

Differential prices based on different demands is more difficult to justify and explain to patrons. The legal basis hinges on the need to meet competitive pressures. That is, the cooperative, in order to compete for volume, must offer premiums to match those offered by competitors. But even this requirement need not concern cooperatives if they give differential

patronage refunds so that the final price for service is at cost for each patronage group.

Differences in demand arise when one group of patrons (e.g., market-area fringe versus nearby patrons or large versus small transactions) has more alternatives than another. The elevator would need to offer the fringe or large-volume patrons a premium over the nearby or small-volume patrons to attract their patronage from competing elevators. There is an economic incentive even for cooperatives and patrons not receiving a premium. It is the resultant lower average cost to all patrons. For example, patrons near the elevator would benefit from lower average costs resulting from increased volume associated with a more favorable price being given to patrons at the fringe of the elevator's market.

The question "Are additional benefits greater than additional costs?" should be asked when considering differential pricing. Differential prices should not be used if costs of administering the program exceed the benefits. Such a program would be a nuisance without significant benefits. Differential prices may not be appropriate when a majority of members, including large-volume members, do not want them and when the competitive environment does not require them.

Economies of Size (Trainloading Facilities)

A 1982 economic-engineering study by Schnake and Stevens that generated synthetic economies-of-size costs for trainloading facilities was updated to illustrate standardized economies of size at different locations with different levels of utilization. This report was uniquely qualified because it localized costs for relevant states. It included costs for unit trainloading facilities and contained a detailed breakdown of capital investments and fixed and variable costs. Price indices were generated to update each cost component.

Costs were generated for 25-, 50-, 75-, and 100-car loadout facilities operating at 20, 35, and 50 trains per year in Iowa, Minnesota, Nebraska, and North Dakota. Elevators for each of these locations were site specific in that they represented typical crop combinations and cost structures for each state. Economies of size feasible in trainloading cooperative elevators in Iowa, Minnesota, Nebraska, and North Dakota are illustrated in Table 4. Average costs decline 8.80¢/bu (43%) and 3.37¢/bu (28%) as utilization increases from 20 trains per year in 15-train increments to 50 trains per year. These savings present powerful incentives to increase throughput in order to cover fixed costs and lower variable costs.

An intriguing observation was that average variable costs react much the same way to changes in volume as average fixed costs (i.e., until capacity constraints are reached). Average fixed costs declined 7.91¢/bu (60.0%) and variable costs declined 4.26¢/bu (56.7%) as utilization is increased from 20 to 50 cars per year (Table 4). The additional cost of handling an additional delivery approaches zero. Average total costs are therefore extremely sensitive to volume so long as excess capacity exists. This creates considerable incentive to increase volume because of the impact on average costs. Creative pricing and other policies to increase volume are to be expected.

TABLE 4. ESTIMATED AVERAGE COST FOR A 50-CAR LOADOUT ELEVATOR, THREE LEVELS OF UTILIZATION, IOWA, 1984

Cost Component	Trains Per Year		
	20	35	50
	(- - - - ¢/bu - - - -)		
Fixed	13.18	7.53	5.27
Variable	7.51	4.36	3.25
Total	20.69	11.89	8.52

Survey of 50 Selected Trainloading Cooperatives

Iowa and Nebraska were identified as states having some of the most acute problems with excess loadout capacity. North Dakota was included as a contrast because unit train rates were introduced later and the industry did not appear to be seriously overbuilt. Cooperatives to be interviewed were selected from a complete list of trainload shippers in each state. They were selected on the basis of variety and number of patrons, satellite stations, and possible variety in pricing policies. Officers of the federated cooperatives and banks for cooperatives operating in these states nominated cooperatives for inclusion. Major topics included in the survey were:

Competition (distance & pricing policies)
Awareness of & attitude toward pricing policies
Co-ops & nonco-ops compared
Shipping practices (destinations, railroads, contracts)
Estimated handling cost & economies of size
Impact of differential pricing & future prospects
Organizational structure
Changes in facilities (recent & expected)
Gross margins
Differential pricing practices
Policies toward small- and large-volume producers
Criteria for distribution of net savings

Of the 50 interviews conducted 24 were in Iowa, 14 in Nebraska, 9 in North Dakota, and 3 in Southwestern Minnesota. The three elevators in Minnesota were grouped with Iowa because operating environment was similar.

Cooperatives selected for the survey had relatively large trainloading throughput and storage capacity, and a variety of patrons and satellite receiving stations because they were selected on these criteria (Tables 5 to 7). One cooperative had six trainloading facilities with a total loadout capacity of 300 cars per day and 23.6 million bushels of storage. Separate cooperatives had 20 elevator patrons, 9 single-car and 11 off-rail receiving

TABLE 5. FREQUENCY DISTRIBUTION OF THE NUMBER OF INDEPENDENT ELEVATOR PATRONS AND RECEIVING STATIONS OWNED BY 50 SELECTED TRAINLOADING COOPERATIVES, 1985

Frequency	Independent Elevator Patrons		Receiving Stations Owned		
	Co-op	Nonco-op	Train-loading	Rail[1]	Off-Rail
	(- - - - number of cooperatives - - - -)				
0	22	29	0	28	32
1	2	5	29	11	10
2	6	10	16	5	3
3	4	3	2	2	2
4	4	0	1	1	0
5	2	2	1	0	2
6-8	6	0	1	1	0
9-12	3	1	0	2	1
...					
20	1	0	0	0	0

[1]Nontrainloading rail shippers.

stations. The smallest cooperative had .65 million bushels of storage and a 50-car per day loadout capacity. Several cooperatives had none of these types of patrons and/or satellite stations. The number of producer patrons averaged

TABLE 6. STORAGE CAPACITY OF 50 SELECTED TRAINLOADING COUNTRY ELEVATOR COOPERATIVES, BY STATE, 1985

Storage Capacity	State			
	Iowa & Minnesota	Nebraska	North Dakota	Total
(MM bu)	(- - - - - - - -number- - - - - - - -)			
< 1	0	0	3	3
1 - 1.5	6	1	1	8
1.5 - 2.5	8	2	3	13
2.5 - 5.0	5	7	2	14
5.0 - 10.0	5	3	0	8
> 10.0	3	1	0	4
Total	9	14	27	50

TABLE 7. AVERAGE DISTANCE TO THE THREE NEAREST MAJOR COMPETITORS, 50 SELECTED COOPERATIVE ELEVATORS, BY STATE, 1985

Closest Major Competitor	State			
	Iowa & Minnesota	Nebraska	North Dakota	Total
	(- - - - - - - -miles- - - - - - - -)			
First	8	16	19	12
Second	15	27	36	22
Third	18	38	50	30

1,208 and ranged from 250 to 4,061. Average storage and trainloading capacity and distance to nearest competition reflects, in part, density of production. North Dakota elevator storage capacity was smaller and was more distant from nearest competitors. North Dakota also had less excess loadout capacity.

Considerable variation in estimated gross margins by crops were reported (Table 8). Margins were generally lower in states where the respective crop was dominant. Normally per unit costs are lower for high-volume grain than for minor grains.

Use of differential pricing among patrons and delivery stations varied considerably (Table 9). Only 10 (20%) of the 50 cooperatives sometimes used differential prices between producer patrons of different sizes. At the other extreme, 95% used differential pricing on grain received at rail versus off-rail stations.

This range in use of differential prices reflected both the magnitude of savings and difficulty of determining marginal cost. Double handling and additional trucking expense associated with grain received at satellite (rail and off-rail) stations are relatively significant and unambiguous. Therefore, differential pricing was more widespread in these situations. Only large over small transactions. Economies for large truck deliveries and transactions were next at 7% and 6%, respectively. Even in these cases the absolute level of estimated savings was less than 0.2¢/bu and relative to the price of the commodity; it can only be measured in 1/100ths of a percent. Estimates of total savings from handling single transactions of 100,000 bushels amounted to only 0.6 of a cent per bushel or $600 for the entire transaction.

Managers were unable to support these estimates with cost data. It is apparent that they feel these cost differences are insignificant and/or such costs are difficult to determine. Perceptions apparently are what influence pricing policies. The practice of issuing differential patronage refunds to patrons receiving favorable prices surfaced infrequently. One elevator, for example, gave cooperative elevator patrons 1/3 the regular refund. Some elevator patrons received none. This is equivalent to nonmember business.

TABLE 8. ESTIMATED GROSS MARGINS OF 50 SELECTED COOPERATIVE ELEVATORS, BY STATE, 1985

Commodity/ Statistic	State: Iowa & Minnesota	Nebraska	North Dakota	Total
	(- - - - - - - - - ¢/bu - - - - - - - - -)			
Corn:				
Average	7.8	9.9	10.4	8.7
Range	4-13	5-17	10-12	4-17
Soybeans:				
Average	12.6	19.5	12.5	14.6
Range	8-25	8-25	8-20	8-25
Wheat:				
Average	13.3	14.6	10.5	12.9
Range	12-15	9-22	7-15	7-22

Impacts of Differential Pricing

Eventual impacts of differential pricing as practiced by cooperative elevators will, of course, be a function of changes in demand and resultant level of excess capacity, competition, member attitudes, qualification of management, differences in cost structure, and premerger commitments. Justification for differential prices arises from an ability to separate patrons and differences in marginal cost and/or differences in demand. Difference in costs between different types of deliveries and transactions for

TABLE 9. DIFFERENTIAL PRICING BETWEEN CATEGORIES OF PATRONS BY SELECTED GRAIN MARKETING COOPERATIVES IN IOWA, MINNESOTA, NEBRASKA, & NORTH DAKOTA, 1985

Use	Large-vs. Small-Volume: Producers	Large-vs. Small-Volume: Transactions	To Top Off Unit Train	Rail vs. Off-Rail[1]	Single- vs. Multiple-Car Receiving Station[1]	Farmers vs. Elevator
	(- - - - - - - - - - - - - - - - percent - - - - - - - - - - - - - - - -)					
Never	80	62	46	5	18	44
Sometimes	20	30	50	28	14	32
Always	0	0	4	67	68	24
	(- - - - - - - - - - - - - - - - number - - - - - - - - - - - - - - - -)					
Cooperatives	50	50	50	18	22	50

[1]Not all elevators had off-rail and single-car receiving stations.

grain-marketing first-handlers appears to be insignificant. Therefore, differential prices must be based on differences in demand. Elevator cooperatives pressured by competition to use differential prices face a dilemma with possible unpleasant consequences unless they also return differential patronage refunds in order to maintain the business-at-cost principle that cooperatives practice. Differential prices based on cost differences are easy to justify, explain, and understand. But prices based on differences in demand are not as easy to rationalize and appear to violate the business-at-cost principle.

The only justification for giving large-volume deliveries and transactions a premium is the resultant impact on average costs. In this case small-volume patrons will be better off even though the business-at-cost principle has been compromised because both average fixed and variable costs would be significantly lower. As explained above, the business-at-cost principle need not be compromised.

Boards can resolve the dilemma by

1. not giving premiums or using uniform prices;
2. giving minor premiums based on cost savings, thus preserving business-at-cost principle and equal margins for patronage refunds; or
3. offering premiums larger than cost savings in order to attract volume and give differential patronage refunds or count such business as nonmember business.

Patrons receiving favorable prices and whose patronage is classified as nonmember business forfeit any right to patronage refunds. They have already received benefits in the form of favorable prices. But this practice would create a problem of equity generation. The problem could be circumvented if the cooperative generated equity with per unit capital retains, a common source of equity among fruit and vegetable cooperatives but rare among grain cooperatives.

Farmers

Trainload shippers are motivated to offer premiums to large-volume patrons by competitive pressures, lower per unit fixed costs resulting from added volume, and the lower cost of handling large-volume transactions and deliveries. Only 20% of the elevators sometimes offered differential prices to their farmer patrons on basis of size (Table 9), none of them on a regular basis. These premiums were given more in response to competitive pressures than on perceived differences in handling costs (Table 10). Therefore, loss in volume to cover costs loomed as the primary motivation for differential prices. The need for timely delivery to cover a short or to top off a unit train was also a factor.

What perceived cost differentials that did exist were insignificant and were not supported by cost data. Therefore, managers were not in a position to post differential prices because there was no cost basis on which to base them.

TABLE 10. AVERAGE VARIABLE GRAIN HANDLING COSTS AND SAVINGS UNDER SPECIFIED CONDITIONS AS ESTIMATED BY MANAGERS OF 50 SELECTED COOPERATIVE COUNTRY ELEVATORS, 1985

Handling Item	Variable Cost	Savings of Large Over Small[1]		
		Producer	Truck	Transaction[2]
	(- - - - - - - - ¢/bu - - - - - - - -)			
Receiving	3.3	.05 (1.5)	.23 (7.0)	.20 (6.0)
Conditioning	1.7	.01 (0.5)	.02 (1.2)	.03 (1.7)
Selling	1.3	.02 (1.5)	.02 (1.5)	.15 (11.5)
Drying	1.8	.00	.00	.00

[1]Midpoints of ranges were used to calculate the averages. Number in parentheses is savings as a percent of variable cost.
[2]Weighted average of estimated savings from a 100,000 bu transaction = 0.60¢/bu.

SOURCE: Cobia, et al.

The apparent impact of differential pricing will be another disadvantage faced by the small-volume patrons; their economic position is eroded. But this is a short-sighted and misguided view. The long-run position of a small-volume member will be enhanced by giving volume premiums. With differential prices the cooperative will operate with greater volume and lower costs. Small-volume members therefore receive a higher net price. With persistent use of uniform prices, the cooperative loses volume to competitors and average costs increase. Small-volume members receive lower net price as a result. A forced merger or liquidation of their cooperative may also take place.

In most competitive markets, policies of cooperatives will have limited net effect on farmers. Because of competition, changes will take place regardless of cooperative pricing policies. Nevertheless, if the more numerous small-volume members insist on uniform prices, they will drive large-volume members to elevators that will pay the premiums and will thus leave their own elevator operating at a much lower capacity and higher cost. As a result, small-volume patrons will be in worse condition than before or in worse condition than if a premium had been offered to the large-volume patrons. Therefore, even small-volume patrons should support properly conceived premiums based on volume. The resultant higher volume would help cover fixed costs and thereby improve patronage refunds and prolong the useful life of the cooperatives.

Patrons located near satellite stations may experience a slight relative decline in the value of their land. Trucking costs to more distant delivery points will be higher. These factors eventually get capitalized into land values. Patrons' concern over keeping satellite stations open is therefore understandable.

Pricing differentials of country elevators based entirely on cost differences between deliveries and transactions of different sizes will be ineffective because cost differences are insignificant. From the producer's perspective, other variables such as interest and storage expense and price risk overwhelm any premiums that could be offered strictly on the basis of cost. To gain producer interest, price differentials must include a demand dimension as well as a cost dimension.

Clearly defined criteria for price premiums will encourage patrons to change their scope and method of operation to capture these premiums. Members may, for example, change their marketing strategy by being prepared to sell more of their grain at one time to take advantage of favorable prices offered for a large transaction or to help top off a unit train. Such an action would require the patron to be more sure of his timing than relying on such strategies as averaging. Given that premiums are offered, patrons will have to evaluate the trade-off between several possible transactions in hopes of achieving a higher average price versus the risk of lower price and fewer but larger transactions. In the latter case, farmers could receive as good a price or better price; they would just have fewer opportunities. This is another reason for farmers to establish a carefully conceived marketing plan.

It is unlikely that differential prices or premiums for large-volume patrons will exist in geographically isolated markets or markets where cooperatives are dominant such as in western North Dakota and western Nebraska. Economic incentives to do so are limited. Competitors are not, trying to bid away large-volume patrons, except on the fringe of their market. Therefore, premium must rest on costs. Cost differentials are unlikely to overcome negative attitudes because the cost differences are not as pronounced as in, for example, fuel delivery, and the differences have not been documented.

Satellite Stations

Satellite stations will, with few exceptions, decline in use and will in many cases be eliminated as receiving stations. Lower prices offered for delivery at these stations will help move this structural change along. Differential pricing between main and satellite stations was the most common differential pricing reported. Nearly 70% of the elevators always used differentials in this case. Their justification was to attract direct shipments to the main station to avoid the additional handling and freight costs of using the satellite station.

In contrast to cost differences between farmers of different sizes, the cost savings of direct delivery to the main station is obvious and easy to measure. Grain is handled more than necessary than when delivered directly to a trainloading receiving station. The elevator, rather than the patron, absorbs transportation costs. Not only is the grain handled an additional

time, but variable costs are generally higher than at the main station because of less efficient equipment. Most fixed costs can be ignored because the physical plant has typically been depreciated out and alternative uses are minimal. It was the authors' impression that most differential prices did not fully reflect these additional costs.

Failure to use differential pricing by 21% of the elevators forced patrons delivering to the main stations to subsidize those that deliver to satellite stations. All patrons are penalized because of the added layer of costs.

Most elevators not using differential prices at satellites do so because of premerger agreements. Apparently, during premerger negotiations, explicit or implied commitments were made to members of the previously independent satellite cooperatives. These commitments were not only to keep the merging receiving station open but also to offer the same price as at the main stations. These agreements force continued use of uniform prices. This policy will only prolong the use of these receiving stations, make these cooperatives less competitive, and return fewer benefits to their members. Managers are employing other strategies to reduce deliveries to satellite stations such as arranging for on-farm pickup of grain.

Not all satellites will fall into disuse. Satellite receiving stations often provide relief during the harvest glut. Some satellites are also used to advantage for small domestic shipments that cannot use unit-train rates. The same rationale for the continued role of small independent cooperatives is also relevant to satellite stations.

Satellites can always provide storage. They are more storage than throughput oriented, and the storage function has been enhanced by government CCC storage programs. Should these programs change or be eliminated, satellites would be more affected than throughput-oriented facilities.

Decline in the use of satellite stations as receiving stations should take place regardless of competitive pressures because this is an internal matter. Only continued reliance on premerger agreements to keep prices at the satellite uniform will prolong their continued use as a receiving station, particularly if prices reflect true costs.

Cooperative Trainloading Elevators

Impacts of differential pricing policies on cooperatives are obscure and variable. The competitive environment, cost structure, and mind set of members and manager all play significant roles. Interaction of these variables will yield a variety of results.

Use of differential prices among different classes of patrons will place a cooperative on a firm competitive foundation--provided that prices are rationally based and its basic cost structure is relatively low. Such cooperatives will know how far to go to attract the necessary volume, when to let it go, and how to set margins so that one set of patrons is not subsidizing another set. These cooperatives will be competitive and be able to maintain volume, thus keeping costs at a minimum. However, the rationale

and data supporting multiple prices will have to be clearly explained and understood. Otherwise, patrons, particularly those not receiving the premiums, may create adversarial relationships. All patrons, particularly voting members, have a right to know that they are not being arbitrarily discriminated against.

Cooperatives that do not offer differential prices in competitive markets will be priced out of the market and thus lose some of their highest volume patrons. Left with low volume they will operate with higher than necessary margins. Ultimately, such elevators may be forced to merge or liquidate.

In geographically isolated markets, the cooperative will not be bothered so much by competition for large-volume patrons and can therefore pursue an independent pricing policy based entirely on costs. These cooperatives are located in western Nebraska and western North Dakota. They will only feel a challenge on their trade-area fringe. Continued acquiescence of large-volume patrons to subsidization of small-volume members will likely persist because alternatives are limited and justification for differential pricing is limited. Large-volume patrons would not realize much of a premium.

Managers of elevators observed that many cooperatives were in a precarious situation because of their relatively high cost structure. Cooperatives became enamored with elaborate physical plants, pushed the construction of facilities, and purchased equipment to satisfy a wide array of services requested by members to the extreme. This load of high fixed costs places cooperatives at a disadvantage compared to noncooperative elevators. Many noncooperative elevators, on the other hand, have been able to achieve the same throughput capacity by substituting careful scheduling of receipts for large and expensive concrete storage silos; avoiding costs of auxiliary services; and concentrating on high-volume grain leaving low-volume grain, with attendant costs, to cooperatives. As a result, these cooperatives are vulnerable because noncooperative elevators have a lower cost structure and greater pricing policy flexibility.

Payment of a premium to cover a short when loading out a unit train seemed to be a function of operating policy and storage capacity. The speed and timeliness of relatively large deliveries were major reasons given for offering premiums to large-volume patrons. Over one-half of the managers indicated they always or sometimes engaged in this practice. Generally, the premium was publicly posted and was available to all patrons. Therefore, this pricing policy is seen as having a neutral effect on patrons and the competitive structure. To the extent that premiums are offered to a select few (e.g., large-volume patrons), the economic impacts should be similar to those discussed above for differential prices for different size patrons. Several managers of elevators with considerable storage capacity indicated that they always had the grain on hand before commitments were made. Therefore, they never had to attract grain with premiums to top off a unit train.

Single-Car Shipping Cooperatives

Cooperatives without trainloading facilities are not able to attract grain directly for export and for other high-volume shipments. Their high-volume patrons could be bid away by premiums paid by trainloading elevators thirsty for volume to reduce average costs. To share in the trainload rates, single-car shippers have to transship grain to elevators with trainloading facilities. Only 24% of the trainload shippers extended premium prices over what farmers received to these elevators; 32% did sometimes.

Favorable prices (lower margins) can be extended to single-car shippers because

1. delivery of relatively large shipments is timely,
2. receiving and handling costs are lower,
3. interest rates on inventory are lower, and
4. grain is sometimes blended and ready for shipment.

Blending could be a disadvantage because it generally contributes to improved margins.

An amazing 44% of the trainload shippers did not offer their elevator patrons a premium over that of farmer members. It is difficult to conceive that such a policy can be maintained for long, particularly in the face of excess loadout capacity and the advantages of receiving grain from an elevator rather than producer patrons. To the extent that trainload shippers can persist in a uniform pricing policy, these elevator patrons will be under severe market and financial pressure. They cannot offer their patrons in the market area bordering the trainload shipper's market as favorable a price unless their merchandising operation is subsidized by another activity. These single-car shippers are, in effect, subsidizing farmer shippers to the trainloading facility. The incentive for single-car shippers to accept this business is the increased volume to cover their own fixed costs. They operate on the difference in price between the bids they can make on single-car rates and bids from the trainload shipper based on unit train rates.

This is a rather gloomy picture for single-car shippers. But several will likely survive, at least in the short run, in better financial position than their overbuilt, high-fixed cost trainloading neighbors. These small elevators typically have fully depreciated facilities and low interest expense. They can also carve out for themselves special market segments where they have a comparative advantage. Several domestic markets, especially corn, sorghum, and wheat, cannot accommodate unit-train quantities. Single-car shippers are in just as good, if not better, position to service these needs. They also can pursue similar markets for lower-volume specialized crops.

Federated Cooperatives

The impact of differential pricing by trainloading cooperatives on federated cooperatives is indirect. These policies will further weaken or draw business away from the federated system. Large-volume farmers would be attracted to trainload shippers and away from single-car shippers (traditional patrons of the federated cooperative), thus further weakening smaller cooperatives traditional trade with the federated system.

Managers were uniform in their feelings that federated cooperatives will be forced into a general retrenchment. They need to consolidate by reducing overlapping facilities and membership. Only 1 manager out of 50 thought that federated cooperatives would become a more dominant force. Supporting these statements was a major restructuring of two large midwestern federated grain-marketing cooperatives after this survey of trainload shippers was taken. AgriIndustries sold most of its facilities and formed a joint venture with Cargill, a noncooperative, with what remained. GrowMark withdrew as an independent force by forming a joint venture with ADM.

Most of the trainload shippers did not use a federated cooperative even though, as one manager stated, "We are the largest equity holder." These trainload shippers were large enough to compete for the same business. A few of them saw themselves becoming federated; they averaged 3 cooperatives as patrons, 10 had 6 or more, and one had 20 (Table 5). Differential prices will simply augment this movement to bypass the federated cooperatives because prices offered by trainload shippers will often be more than single-car prices offered by the federated cooperative affiliates.

The shift to bypass federated cooperatives is more of a fundamental structural change created, in the main, by unit train rates than a sign that federated cooperatives have failed. Economies-of-size studies have, for years, concluded that much larger and fewer elevators would return more benefits to producers. However, unit train rates have forced the issue. These rates prompted the creation of units with high throughput capacity. Added volume has made it economical for many large elevators to create their own merchandising departments. These departments often pride themselves in acquiring more favorable bids than those achieved by federated cooperatives through which they formally shipped their grain.

Single-car shippers continue to need services provided by federated cooperatives, but the need will be for a slightly different mix of traffic and at reduced volumes. Federated cooperatives could, and have done so, take an aggressive role in helping to rationalize the location of satellite stations, size and location of trainloading facilities, etc., and change merchandising policies to accommodate the realities of new relationships created by unit train rates.

Noncooperative Trainloading Elevators

Noncooperative elevators were reported to have two major advantages over cooperatives. First, many noncooperative elevators seem to be concentrating exclusively on high-volume grain with low-cost facilities. Lower costs are derived from lower overhead from less elaborate facilities and equipment associated with greater storage capacity and services that cooperatives typically cover. Reduced switching from one grain to another lowers both handling and merchandising costs.

Second, they have greater freedom in pricing. Managers do not have to answer to a local board of directors composed of producers. They do not need to worry about openness generally present in a cooperative. Therefore, noncooperative elevators can engage in a wider variety of prices than cooperatives; patrons even expect it. Managers of cooperatives certainly thought it was taking place. To the extent that cooperatives have a low-cost

structure and are free to engage in differential pricing, they are in a relatively favorable position.

Associated Observations

Availability of Cost Data

One of the most disappointing and yet not surprising findings was the lack of cost data on which to base differential pricing decisions. Several elevators had detailed cost information but did not have it classified in a way that differential pricing policies could be defended. If accurate cost data is not available, differential prices may not include equal margins. Members have a right to know that one group of patrons is not subsidizing another.

Without accurate cost data, management

1. cannot accurately allocate fixed costs,
2. may be in violation of laws relating to differential prices,
3. may violate the business-at-cost principle, and
4. may be too aggressive in offering premiums.

There may be some business that the cooperative should let the competition take.

The challenge is more difficult in grain marketing than in supplies such as fuel and feed because differences in costs of serving different patrons are not as sensitive to volume. Even so, excess loadout capacity has forced several cooperatives to offer premiums in order to preserve their volume. But these premiums have been extended not knowing how far the cooperative should go to be fair to their other members and to contribute to the financial strength of the cooperative. Unfortunately, management cannot wait for good cost data. They have to react immediately to competitive pressure.

Criteria for generation of costs, for benefits from increased volume, and for resultant price differentials should be based on factors which directly influence costs. Differences such as size of transaction should be used rather than institutional factors such as whether the patron is a producer or an elevator. Factors such as size of transaction and timeliness of deliveries may often be, but not always, linked with type of patron. Producers will be more likely to understand differential prices if they can see the criteria arise out of how costs and benefits are generated. They can also visualize how it would be possible for them to meet the criteria if they changed their farming and marketing operations.

Distribution of Net Income

Net income was distributed to patrons in four ways, all based on volume of business with the cooperative (Table 11). They were by bushels or monetary and by individual grain or a blend. Managers using one approach seemed surprised that other cooperative elevators were using another. Use of these approaches is somewhat regionalized. Nearly 3/4 of all cooperatives distributed net savings as a blend rather than segregating by crop (Table 11).

TABLE 11. METHOD OF DISTRIBUTING PATRONAGE REFUNDS BY 50 SELECTED COOPERATIVE ELEVATORS, 1985

Method	Bushels	Monetary	Total
	(- - - -	percent - - - -)	
Individual grain	18	8	26
Blend	66	8	74
Total	84	16	100

This practice raises questions about service at cost. Typically, one grain generates more net savings than another. If the cooperative is to operate with service at cost, then refunds should be segregated. This is also true for services such as drying. Members may more readily give up unprofitable services if patronage refunds are segregated.

There are valid reasons for not segregating net savings by product or service. Segregation could become a nuisance and not worth the effort. Members may also consciously wish to have a blended allocation of net income.

Premerger Commitments

Several managers were hamstrung in their pricing policies at satellite stations. They were forced to pay the same price at these receiving stations as at trainloading stations by explicit or implied premerger agreements. These commitments were apparently made to encourage members of the merging station to approve the merger.

These concessions are not economical. All members, including those to whom the agreements were made, are penalized. Average costs are higher because of double handling, prices not reflecting the cost of doing business, net savings being reduced, and the competitive position and financial strength of the cooperative being compromised. Many of the benefits of the merger are thus not realized. It is important to avoid these kinds of commitments during merger negotiations. Members need to understand that location and pricing decisions will be based on costs rather than political considerations. It is then up to management and the board to carry out such commitments.

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