Summary

1. In general when prices were varied to sell an equal volume of each size potato, the change in price was accompanied by an increase or decrease in volume of sales for each size.

2. When prices were varied to move the sizes in proportion to their production, prices of Small and Large potatoes were increased greatly in comparison with Medium without obtaining either an increase in sale of Medium or a decrease in sales of Small and Large.

3. When sized potatoes were offered, total sales of Triumph potatoes in the experimental stores were greater than before or after the experiment and higher than in the nonexperimental stores of the same chain.

4. When sized potatoes were offered, customers in one chain said their purchases varied slightly from their usual buying custom. A lower percentage bought Medium and Large sizes, and a greater number bought Assorted. In the nonexperimental stores more bought Assorted and fewer Small and Large.

5. As size of family increased, the purchases of Medium size increased, while purchases of the Large size remained rather constant.

6. In the experimental stores nearly 27 per cent more customers in the medium income areas bought Medium size potatoes than in the high income areas. In the high income group sales of other sizes were greater.

7. The principal reasons given by customers for always buying a particular size were portion control, ease of preparation, and specific use.

8. In the experimental stores 84 per cent of the customers preferred sized potatoes, 8 per cent did not, and 8 per cent had no preference. In the nonexperimental stores 80 per cent preferred sized, 3 per cent did not, and 17 per cent had no preference.

9. Three persons out of four bought potatoes in units of 5 pounds or less. The percentage of customers purchasing 10 pounds or more increased as size of family increased. The reverse was true for purchases of less than 5 pounds.

10. In one chain 44 per cent of the customers in the medium income area and 89 per cent in the high income area bought potatoes in 5-pound units. Fifty-five and 9 per cent, respectively, bought 10 pounds or more per purchase. In the chain and independent stores 44 per cent of the customers in the low income area bought less than 4 pounds per purchase. Thirty-eight per cent in the medium income and 58 per cent in the high income groups bought 5-pound units.

11. In order of importance, boiling, baking, frying, and salad were the most frequent uses.

12. Quality was criticized by 36 per cent of the customers, cuts and bruises by 17 per cent, too high prices by 16 per cent, fact potatoes were not sized by 15 per cent, bin displays by 9 per cent, and other things by 7 per cent.

13. Bulk displays were preferred to prepackaged potatoes by 74 per cent of the persons interviewed.

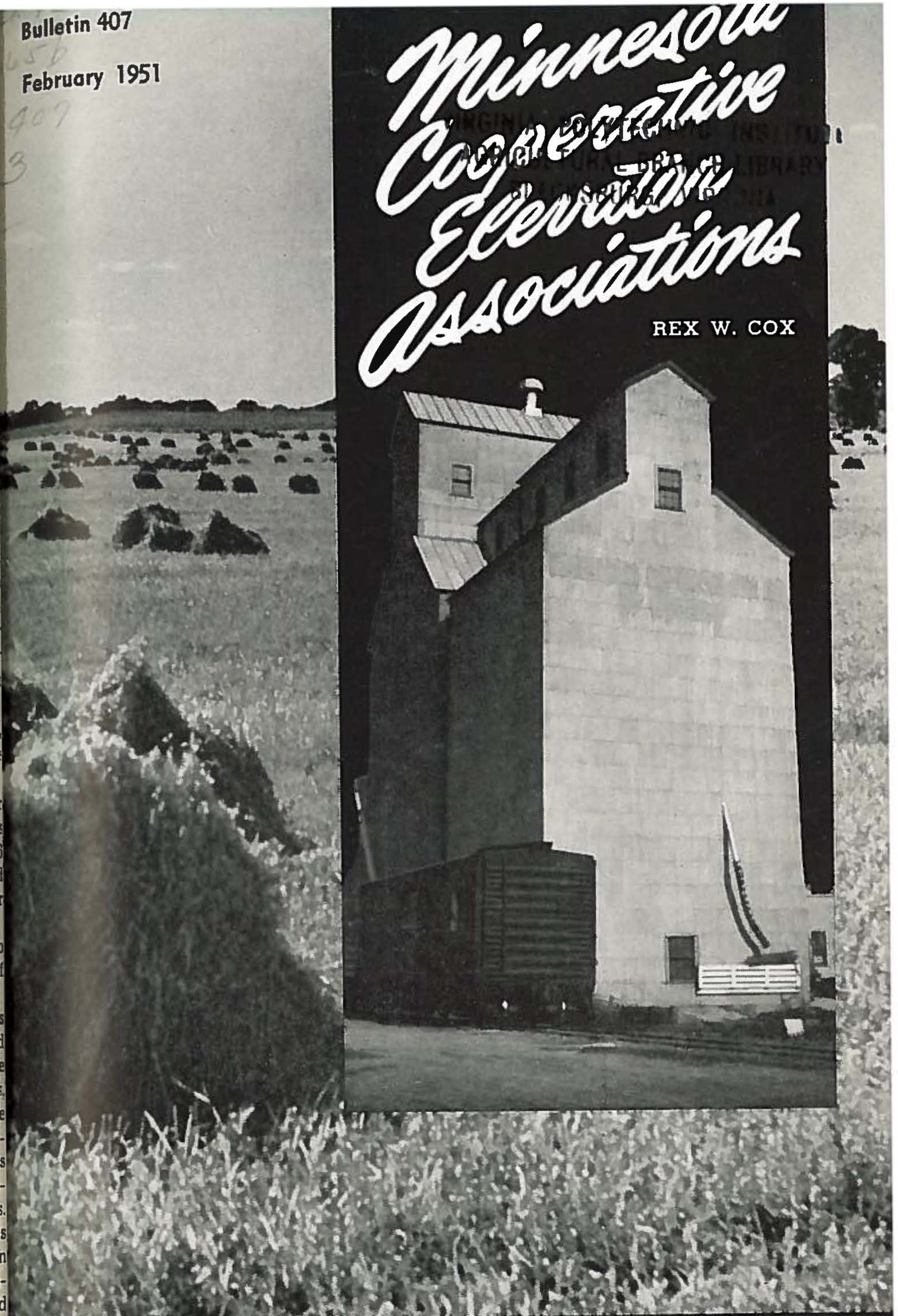
14. The percentage of grade defects increased as the potatoes moved through trade channels. The chief cause was increases in shatter bruises, cracks, and greening. The greatest increase occurred in Chicago between the warehouse and the retail store. In most lots inspected in the stores, "damage" exceeded U. S. No. 1 grade tolerances. "Injury," due chiefly to shatter bruises and cracks, increased greatly between shipping point and warehouse in Chicago. Both damage and injury increased as size of potatoes increased.

Cover photo courtesy of United States Department of Agriculture, Agricultural Extension Service

Bulletin 407
February 1951

Minnesota Cooperative Elevator Associations

REX W. COX



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Minnesota Cooperative Elevator Associations

REX W. COX

THE FARMERS' elevator movement in Minnesota started about 1890. The number of elevator associations in which farmers owned at least 50 per cent of the stock had grown to 270 by 1914. In that year the total membership was 34,500, an average of 128 members per association. For the fiscal year 1912-13, $22,000,000 worth of grain was marketed and $2,000,000 of supplies purchased for members. The grain marketed through these associations constituted 30 per cent of the grain marketed by Minnesota farmers.

Although these elevator associations were mainly farmer-owned, all did not conform in their organization and operations to what were then considered the essentials of cooperation. These essentials were the one man, one vote principle; limitation of the amount of stock owned by any member; and the patronage dividend. About 95 per cent of the 270 associations provided for one man, one vote; 84 per cent set a limit on the number of shares owned by any person, ranging from 1 to 50 shares; and one third of the companies limited dividends on capital stock and distributed the balance of the earnings on the basis of patronage. Usually, the distribution of patronage dividends was confined to members.[2]

Today, there are 1,188 public local grain warehouses or elevators in Minnesota. Of this number, 300 are classified as farmers' elevators, but only 260 of these can be called cooperative if the payment of patronage dividends and limitation of dividends on capital stock are considered as requirements. The grain marketed from these farmers'

[1] This study was conducted with funds provided by the Research and Marketing Act. Credit is due to Dr. E. Fred Koller, professor, Division of Agricultural Economics, who assisted in the organization of the study and analysis of the data, and to Max K. Hinds, former economist in marketing, Agricultural Extension Division, who participated in field work and other aspects of the study. Appreciation is expressed to managers of elevators for their cooperation in supplying the basic data for the study.

[2] Weld, L. D. H., *Farmers' Elevators in Minnesota,* University of Minnesota Agr. Exp. Sta. Bul. 152. August, 1915.

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Table 1. Number of Local Grain Elevators and Amount of Grain Handled by Each Type, Minnesota, 1947-48*

Type of elevator	Number	Shipments Amount	Per cent
		million bushels	
Farmers	301	63.1	50.2
Cooperative	260	54.5	43.3
Other	31	8.6†	6.9
Line	308	31.3	24.9
Independent	433	26.8	21.4
Mill	146	4.4	3.5
Total	1,188	125.6	100.0

* Data supplied by Minnesota Railroad and Warehouse Commission, Office of Supervisor of Local Grain Warehouses.
† Estimated.

elevators was about 50 per cent of all grain shipped from local elevators in the fiscal year 1947-48.

Cooperative elevators, which constitute about 22 per cent of the elevators in the state, handle 43 per cent of the shipments of grain. Independent elevators form the largest group, or more than one third of the total, but because of the smaller business per unit, they handle only 21 per cent of the shipments.

Farmers organized and invested their funds in cooperative elevators for better results in marketing grain. Skillful use and preservation of this investment are of major concern to the members of these associations. During the period of constantly rising prices, few associations had any financial difficulty, but the sharp increase in operating costs has given rise to a number of financial problems. In addition, there are constant problems of competition, organization, and distribution of margins. This bulletin presents an analysis of the organization and operation of a representative group of Minnesota cooperative elevator associations. The first part is concerned mainly with the organization, cooperative character, and management of elevators. This is followed by a discussion of the grain supply area, competition, and merchandising policies. The final sections are devoted to analyses of the financial status and financial operation of elevator associations.

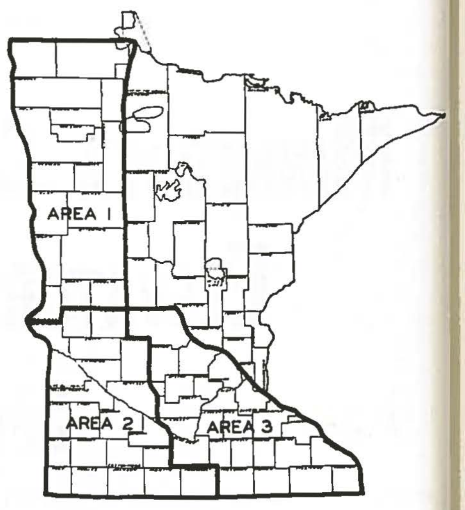

FIG. 1. Location of areas.

The Study

The data on which this report is based were obtained through interviews with the managers of 80 cooperative elevator associations in the summer of 1949 and from the annual audits for the fiscal years 1947-48 and 1948-49. The operation of elevators is influenced by the type of farming and kinds of grain grown in the locality, the volume of business, and the relative importance of the grain business compared with the merchandising business.

In the selection of the elevators included in the study, the state was first divided into three areas. All of the cooperative elevator associations in each area were then grouped into the following five divisions according to the dollar volume of total sales in 1947-48: less than $400,000; $400,000-$799,000; $800,000-$1,199,000; $1,200,000-$1,599,000; $1,600,000 and above. The sample of 80 associations includes the random selection of 25 per cent of the associations in each of the first four groups in each area and all of the associations with a volume of sales of $1,600,000 or more. The locations of the areas are shown in figure 1. The number of elevators selected for study in each area is as follows: 25, Northwest area; 45, West and Southwest area; and 10, Southeast.

In the discussion which follows, reference to any area is made by number, as Area 1, rather than by the name. The statistical data presented refer to the fiscal year 1947-48 unless otherwise specified.

The basic data of this study were obtained from 80 elevator associations. These associations represent random selections from the total of 256 cooperative elevator associations in Minnesota. In some of the tables which follow, especially those toward the back of the bulletin, the original data have been inflated by appropriate measures to obtain estimates for 256 associations.

Organization and Cooperative Character

Legal Basis of Organization

Provision was made in the laws of Minnesota for the incorporation of cooperatives as early as 1870. Fifty-four of the elevator associations surveyed were incorporated under statutes enacted before 1920 (table 2). Laws governing the organization and operation of cooperatives have been changed several times. Associations incorporated after 1922 were organized under the Cooperative Law of 1923 or its amendments. In addition to those which have been incorporated since 1922, many of the older associations have reorganized or changed their bylaws to conform to specifications included in recent amendments to the 1923 Cooperative Law. About one half of the 80 associations have reorganized completely or amended their bylaws since 1939, and one third have made these changes since 1944.

Table 2. First Incorporation of 80 Minnesota Elevator Associations as Cooperatives

Date of incorporation	Number of elevators
Before 1900	6
1900-1909	28
1910-1919	20
1920-1929	16
1930-1939	4
1940 and after	6
Total	80

The 1949 session of the Minnesota legislature passed a number of amendments to the basic cooperative statutes. However, a cooperative remains subject to the law under which it was incorporated until the articles and bylaws are properly amended to bring the association under the provisions of the amended statutes. The characteristics essential to a Minnesota cooperative association, according to the amended statutes, include the following:

- Individual stockholders are restricted to only one vote in the affairs of the association.
- Proxy voting is prohibited.
- Shares of stock are transferable only with the approval of the association.
- Dividends on stock may not exceed 6 per cent.
- The net income of the association, except certain amounts required for a reserve fund or permanent surplus or set aside by the vote of the association, may be distributed on the basis of patronage and the records of the association may show the interest of the patrons, stockholders, and members in reserves and surplus.

Conformity to Legal Cooperative Specifications

STATE LAWS

All of the 80 associations surveyed limited each member to one vote. Eight limited dividends on capital stock to 8 per cent, although only one paid this much. Sixty-three associations limited dividends to 6 per cent. Of these, 29 paid less than 6 per cent in 1948. Nine of the associations specified a dividend rate of less than 6 per cent.

All associations provided for the payment of patronage dividends and dividends were actually declared in 1948 except by those elevators which had either no net savings or only nominal savings. In the case of 12 other associations, patronage dividends were distributed only to the sellers of grain, both member and non-member producers, and three associations confined the distribution to members only. With the exception of one association, both of these procedures were in direct violation of the bylaws. Distribution of margins only to sellers of grain is sometimes justified on the basis that the merchandise business is being conducted at cost and in consequence, does not provide for any net returns.

Although a limit on the number of shares held by any one member is not a requirement according to the latest amendment, about three fifths of the elevators provide for a limitation in their bylaws.

FEDERAL LAWS

In order to obtain exemption from federal income taxes, the association must meet the following additional requirements. (1) The association must consist of agricultural producers. (2) The business transacted with non-members must not be greater in value than that handled by it for members. (3) Not more than 15 per cent of the merchandising business may be with non-member non-producers. It has been generally assumed that if 90 per cent of the members are producers, the association meets the first requirement. The Bureau of Internal Revenue specifies, however, that substantially all of the stock must be held by producers of agricultural products and determines individually the status of any association which is applying for exemption or whose exemption is questioned.

The membership of the 80 associations varied from less than 100 to more than 1,500 and averaged 426. About 60 per cent of the associations had fewer than 400 members. Very few of the associations have had difficulty in meeting the specification that membership primarily must be producers. In all but 10, producers made up 90 per cent of the total membership. All of the members in 15 associations were producers. Some associations, however, have difficulty in keeping the membership in the hands of producer-patrons. Although the bylaws usually specify that membership shall be terminated if the member ceases patronizing the association, not all associations make a serious effort to terminate the membership. The management of all associations should keep in mind that the cooperative character of an association requires that not only shall a high proportion of the members be producers and producers be patrons, but also that control of the associations shall be in the hands of member-patrons.

With one exception, the amount of business with members exceeded that with non-members. In 29 associations, member business accounted for at least 80 per cent of the total. In general, the proportion of member business is higher in grain marketing than in merchandise sales. The proportion of the merchandising business transacted with non-member non-producers exceeded 15 per cent in only three associations.

Federal Income Tax Exemption Status

Fifty of the 80 associations paid no income tax because they had been granted exemption, and one association paid no tax because of no income. The income tax paid by the remaining 29 associations averaged about $1,600. Eleven paid less than $500 and three paid more than $5,500. A number of the nonexempt associations meet the federal specifications for tax exemption but have not applied for it. The amount of tax paid, however, may be relatively small because they adhere strictly to the policy of paying patronage dividends to both members and non-members. In case the dividends are retained and put in a reserve fund, the amount so added is credited to the individual patron accounts. It should be emphasized to those associations which are exempt that to keep this status, they must completely allocate retains.

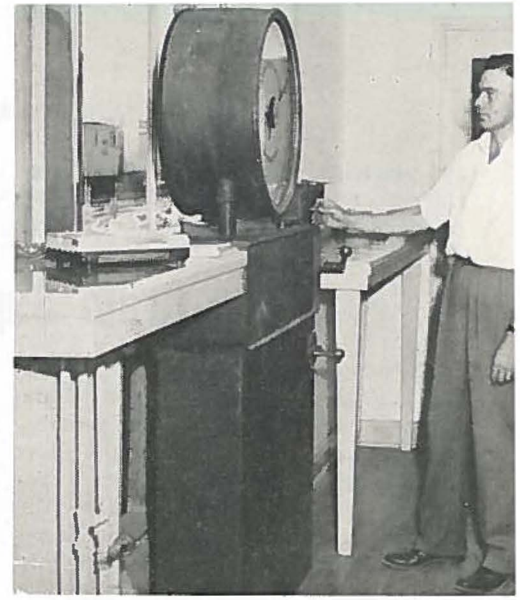

FIG. 2. Weighing a truck load of grain is the first step in determining the amount to be paid the farmer.

Management

The size of the board of directors varies from five to eleven members. The most usual size is seven members, this being the number in 50 associations. The length of the term ranges from one to three years. Seventy associations specify a term of three years.

The managers of the associations are given rather complete authority, particularly in the daily merchandising operations. Usually, the manager selects employees with the board's approval.

The amount paid the managers of 43 of the 80 associations includes the annual salary plus a bonus. The latter in some cases represents a stated per cent of the net earnings or of the net earnings above a specified level. In other cases the bonus is indefinite, depending on the decision of the board of directors at the end of the fiscal year. The earnings of the managers of six associations were less than $2,500 (table 3).

All associations provide for an annual audit and many provide for more frequent audits. The books of 35 of the 80 associations surveyed were audited twice a year or more. The managers of more than one half of the associations follow the commendable policy of preparing a monthly financial statement

Table 3. Annual Earnings of the Managers of 80 Minnesota Cooperative Elevator Associations

Annual earnings	Number
Less than $2,500	6
$2,500-$3,499	21
3,500- 4,499	24
4,500- 5,499	14
5,500- 6,499	7
6,500 and above	8
Total	80

for the board of directors. This keeps the directors informed of the changing financial status of the association. Nineteen of the associations rely solely on the annual audit to determine their financial condition.

Grain Supply Area

The efficiency of grain elevator operation is largely dependent on the volume of grain handled, other factors remaining equal. The most significant factors influencing the amount of grain received by an elevator are: (1) the amount of grain produced in the territory served, which in turn is highly dependent on climatic and soil conditions; and (2) the patronage the elevator obtains from grain producers in the supply area.

The patronage which a grain elevator enjoys depends on the interest of producers in the cooperative, the number of competing elevators serving the area and the competitive practices which they have adopted, the quality of the merchandising and other services provided by the elevator, and prices paid for grain including dividends declared at the end of the year.

Extent of Supply Area

The supply area of three fourths of the associations studied had less than a ten-mile radius, although a few drew grain from a distance of 15 miles or more (table 4). However, the amount of grain obtained from the greater distances was only a minor part of the total receipts of grain. Some associations perform services which encourage longer hauls by patrons who otherwise would patronize elevators closer by.

Table 4. Extent of Grain Supply Territory of 80 Minnesota Cooperative Elevator Associations

Radius of supply territory	Area 1	Area 2	Area 3	All areas
	number of elevators			
Less than 5 miles	1	4	1	6
5- 9	18	32	4	54
10-14	4	6	3	13
15-19	1	2	2	5
20 and over	1	1	0	2
Total	25	45	10	80

The number of patrons delivering grain varied from 40 to about 2,500. If Area 3 is excepted, however, the minimum number is about 90. The three associations handling the smallest volume of grain and located in the important grain-producing sections averaged 105 patrons and marketed about 101,000 bushels in 1947-48. A volume as small as this is inadequate for efficient operation, particularly if sales of merchandise constitute only a minor proportion of the total business. In contrast, four associations located in the important grain-producing areas averaged 1,180 patrons who delivered an average of approximately 1,330,000 bushels of grain during the year.

Competition

The patronage and volume of business of all elevator associations are limited in varying degrees by the presence of other competing grain buyers in their territory. In recent years, the competition has become more intense and the area of competition expanded because of the great and rapid improvement in truck transportation. Because the associations with the larger volume tend to increase their supply area, the smaller associations have increasing difficulty in maintaining an adequate volume.

Many of the competitors of the 80 elevators included in the study are other cooperatives. Occasionally, two cooperatives are located in the same

Table 5. Number and Types of Competing Grain Buyers Within Specified Distances of 80 Minnesota Cooperative Elevator Associations

Number of competing buyers and their location	Type of competing buyer			
	Other cooperative elevators	Independent elevators	Line elevators	All types combined
	number of elevators			
In same town				
None	78	62	52	38
1	2	16	26	33
2	0	1	2	8
3	0	1	0	0
4	0	0	0	1
Total	80	80	80	80
Within a five-mile radius				
None	58	52	38	24
1	20	20	33	25
2	2	5	9	14
3	0	3	0	11
4	0	0	0	3
5-6	0	0	0	3
Total	80	80	80	80
Within a 10-mile radius				
None	17	22	17	1
1	32	30	18	5
2	20	16	30	6
3	8	7	11	14
4	3	2	2	20
5-6	0	3	2	26
7-8	0	0	0	6
9-10	0	0	0	1
11-14	0	0	0	1
Total	80	80	80	80
Within a 15-mile radius				
None	5	15	10	1
1	27	25	16	0
2	24	18	25	1
3	14	11	20	4
4	8	6	5	16
5-6	2	2	4	28
7-8	0	3	0	21
9-10	0	0	0	7
11-14	0	0	0	2
Total	80	80	80	80
Within a 20-mile radius				
None	3	8	9	0
1	7	18	14	0
2	27	24	16	0
3	24	10	24	1
4	13	8	7	7
5-6	5	7	10	20
7-8	1	5	0	29
9-10	0	0	0	12
11-12	0	0	0	2
13-14	0	0	0	8
15-16	0	0	0	1
Total	80	80	80	80

town but usually local competition is either a line or independent elevator or both (table 5). As is shown by the last column of table 5, 38 elevators had no local competition and one elevator had as many as four local competitors.

Twenty of the associations compete with one or more other cooperatives within a five-mile radius for the available grain supply. Twenty of the associations compete with one or more independent elevators and 33 with one or more line companies. The last column of the table shows that 11 of the 80 associations have competition from three or more elevators within the radius of five miles.

When the radius of competition is extended to 15 miles, only one of the associations has no competition. Twenty-eight have five or six competitors of various types and seven have as many as nine or ten competitors.

Table 5 calls attention again to the rather intense competition that prevails for the available grain supply. The situation is very acute in some localities and in consequence, the time of survival of some associations, whether cooperative or other types, is limited. From time to time, boards of directors must decide as to the advisability of erecting a new structure. If the present volume is small because of competitive conditions, it might be wise to combine with a neighboring cooperative or to liquidate rather than to spend a large amount of money in a new structure.

Merchandising of Grain

Buying Policies

A high proportion of the grain purchased by elevator associations is delivered directly by the producer. About one fourth of the associations surveyed, however, purchased some grain from truckers, but only six associations obtained as much as 15 per cent of their total purchases from truckers.

The prevailing method of buying grain is outright purchase and the producer receives the current price at the time of delivery. About one half of the associations bought some grain on contract but only nine of these obtained as much as 5 per cent of their total purchases by this method. Of the associations contracting for future deliveries, one half make an advance payment to the producer.

The determination of the buying price or the price paid to the producer is the manager's responsibility. Over a period of time, this price should be such that the margin or the difference between the buying and selling price is sufficiently large to cover operating and other costs and to provide for reasonable net returns. In many localities, however, net returns are made possible only through an adjustment of costs to the prevailing margin. As an aid to the determination of the buying price, practically all associations subscribe to the "Grain Bulletin," a daily postal card with prices for all grains. The prices are the closing Minneapolis and Duluth terminal prices less the freight from the subscriber's station to the terminal market and a buying margin. The card thus furnishes a buying basis for the local association. Most associations, however, pay above the card price because the latter is based on the lowest quality for each grade that arrives in the terminal. The buyer, knowing the quality of his grain, often can pay a little more than card if that quality will sell for more at the terminal. Also, competition among local stations may force a smaller margin than is suggested by the card. Some managers pay little attention to the card price, particularly those who sell to arrive or on track.

FIG. 3. In determining the amount to be paid the farmer for grain, the manager must first determine the test weight, grade, and dockage.

It is the general policy for associations buying grain for consignment sales to change their buying price once a day. This usually occurs about two o'clock p.m., soon after the closing prices on the grain exchanges have been reported by radio. If the market is erratic or the price changes at the terminal are large, the manager may change the buying price more frequently during the day. When grain is being sold on track, the changes in on track bids during the day are likely to be reflected rather soon in changes in the buying prices.

Weights and Dockages

Since elevators buy grain on the basis of their own grade, dockage, and weight and usually sell on official grade, dockage, and weight at the terminal market, it is important for the manager to make correct determinations of these three factors. Some indication of the degree of accuracy with which weight and dockage determinations are made is shown in table 6 which summarizes the overages and shortages for wheat and flaxseed based on the volume of sales of the respective grains.

Table 6. Overages and Shortages in Wheat and Flaxseed Weight and Dockage Determinations

Overages and shortages	Wheat	Flaxseed
per cent of sales	number of associations	
Overage		
5.0 and more	4	4
4.0-4.9	1	1
3.0-3.9	1	4
2.0-2.9	2	10
1.0-1.9	9	9
Less than 1.0	16	31
Shortage		
Less than 1.0	19	12
1.0-1.9	9	8
2.0-2.9	1	1
3.0-3.9	3	....
4.0-4.9	2	....
5.0 and over	3	....
All associations	70	80

For example, about one half of the 70 elevators handling wheat had an overage and one half had a shortage. The overage, however, was less than one per cent of the total volume of sales in the case of 16 of the 33 associations showing an overage. On the other hand, the overage of four associations was 5 or more per cent of the sales. The shortage of about one half of the 37 associations which had a shortage in wheat amounted to less than one per cent of the sales. The shortage of three associations was 5 per cent or more.

About three fourths of the elevators handling flaxseed had an overage, and as in the case of wheat, both the overages and shortages for most of the associations represented a small proportion of sales. It is seldom that a perfect balance exists between the net weight of grains acquired for sale and actual sales. The lack of balance shown in table 6 is due either to inaccuracy in

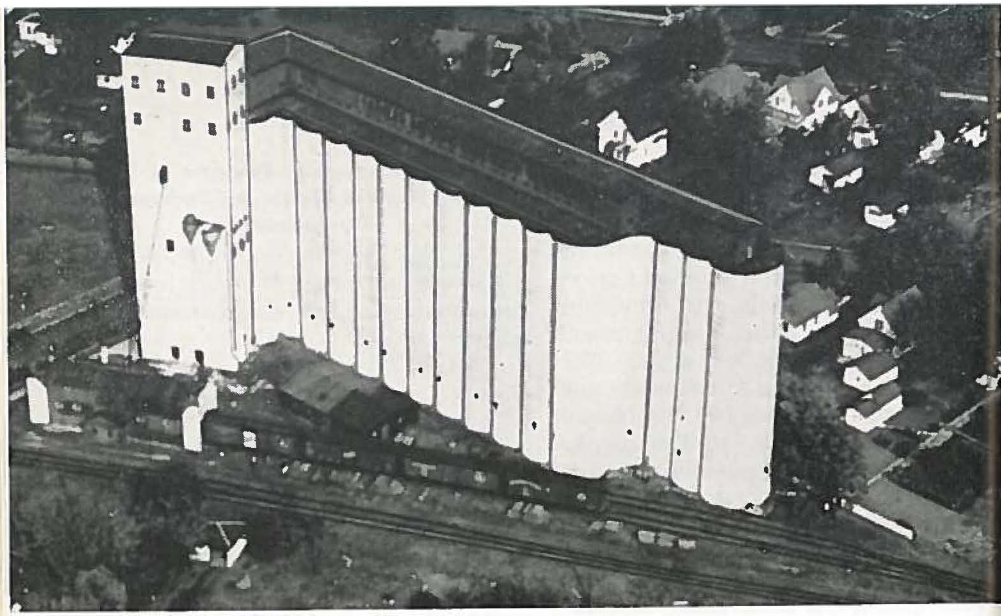

FIG. 4. Minneapolis is the largest cash grain market in the world. The terminal elevator capacity is about 92 million bushels. Pictured above is one of the largest terminal elevators.

weighing or dockage determination or both. With comparatively few exceptions, it appears that weighing and dockage determinations are fairly accurately made by the managers.

Selling Policies

An elevator association has little choice as to when most of the grain marketed must be sold. Limited storage capacity generally necessitates the sale or consignment for sale as soon as transportation can be provided. In addition during the past few years, managers have not been inclined to store owned grain in order to earn a storage charge because it has been almost impossible to maintain a satisfactory hedging position. That is, the fluctuations in cash premiums have varied greatly compared with those of future prices, both in amount and direction.

MARKET OUTLETS

In selecting the market or the buyer to whom the grain will be shipped, the elevator operator considers market price conditions, the condition of the grain, the availability of market, financial conditions, volume of movement, and other factors. The main consideration determining the destination of grain, however, is the condition of the market or price. At some stations much of the corn and oats are sold locally but for the state as a whole these grains as well as others move to some interior or terminal market.

Minneapolis and Duluth are the principal markets for spring wheat. Some elevators in Area 1 almost invariably ship wheat to Duluth because of the transportation advantages. Others in the same area are so situated that transportation costs to Minneapolis and Duluth are the same. In consequence, wheat is consigned to some holding point as Staples, Thief River Falls, or other points, and then forwarded either to Minneapolis or Duluth, depending on the relative bids offered by the buyers in the respective markets. The same procedure applies in the case of oats received by these stations, and to a lesser extent of flaxseed.

The principal market for grains produced in western Minnesota is Minneapolis. Transportation rates are favorable, and railroads run east and west.

In southern and southwestern Minnesota the market outlets are varied and the shipper has a wide choice in the selection of a market. For example, corn is sold on track or to arrive for delivery at Minneapolis, Kansas City, Cedar Rapids, Sioux City, Chicago, or other southern points. The same situations prevail for oats and soybeans, but most of the barley and flaxseed is shipped to Minneapolis.

Southeast Minnesota is not an important surplus grain region. In fact, much feed grain is shipped in for local consumption. Malting barley is shipped to Minneapolis, Winona, and Red Wing, the latter two places offering a preferential market to some stations. Soybeans are shipped to many points.

METHOD OF SALE

The particular method used in selling grain depends on the location, kind of grain, price trends, and preference of the manager. Consignment is the principal method of sale in the spring wheat areas. By selling wheat on a sample market, the manager receives the premium that buyers pay. With on track and to arrive sales, the premium is not always reflected back to the association.

With the exception of a few locations, barley and flaxseed are consigned to the terminal market. In the case of barley there is no acceptable method whereby the buyer at the terminal can indicate the particular quality characteristics he desires. Inasmuch as the grade designation provides only a partial identification of desirable characteristics, very little barley is sold on track or to arrive.

The most common method of selling corn, soybeans, and oats in southern and southwest Minnesota is to arrive or on track. On-track buyers are located at a number of points in this area and keep in close contact with the operators of the elevators. Price offers for grain to be delivered at points in Iowa or other southern locations are usually on a Chicago price basis.

FIG. 5. During the busy season, grain is being constantly transferred from loading pit to bins, from bin to bin, or from bins to cars.

Hedging

The managers of only a few of the associations surveyed indicated that they followed a consistent policy of hedging grain sold on consignment. Most associations hedged at times; with some it was the usual practice. The decision as to whether or not to hedge depends not only on the general trend of prices and on the relation between cash and future prices, but also on results of past hedging. A more consistent policy undoubtedly would be followed if the fluctuations in cash and future prices were more similar, thereby enabling the operator to maintain a reasonably safe hedging position. About one third of the managers interviewed indicated that hedging results were unsatisfactory and many more said that the protection obtained by hedging was only fair.

Table 7. Asset Values of 256 Minnesota Cooperative Elevator Associations, 1948

	Area 1		Area 2		Area 3		All areas	
	Average value	Per cent of total assets	Average value	Per cent of total assets	Average value	Per cent of total assets	Average value	Per cent of total assets
Current assets								
Cash	$ 5,458.59	5.0	$ 9,716.35	7.5	$ 6,305.31	6.8	$ 7,926.06	6.7
Government bonds	545.50	.5	1,105.95	.9	930.81	1.0	909.87	.7
Accounts receivable—patrons	6,581.84	5.9	9,921.24	7.6	12,448.89	13.4	9,269.09	7.8
Less reserve for bad debts	199.46	.2	317.40	.2	286.05	.3	276.91	.2
Net accounts receivable	$ 6,382.38	5.7	$ 9,603.84	7.4	$12,162.84	13.1	$ 8,992.18	7.6
Advances	$ 261.57	.2	$ 115.15	.1	....	....	$ 143.11	.1
Accounts receivable commission companies	21,028.29	19.1	10,840.76	8.3	12,213.58	13.2	14,143.19	11.9
Notes receivable	1,995.32	1.8	1,078.54	.8	4.32	*	1,202.61	1.0
Inventory—grain	32,048.54	29.1	43,262.65	33.3	17,957.50	19.4	36,188.47	30.5
Inventory—merchandise	7,322.15	6.6	15,642.35	12.0	12,442.97	10.7	12,644.88	10.7
Other current assets	283.53	.3	403.75	.3	13.61	*	310.73	.3
Total current assets	$75,325.87	68.3	$ 91,769.34	70.6	$62,030.94	66.9	$ 82,461.10	69.5
Investments								
Other cooperatives	$ 7,079.41	6.4	$ 4,972.08	3.8	$ 78.38	.1	$ 4,906.86	4.1
Other investments	96.45	.1	140.69	.1	217.29	.2	138.28	.1
Total investments	$ 7,175.86	6.5	$ 5,112.77	3.9	$ 295.67	.3	$ 5,045.14	4.2
Fixed assets								
Buildings and equipment	$39,773.89	36.1	$ 49,217.01	37.8	$43,488.18	47.0	$ 45,511.81	38.4
Less reserve for depreciation	12,716.39	11.5	17,028.46	13.1	13,580.28	14.7	15,216.25	12.8
Net buildings and equipment	27,057.51	24.6	32,188.55	24.7	29,907.90	32.3	30,295.56	25.6
Land	229.26	.2	476.04	.4	263.24	.3	370.09	.3
Total fixed assets	$27,286.77	24.8	$ 32,654.59	25.1	$30,171.14	32.6	$ 30,665.65	25.9
Other assets								
Prepaid expenses	394.54	.3	399.28	.3	148.04	.2	361.52	.3
Other	57.97	.1	165.05	.1	....	....	108.58	.1
Total other assets	452.51	.4	564.33	.2	148.04	.2	470.10	.4
TOTAL ALL ASSETS	$10,241.01	100.0	$130,111.03	100.0	$92,645.79	100.0	$118,641.99	100.0

* Less than .05 per cent.

Financial Structure

Cooperative associations are constantly faced with the problems of adequate financing and the maintenance of desirable relationships between the various items on the balance sheet. These problems become particularly acute during the transition from a relatively high to a lower price level.

Assets

The net capital invested in cooperative elevators in Minnesota based on data obtained from 80 associations averaged $118,642 at the end of the 1947-48 fiscal year (table 7).

The total capital of individual associations ranged from less than $50,000 to more than $300,000 with the most usual amounts between $50,000 and $100,000 (table 8).

Invested capital requirements are influenced greatly by the annual volume

Table 8. Total Assets of 256 Minnesota Cooperative Elevator Associations, 1948

Assets	Area 1	Area 2	Area 3	All areas
	per cent of all associations			
Less than $50,000	15.3	8.6	21.6	12.5
$ 50,000-$ 99,999	35.9	39.7	54.1	40.7
100,000- 149,999	25.6	24.8	10.8	23.0
150,000- 199,999	10.3	10.6	2.7	9.4
200,000- 249,999	9.0	3.6	0	4.7
250,000- 299,999	1.3	9.9	10.8	7.4
300,000 and over	2.6	2.8	0	2.3
Total	100.0	100.0	100.0	100.0

Table 9. Relation Between Value of Sales and Total Amount of Capital Required

Volume of sales	Total assets
Less than $400,000	$ 53,836
$ 400,000-$ 799,999	92,452
800,000- 1,199,999	121,781
1,200,000- 1,599,999	206,715
1,600,000 and above	244,457

of business. As the dollar volume of sales increased from less than $400,000 to more than $1,600,000, the total invested capital increased from about $54,000 to more than $244,000 (table 9).

Operating Capital

The operating capital of the 256 Minnesota cooperative elevator associations, including cash, receivables, inventories, and other current items, represented 70 per cent of the total capital requirements, or $82,461 per association. It averaged highest in Area 2, although the proportion that current assets were of total assets varied only slightly among areas.

Cash—Of the current assets, cash averaged almost $8,000, constituting 6.7 per cent of the total assets and about 10 per cent of the current assets. This item, however, varies widely among associations. In some cases it represents only the cash on hand inasmuch as practically all funds are on deposit with the terminal agency. In others bank overdrafts and outstanding checks exceed the cash on deposit in banks. The amount of cash on deposit in banks for those associations which had a net cash position varied from a low of $648 to a high of $91,055.

ACCOUNTS RECEIVABLE—PATRONS

Accounts receivable from patrons which mainly represent credit sales of merchandise averaged $8,992, or 11 per cent of current assets. Ten per cent of the associations, however, had outstanding accounts of $16,000 or more (table 10). In the southeast area where merchandise sales constitute a higher proportion of total sales than in other areas, almost one fourth of the associations had accounts receivable of $16,000

Table 10. Patrons' Accounts Receivable

Patrons' accounts receivable	Area 1	Area 2	Area 3	All areas
	per cent of 256 associations			
Less than $2,000	21.8	14.2	0	14.5
$ 2,000-$ 5,999	33.3	35.5	32.4	34.4
6,000- 9,999	37.2	29.8	10.8	29.3
10,000- 15,999	2.6	11.3	32.4	11.7
16,000- 27,999	3.8	5.0	13.6	5.8
28,000- 39,999	0	1.4	10.8	2.3
40,000 and over	1.3	2.8	0	2.0
Total	100.0	100.0	100.0	100.0

or more. In this connection, it should be noted that only 14 associations set up a reserve for bad debts. This means that no provision is made for recognizing in advance the existence of a serious bad-debt situation which frequently prevails during a period of declining producer incomes.

Wide variations also exist among the associations regarding the proportion accounts receivable are of the total current assets. For all areas, accounts receivable of about one fifth of the associations represented 20 per cent or more of the current assets. The outstanding accounts of more than one half of the associations in Area 3 were 20 or more per cent of the current assets (table 11).

The extension of credit by cooperative associations to the purchasers of merchandise, and particularly the overextension of credit with accompanying difficulty of maintaining collections, constitutes one of the most serious problems of financial management of many associations. While the problem exists at all times, it always becomes more difficult when farm prices decline because requests for credit mount rapidly then. The status of cooperative elevator associations in this respect is fairly well revealed in table 12 which shows the days sales outstanding in receivables. Almost all associations aim to limit credit to a 30-day maximum.

Table 11. Proportion Patrons' Accounts Receivable Are of Total Current Assets

Proportion of current assets	Area 1	Area 2	Area 3	All areas
	per cent of 256 associations			
Less than 2.5	21.7	12.0	...	13.2
2.5- 4.9	14.1	12.8	...	11.4
5.0- 9.9	16.7	29.8	10.8	23.1
10.0-19.9	30.8	29.8	35.2	30.9
20.0-29.9	11.6	12.8	32.4	15.2
30.0 and over	5.1	2.8	21.6	6.2
Total	100.0	100.0	100.0	100.0

Table 12. Days Sales Outstanding in Patrons' Accounts Receivable

Days sales outstanding in receivables	Per cent of 256 elevators
Less than 10.0	13.1
10-29	44.4
30-49	21.0
50-69	2.8
70-89	7.9
90 and over	10.8
Total	100.0

In the case of almost half of the associations, however, the days sales outstanding in receivables exceeded 30 days, and in 11 per cent of the associations the figure was 90 days and over.

Too much emphasis cannot be given to the recommendation that the board of directors establish and maintain a strict credit policy if serious difficulty is to be avoided. Whatever the policy, it should be defined by the board and the manager given the responsibility of administering it. A helpful procedure in providing information on the status of accounts receivable is the aging of these accounts at periodic intervals. This is being done annually by about one half of the 80 associations included in the study. Many of the associations which have quarterly or semi-annual audits age the accounts as frequently.

ACCOUNTS RECEIVABLE—COMMISSION COMPANIES

The status of associations regarding their financial relations with commission companies varies widely not only among individual associations but also during the season for the same association. At the end of the fiscal year, some associations are debtors of commission companies and some are creditors, while a few are neither. Of the associations surveyed, 49 had accounts receivable from commission companies. For these associations, the accounts averaged almost $20,000, ranging from a low of about $200 to a high of $180,000. If all elevators are included in the calculation, the average is reduced to $12,213 which represents 17 per cent of the total curent assets.

INVENTORIES

Inventories of grain of $36,188 constituted 44 per cent of current assets. Almost 38 per cent of the grain inventory is grain owned by holders of storage tickets. Inventories of merchandise averaged $12,645 or about one fourth of the combined inventories of grain and merchandise.

Investments

Investments of cooperative elevator associations are confined primarily to those in other cooperative associations, the major portion of which represents preferred stock in the Farmers Union Grain Terminal Association.

Fixed Assets

Of the total capital required by elevator associations, an average of 26 per cent was used for fixed assets in the form of land, buildings, and equipment. The original capital investment in these items was $45,511 per association but about one third of this has been depreciated, leaving a net value of $30,295.

All associations set up a reserve for depreciation. The reserve amounted to less than 20 per cent of the original value of fixed assets in the case of one sixth of the associations but exceeded 50 per cent in about one sixth of the associations. The average for all was 33 per cent (table 13).

Table 13. Proportion Reserve for Depreciation Is of Original Cost of Fixed Assets

Per cent reserve is of original cost	Per cent of 256 elevators
Less than 10	3.2
10.0-19.9	13.2
20.0-20.9	24.0
30.0-30.9	17.3
40.0-49.9	24.9
50.0-59.9	11.3
60.0 and over	6.1
Total	100.0

The reserve for depreciation is a valuation account used to maintain the value of capital invested in fixed assets. If it is to serve the function of protecting the assets against dissipation, the offsetting funds should be used only to finance current or fixed assets, to reduce existing liabilities, to retire capital, or to set up a special depreciation fund. The latter may be invested in government bonds or other interest-bearing securities and may be used to finance replacements as they are needed.

It should be emphasized that the fund should not be used for merchandising purposes as such use represents a liquidation of the investment, and when replacements are needed, the association will be forced to borrow funds or sell more stock.

SOURCES OF CAPITAL

Creditors supplied 42 per cent of the capital of the associations. Included in this proportion is that representing patronage dividends payable which amounts to 5.2 per cent of the assets (table 14). Inasmuch as most of the patrons are members, the amount of this item can be considered as capital provided by members, bringing the total amount of capital provided by members and patrons to an average of 63.1 per cent of the total assets. The proportion varies from an average of 59.4 per cent in Area 1 to 77.8 per cent in Area 3.

Table 14. Liabilities and Net Worth Values of 256 Minnesota Cooperative Elevator Associations, 1948

	Area 1		Area 2		Area 3		All areas	
	Average value	Per cent of total value	Average value	Per cent of total value	Average value	Per cent of total value	Average value	Per cent of total value
Current liabilities								
Bank overdrafts	$ 18,568.65	16.9	$ 11,255.05	8.6	$ 6,354.34	6.9	$ 12,775.12	10.8
Accounts payable—patrons	12.97	*	382.53	.3	8.56	*	215.88	.2
Accounts payable—commission companies	4,541.28	4.1	13,827.36	10.6	6,368.12	6.9	9,919.91	8.3
Accounts payable—general	265.06	.3	604.96	.5	722.57	.8	518.40	.4
Interest	272.82	.2	592.37	.5	1,086.91	1.2	566.48	.5
Notes payable	461.54	.4	83.36	.1	3,470.27	3.7	688.10	.6
Storage liabilities	17,872.47	16.2	15,015.25	11.5	1,348.55	1.4	13,910.54	11.7
Patronage dividends payable	5,121.24	4.7	8,024.13	6.2	981.84	1.1	6,121.82	5.2
Other current liabilities	1,120.61	1.0	1,357.21	1.0	1,237.78	1.3	1,267.86	1.1
Total current liabilities	$ 48,236.64	43.8	$ 51,142.22	39.3	$21,578.94	23.3	$ 45,984.11	38.8
Long-term liabilities								
Notes and mortgages payable	1,687.18	1.5	4,244.15	3.3	....	.....	2,851.66	2.4
Other long-term liabilities	....	.....	1,909.07	1.4	....	.....	1,051.48	.9
Total long-term liabilities	1,687.18	1.5	6,153.22	4.7	....	.....	3,903.14	3.3
Total liabilities	$ 49,923.82	45.3	$ 57,295.44	44.0	$21,578.94	23.3	$ 49,887.25	42.1
Net worth								
Preferred stock	$ 4,174.67	3.8	$ 1,727.31	1.3	....	.....	$ 2,223.34	1.9
Common stock	11,821.49	10.7	16,799.40	12.9	26,522.81	28.6	16,688.03	14.1
Stock credits	4,304.80	3.9	3,108.07	2.4	11,295.00	12.2	4,655.97	3.9
Patrons equity reserve	19,888.21	18.1	33,575.80	25.8	23,458.64	25.3	27,943.12	23.5
Statutory reserve	1,414.94	1.3	....	.....	....	.....	431.11	.4
Other net worth reserves	1,487.30	.4	2,084.48	1.5	143.65	.2	1,317.32	1.1
Certificates of equity	....	.....	199.14	.2	- 143.24	.2	130.39	.1
Surplus	13,056.93	11.8	13,763.97	10.6	8,322.77	8.9	12,762.12	10.7
Undistributed net margins	5,168.85	4.7	1,557.42	1.2	1,180.74	1.3	2,603.34	2.2
Total net worth	$ 60,317.19	54.7	$ 72,815.59	56.0	$71,066.85	76.7	$ 68,754.74	57.9
TOTAL LIABILITIES AND NET WORTH	$110,241.01	100.0	$130,111.03	100.0	$92,645.79	100.0	$118,641.99	100.0

* Less than .05 per cent.

Capital Supplied by Creditors

Only a small proportion of the liabilities on the average represented formal borrowing. The balance sheets of six of the associations surveyed, however, included short-term notes payable, ranging from around $100 to $30,000. Eighteen of the associations obtained funds through long-term paper, the amounts remaining to be paid at the end of 1947-48 ranging up to $75,000. Only five of the associations were being financed in part by the St. Paul Bank for Cooperatives. While bank overdrafts do not represent formal borrowing, they do indicate a temporary indebtedness to banks. This item amounted to 11 per cent of the total assets.

Only a small portion of the total capital, .6 per cent, was obtained from patrons and on open accounts with the suppliers of merchandise. Funds supplied by commission companies, however, constituted 8 per cent of the total assets. Of the 80 associations, 37 owed commission companies an average of $21,500 with individual associations owing from $350 to about $90,000. Many associations depend almost entirely on commission firms for financing their current operations.

Capital Provided by Members

Members and patrons have furnished the largest proportion of the capital of these associations through the purchase of capital stock and the creation of net worth reserves and surplus. The items which comprise net worth average almost $69,000 and vary for individual associations from about $5,000 to almost $213,000. The net worth of 70 per cent of the associations was less than $75,000 (table 15).

Capital stock, including both common and preferred, and capital stock credits provided 20 per cent of the capital or approximately $23,567. The proportion averaged 41 per cent in Area 3, compared with 17 per cent in Area 2. In about one fourth of the associations, capital stock outstanding amounted to less than $10,000 but 10 per cent had outstanding stock of $40,000 or more. Two associations revolve common stock.

Table 15. Net Worth of 256 Minnesota Cooperative Elevator Associations

Amount of net worth	Per cent of all associations
Less than $25,000	7.8
$ 25,000-$ 49,999	34.4
50,000- 74,999	28.1
75,000- 99,999	7.8
100,000- 124,000	12.1
125,000- 149,000	.8
150,000 and over	9.0
Total	100.0

Eight associations had issued preferred stock which does not provide voting privileges but which gives preferred claims to dividends and assets. Often, preferred stock is used in lieu of a patrons' equity reserve with provisions for revolving the same. Only eight associations had issued certificates of equity in the form of certificates of interest to non-member non-producers. The bylaws of other associations, however, provide for issuing such certificates to these patrons and to members whose stock is being retired. Patrons' deferred dividends which are shown as patrons' equity reserve on the balance sheet amount to about 23 per cent of the total assets or approximately two fifths of the total net worth. Sixty-two out of the 80 associations maintain a revolving plan of financing whereby savings are placed in a reserve to be distributed at a later date. The length of the revolving plan is definite for only a few associations and in no case is it specified in the bylaws.

Associations are required by law to build up a statutory reserve or permanent surplus until the amount therein is equal to 50 per cent of paid-in capital. Many associations are allocating the amounts therein to the individual patrons' accounts.

The unallocated surplus of $12,762 was 11 per cent of the total assets. In many associations this item has changed but slightly during recent years because all savings are distributed as interest on capital stock, stock credits, cash dividends, or allocated to the patrons in some reserve account. Some associations, however, make substantial additions to general surplus whenever margins permit. For example, three of the 80 associations placed all of the 1947-48 savings in general surplus and 21 associations, after the declaration of patronage dividends and interest on capital stock, placed the remainder in surplus. Any association which hopes to maintain an income tax exemption status should not distribute margins to an unallocated surplus account.

Financial Relationships

A strong financial condition of elevator associations requires that certain minimum standard relationships be maintained between various balance sheet items. These relations are usually expressed as financial ratios of which the most commonly used is the current ratio or the ratio of current assets to current liabilities. This ratio indicates the current solvency of the business. To be solvent from this point of view, an association should have current assets at least equal to current liabilities. Since current assets are required for purposes other than the payment of current debts, a current ratio of two to one is usually recommended. It will be observed from table 16 that 8 per cent of the associations did not have sufficient liquid assets to meet current creditor claims in full on demand (table 16). In contrast, 26 per cent of the associations had ratios of five to one or better. The weighted average was 2.1 to 1 or about the same as the standard.

The ratio of net worth to total liabilities indicates to what extent the association is financed by owner capital

Table 16. Ratio of Current Assets to Current Liabilities*

Size of ratio	Per cent of 256 elevators
Less than 1.0	7.8
1.00-1.99	41.0
2.00-2.99	18.3
3.00-3.99	7.0
4.00-5.99	10.3
6.00 and over	15.6
Total	100.0

* In the calculation of the current and other ratios, patronage dividends payable have been subtracted from current liabilities and added to net worth.

and to what extent by borrowed capital. A high ratio reveals a favorable financial condition in that the association is financed mainly by the owners and the debt burden is low in consequence. For all elevators, the ratio averaged 1.9 to 1 compared to a desirable minimum standard of 1.5 to 1 (table 17). However, 29 per cent of the associations had a ratio of less than 1.00. In these associations, the members and patrons actually own less than 50 per cent of the capital. In such cases the association membership should give serious consideration to increasing the amount of owner capital either by sale of additional stock or a retention of a larger proportion of the annual savings.

A common rule of sound finance is that fixed assets should be financed by owner capital which means that the ratio of net worth to fixed assets should be at least one to one. For all associations this ratio averaged 2.4 (table 17).

Table 17. Ratio of Net Worth to Total Debt and to Fixed Assets

Size of ratio	Ratio of net worth to: Total debt	Fixed assets
	per cent of 256 elevators	
Less than 1.00	28.9	7.8
1.00-1.99	20.3	18.8
2.00-2.99	16.0	30.9
3.00-4.99	10.2	23.7
5.00 and over	24.6	18.8
Total	100.0	100.0

Only 8 per cent of the elevators failed to meet the standard of one to one. About two fifths of the associations had a ratio of three to one or larger.

Another ratio of importance is that of sales to fixed assets. This ratio is indicative of the use made of fixed assets. An association with a low ratio is presumably obliged to spread the fixed expenses resulting from the use of the fixed investment, such as depreciation, interest, insurance, and taxes, over a relatively smaller volume of business. Consequently, it may be at a disadvantage from a competitive standpoint. This ratio averaged 18.1. The ratio was less than 10 for 11 per cent of the associations and 25 or more for 22 per cent (table 18).

The averages and desirable standards for the various ratios are given in table 19.

A comparison of the ratios of each association with the minimum standards indicates that a majority of the associations were in excellent financial condition at the end of the 1947-48 fiscal year (table 20). Forty per cent of the associations equalled or exceeded the minimum standards of four ratios. Only a few were below the minimum standards of all ratios. These associations and most of those with only one ratio above standard were facing difficult financial problems which may in time require reorganization or drastic adjustments.

Table 18. Ratio of Total Sales to Fixed Assets

Size of ratio	Per cent of 256 associations
Less than 10.0	10.9
10.0-14.9	19.9
15.0-19.9	20.7
20.0-24.9	26.6
25.0-29.9	12.9
30.0 and over	9.0
Total	100.0

Table 19. Average and Minimum Standards for the Most Important Financial and Operating Ratios

Ratio	Average	Minimum standard
Current assets to current liabilities	2.1	2.0
Net worth to total liabilities	1.8	1.5
Net worth to fixed assets	2.4	1.0
Sales to fixed assets	18.1	18.0

Table 20. Number of Financial Relationships in Which Specified Proportion of Associations Equalled or Excelled

Number of ratios equalled or excelled	Per cent of 256 associations
None	4.7
One	10.2
Two	25.4
Three	19.1
Four	40.6

Financial Operations

Sources of Gross Operating Income

The principal sources of income in elevator operation are the sales of grain and merchandise or supplies and various services such as storage, seed cleaning, and feed grinding. Sales of grain averaged $711,460 for the fiscal year 1947-48 or 86 per cent of combined sales of grain and merchandise (table 21).

The importance of grain sales relative to merchandise sales varies widely from area to area. Grain sales averaged 92 per cent of the total sales in Area 1 compared with 72 per cent in Area 3. Grain sales in practically all of the associations in Area 1 exceeded 80 per cent of the total sales, whereas in Area 3 less than one half of the associations had grain sales exceeding 70 per cent of the total (table 22).

Table 21. Sales, Cost of Sales, and Gross Margins of 256 Minnesota Cooperative Elevator Associations, 1947-48

	Area 1		Area 2		Area 3		All areas	
	Average value	Per cent of total sales	Average value	Per cent of total sales	Average value	Per cent of total sales	Average value	Per cent of total sales
Sales								
Grain	$698,748.07	92.4	$788,351.56	85.4	$445,242.98	72.0	$711,460.58	85.9
Merchandise	57,842.71	7.6	134,220.26	14.6	172,925.50	28.0	116,543.08	14.1
Total sales	$756,590.78	100.0	$922,571.82	100.0	$618,168.48	100.0	$828,003.66	100.0
Cost of sales								
Grain	$670,919.32	......	$762,798.07	......	$428,075.59	......	$686,425.89	......
Merchandise	51,769.52	......	119,695.80	......	154,847.10	......	104,079.97	......
Total cost of sales	$722,688.84	95.5	$882,493.87	95.7	$582,922.69	94.3	$790,505.86	95.5
Gross margin from sales								
Grain	$ 27,828.75	......	$ 25,553.49	......	$ 17,167.39	......	$ 25,034.69	......
Merchandise	6,073.19	......	14,524.46	......	18,078.40	......	12,463.11	......
Total gross margin from sales	$ 33,901.94	4.5	$ 40,077.95	4.3	$ 35,245.79	5.7	$ 37,497.80	4.5
Other operating income	2,507.91	......	3,892.14	......	5,081.04	......	3,642.21	......
Total gross margin	$ 36,409.83	......	$ 43,970.09	......	$ 40,326.83	......	$ 41,140.01	......

Table 22. Proportion That Grain Sales Are of Total Sales

Per cent grain sales are of total sales	Area 1	Area 2	Area 3	All areas
	per cent of 256 associations			
90 and more	87.2	44.0	10.8	52.3
80 and more	94.9	75.9	45.9	77.3
70 and more	94.9	90.0	45.9	85.1
60 and more	94.9	100.0	56.7	94.0
50 and more	98.8	......	100.0	99.6
40 and more	100.0	......	......	100.0

SALES OF GRAIN

For all areas, the combined sales of corn and flaxseed averaged one half of the total sales of grain (table 23). Sales of wheat exceeded those of any other grains in Area 1 but were closely followed by sales of barley. Wheat, barley, and flaxseed together accounted for four fifths of the total sales of grain in this area. In contrast, wheat sales represented only a minor proportion of the total in Area 2. Sales of corn were more than one third of the total. The combined sales of corn, flaxseed, and soybeans constituted four fifths of the total in this area. Sales of corn exceeded those of other grains in Area 3, being one fourth of the total.

SALES OF MERCHANDISE

Feed is the most important item of merchandise, the sales of which averaged almost two thirds of the total sales of all merchandise in Area 3 and more than one third in Area 1 (table 24). Average sales of coal and seed exceeded those of any other item except feed in all areas.

Operating Margins

Usually at the time of delivery of grain, the patrons, both members and

Table 23. Average Sales of Various Grains, 256 Minnesota Cooperative Elevator Associations, 1947-48

	Area 1		Area 2		Area 3		All areas	
	Total	Per cent of total	Total	Per cent of total	Total	Per cent of total	Total	Per cent of total
Wheat	$205,032	29.3	$ 20,224	2.6	$ 27,751	6.2	$ 77,620	10.9
Oats	92,562	13.3	72,474	9.2	65,537	14.7	77,592	10.9
Barley	194,551	27.9	63,131	8.0	67,358	15.1	103,784	14.6
Corn	25,156	3.6	282,771	35.9	114,434	25.7	179,949	25.3
Rye	7,406	1.1	6,103	.8	7,929	1.8	6,764	.9
Flaxseed	153,706	22.0	215,002	27.2	81,673	18.4	177,056	24.9
Soybeans	4,714	.7	127,832	16.2	78,999	17.7	83,262	11.7
Miscellaneous	15,621	2.1	815	.1	1,562	.4	5,434	.8
All grains	$698,748	100.0	$788,352	100.0	$445,243	100.0	$711,461	100.0

Table 24. Average Sales of Various Items of Merchandise, 256 Minnesota Cooperative Elevator Associations, 1947-48

	Area 1		Area 2		Area 3		All areas	
	Total	Per cent of total	Total	Per cent of total	Total	Per cent of total	Total	Per cent of total
Feed and flour	$21,895	37.8	$ 63,462	47.2	$110,268	63.7	$ 57,563	49.4
Coal	12,854	22.3	23,700	17.7	16,357	9.5	19,334	16.6
Fertilizer	3,901	6.7	4,723	3.5	9,559	5.5	5,172	4.4
Seed	7,152	12.4	16,470	12.3	22,407	13.0	14,489	12.4
Twine	5,511	9.5	2,387	1.8	5,267	3.0	3,755	3.2
Petroleum products	3,592	6.2	4,792	3.6	35	......	3,738	3.2
Lumber	......	......	7,229	5.4	153	.1	4,004	3.4
Machinery	1,303	2.2	1,792	1.3	2,266	1.3	1,711	1.5
Miscellaneous	1,635	2.9	9,665	7.2	6,614	3.9	6,777	5.9
All merchandise	$57,843	100.0	$134,220	100.0	$172,926	100.0	$116,543	100.0

non-members, are paid the price currently available, grade and quality considered less an amount per bushel as an operating margin. This buying margin may be considered as the initial charge for services and risks because the adequacy for this purpose is not fully known until the end of the marketing season when all realized margins and costs are definitely determined.

The size of the margin as determined by the manager depends mainly on the estimated costs of handling the particular grain in question, the intensity of competition within the locality, and the variability of grain prices. In practically every locality, there is a prevailing margin which may vary from year to year and during the season. Usually, the association which currently is obtaining the larger proportion of the available grain supply is in a position to more or less lead in the determination of the prevailing margin.

The variations from this tendency are frequent, however, and are due mainly to the differences in the competency of the managers and to the type of competing elevators in the community. Associations with high costs and those located in communities where competition is intense are constantly faced with the problem of adjusting costs to the prevailing margin.

The actual realization of the attempted buying margin depends in part on the judgment and ability of the manager because it is partly influenced by factors within his control such as accuracy in weighing and grading shrinkage, knowledge of quality premiums and discounts, mixing practices and market information. It also depends on conditions which are more or less speculative in nature and which cannot be forecasted accurately, such as day-to-day fluctuations in prices variation in protein premiums, and cash prices relative to future prices. These conditions do not present as serious a problem to managers who sell mainly to arrive or on track as they do to those who consign grain for sale at the terminal market. It is the daily variation in protein premiums and cash premiums which often renders hedging inadequate in the realization of the attempted buying margin.

The problems connected with the determination of the margin and its realization in the merchandising of supplies probably are less difficult than in the merchandising of grain. Competition again plays an important part in the determination of the selling margin. The realization of the margin however, is not attended with so many risks, assuming adequate judgment has been exercised in purchasing saleable supplies and in keeping inventories at proper levels, in order to avoid decline in inventory valuations because of marked price changes.

REALIZED MARGINS

The margins actually realized in merchandising of grain vary widely among elevators (table 25). For example, 10

Table 25. Gross Margins Per Bushel of Grain Sales

Gross margin	Wheat	Barley	Soybeans
cents per bushel	per cent of 256 associations		
Loss	9.9	8.1	7.0
Less than 5.0	5.8	11.3	20.7
5.0- 9.9	23.3	35.1	27.2
10.0-14.9	26.0	32.3	14.7
15.0-19.9	13.9	9.6	16.3
20.0 and over	21.1	3.6	14.1
Total	100.0	100.0	100.0

Gross margin	Corn	Oats
cents per bushel	per cent of 256 associations	
Loss	15.0	6.7
Less than 2.0	10.8	23.0
2.0-3.9	13.1	19.9
4.0-5.9	26.3	19.2
6.0-7.9	15.6	19.1
8.0 and over	19.2	12.1
Total	100.0	100.0

Gross margin	Flaxseed
cents per bushel	per cent of 256 associations
Loss	0
Less than 10.0	9.5
10.0-19.9	23.8
20.0-29.9	28.2
30.0-39.9	25.8
40.0-49.9	12.7
Total	100.0

Table 26. Gross Margin Per Dollar of Sales

Grain: Gross margin	Per cent of 256 associations	Merchandise: Gross margin	Per cent of 256 associations
cents per dollar of sales		cents per dollar of sales	
Less than 2.0	14.1	Less than 6.0	4.8
2.0-2.9	22.6	6.0- 7.9	17.1
3.0-3.9	25.8	8.0- 9.9	25.4
4.0-4.9	26.6	10.0-11.9	34.4
5.0-5.9	3.9	12.0-13.9	15.1
6.0 and over	7.0	14.0 and over	3.2
Total	100.0	Total	100.0

per cent of the associations reported an actual loss in handling wheat, while 21 per cent realized a margin of 20 cents or more per bushel. Of the elevators handling corn, 15 per cent reported a loss and 19 per cent obtained a margin of eight cents or more per bushel. Similar variations exist for the other grains, the largest variation occurring in the case of flaxseed.

When the gross margin is expressed as cents per dollar of sales of all grains, 14 per cent of the elevators realized less than two cents and 11 per cent, five cents or more (table 26). For individual grains, the average gross margin per dollar of sales ranged from 2.2 cents for soybeans to 4.7 cents for wheat.

The variation in the gross margin realized on the dollar sales of merchandise is also wide. About 5 per cent of the elevators obtained less than six cents and 18 per cent obtained 12 cents or more per dollar of sales. For individual items, the gross margin averaged from eight cents for fertilizer to 15 cents for coal.

SOURCE OF REALIZED MARGINS

The combined gross margin realized on grain and merchandise sales and service enterprise averaged $41,140 (table 21). The proportions contributed by the three departments to this total were: grain, 59 per cent; merchandise, 33 per cent; and services, 8 per cent (table 27). However, the proportions differ markedly among the areas.

Table 27. Proportions That Departments' Gross Margins Were of Total Gross Margins

Department	Area 1	Area 2	Area 3	All areas
	per cent of 256 associations			
Grain	76	58	43	59
Merchandise	17	33	45	33
Services	7	9	12	8
Total	100	100	100	100

Table 28. Gross Margins from Sales of Various Grains, 256 Minnesota Cooperative Elevator Associations, 1947-48

	Area 1		Area 2		Area 3		All areas	
	Total	Per cent of total	Total	Per cent of total	Total	Per cent of total	Total	Per cent of total
Wheat	$ 9,756	35.1	$ 1,109	4.3	$ 665	3.8	$ 3,681	14.7
Oats	2,683	9.6	2,792	10.9	3,222	18.8	2,821	11.3
Barley	8,509	30.7	2,729	10.7	2,522	14.7	4,460	17.8
Corn	648	2.3	6,509	25.5	3,601	21.0	4,303	17.2
Rye	347	1.3	205	.8	491	2.9	290	1.2
Flaxseed	4,798	17.1	9,383	36.8	3,172	18.5	7,088	28.3
Soybeans	37	.1	2,498	9.7	3,033	17.6	1,825	7.3
Miscellaneous	1,051	3.8	328	1.3	459	2.7	567	2.2
All grains	$27,829	100.0	$25,553	100.0	$17,167	100.0	$25,035	100.0

GROSS MARGIN FROM GRAIN SALES

For all areas the gross margin realized from sales of flaxseed averaged more than one fourth of the total gross margin from sales of all grain (table 28). The margin from sales of wheat and barley averaged more than two thirds of the total in Area 1 and corn and flaxseed averaged slightly less than two thirds of the total in Area 2. With the exception of wheat and rye, the gross margins received from the sales of the various grains differed much less in Area 3 than in either of the other areas.

GROSS MARGIN FROM MERCHANDISE SALES

The average gross margin realized from sale of feed accounted for at least one third of the total gross margin from sales of merchandise in all areas and in Area 3 it averaged almost three fifths of the total (table 29). For all areas the margin from sales of feed and coal combined constituted about two thirds of the total.

GROSS MARGIN FROM SERVICES

In each area the income from services contributed a significant proportion to the total gross margin and in the case of some associations it meant the difference between profit and loss.

The variation in the contribution that income from feed grinding, storage, and other services made to the total gross margin is shown in table 30. For example, this income constituted less than 7.5 per cent of the total gross margin for about one half of the associations in Area 2 and for only about one seventh of the associations in Area 3.

Table 29. Gross Margin from Sales of Various Items of Merchandise, 256 Minnesota Cooperative Elevator Associations, 1947-48

	Area 1		Area 2		Area 3		All areas	
	Total	Per cent of total	Total	Per cent of total	Total	Per cent of total	Total	Per cent of total
Flour and feed	$2,070	34.0	$ 5,479	37.7	$10,380	57.4	$ 5,149	41.4
Coal	1,716	28.2	3,715	25.6	2,699	14.9	2,959	23.7
Fertilizer	353	5.8	344	2.4	826	4.6	417	3.3
Seed	707	11.7	1,541	10.6	2,182	12.1	1,379	11.1
Twine	417	6.9	227	1.6	402	2.2	310	2.5
Petroleum products	400	6.6	815	5.6	6	*	571	4.6
Lumber	*	*	1,314	9.0	42	.2	730	5.9
Machinery	254	4.2	395	2.7	548	3.0	374	3.0
Miscellaneous	156	2.6	694	4.8	993	5.6	574	4.5
All merchandise	$6,073	100.0	$14,524	100.0	$18,078	100.0	$12,463	100.0

* Less than .05 per cent.

Table 30. Proportion That Income from Services Is of the Total Gross Margin

Income from services	Area 1	Area 2	Area 3	All areas
per cent of total gross margin		per cent of 256 associations		
Less than 2.5	16.7	18.4	10.8	16.8
2.5- 7.4	21.8	30.5	2.7	23.8
7.5-12.4	33.3	26.2	43.2	30.9
12.5-17.4	12.8	9.9	10.8	10.9
17.5-24.9	10.3	8.5	32.5	12.5
25.0 and over	5.1	6.5		5.1
Total	100.0	100.0	100.0	100.0

Table 31. Operating Expenses of 256 Minnesota Cooperative Elevator Associations, 1947-48

	Area 1		Area 2		Area 3		All areas	
	Average	Per cent of total	Average	Per cent of total	Average	Per cent of total	Average	Per cent of total
Merchandising expense								
Labor and management	$ 8,177.66	50.5	$11,735.85	51.7	$12,860.84	56.9	$10,814.31	52.2
Elevator supplies	381.12	2.4	466.78	2.1	417.61	1.9	433.57	2.1
Repairs	797.94	4.9	875.68	3.8	517.44	2.3	800.21	3.9
Truck expense	148.83	0.9	586.61	2.6	468.31	2.1	436.13	2.1
Freight and draygage	83.12	0.5	127.83	0.6	79.52	0.3	107.22	0.5
Heat, light, and power	728.76	4.5	1,133.08	5.0	1,291.04	5.7	1,032.72	5.0
Rent	46.32	0.3	93.34	0.4	97.40	0.4	79.61	0.4
Advertising	320.48	2.0	548.37	2.4	375.71	1.7	453.98	2.2
Miscellaneous	93.42	0.6	49.54	0.2	3.24	0.01	56.21	0.3
Total merchandise expense	$10,777.65	66.6	$15,617.08	68.8	$16,111.11	71.3	$14,213.96	68.7
Administrative and general expense								
Office salaries	$ 147.09	0.9	$ 60.25	0.3	$ 593.50	2.6	$ 163.78	0.8
Directors fees and expense	204.30	1.3	231.52	1.0	315.19	1.4	235.32	1.1
Office supplies	328.74	2.0	416.60	1.8	372.70	1.6	383.48	1.9
License, inspection, and bonds	133.16	0.8	216.75	1.0	81.34	0.4	171.71	0.8
Audit	338.31	2.1	306.36	1.4	220.71	1.0	303.71	1.5
Telephone and telegraph	176.08	1.1	270.96	1.2	225.99	1.0	235.55	1.1
Local taxes	812.82	5.0	1,126.44	5.0	874.17	3.9	994.42	4.8
Payroll taxes	106.69	0.7	226.60	1.0	221.89	1.0	189.39	0.9
Insurance	1,251.66	7.7	1,551.07	6.8	1,172.62	5.2	1,405.15	6.8
Depreciation	1,422.24	8.8	1,972.36	8.7	1,804.53	8.0	1,780.49	8.6
Bad debts	79.56	0.5	114.38	0.5	123.97	0.6	105.15	0.5
Education allowance			8.10	*	27.72	0.1	8.47	*
Miscellaneous	408.23	2.5	577.30	2.5	437.19	1.9	505.54	2.5
Total administrative expense	$ 5,408.88	33.4	$ 7,078.69	31.2	$ 6,471.52	28.7	$ 6,482.16	31.3
Total merchandising, administrative, and general expense	$16,186.53	100.0	$22,695.77	100.0	$22,582.63	100.0	$20,696.13	100.0

* Less than .05 per cent.

Operating Expenses

LABOR AND MANAGEMENT

Differences in the operating efficiency of elevator associations depend largely on the variations in the volume of business and in the administration of labor. The importance of successful labor adjustments in elevator operation is evidenced by the fact that labor and management costs made up 52 per cent of all operating expenses. The proportion averaged highest in Area 3 where merchandise sales relative to grain sales were high (table 31).

Efficient utilization of labor depends in large part on the adjustment of the amount of labor hired to the amount needed and its administration. Efficiency in the use of labor is fairly well indicated by the dollar sales per employee. The variation in these sales is marked. About 10 per cent of the associations showed less than $100,000 of sales per employee and 17 per cent showed $300,000 or more (table 32).

A close relationship exists between dollar sales per employee and labor and management costs per $1,000 of sales. In those cases where the dollar sales per employee averaged less than $100,000, labor and management costs constituted $26 per $1,000 of sales. When the sales per employee exceeded $250,000, these costs averaged less than $10 (table 33).

Table 32. Sales per Employee

Sales per employee	Per cent of 256 associations
Less than $100,000	9.8
$100,000-$149,999	14.5
150,000- 199,999	24.2
200,000- 249,999	20.3
250,000- 299,999	14.4
300,000- 399,999	12.5
400,000 and over	4.3
Total	100.0

Table 33. Relationship Between Total Sales per Employee and Labor and Management Costs per $1,000 of Sales, 256 Minnesota Cooperative Elevator Associations, 1947-48

Sales per employee	Labor and management costs per $1,000 of sales
Less than $100,000	$26.22
100,000-149,999	18.75
150,000-199,999	12.41
200,000-249,999	9.46
250,000-299,999	9.18
300,000-499,999	7.90
400,000 and over	7.72

OTHER EXPENSES

Other items of expense which constitute 4 per cent or more of the total operating expenses are heat, light, and power, elevator repairs, local taxes, insurance, and depreciation. These items together constitute 29 per cent of the total operating expenses, depreciation alone accounting for almost 9 per cent.

TOTAL OPERATING EXPENSES

The total operating expense averaged $20,696 or 2.5 per cent of total sales. When the total operating expense is expressed as a per cent of the total value of sales plus service income, the proportions vary from 1.1 to 6.2 per cent. A range from 1.5 to 2.5 per cent includes one half of the associations (table 34).

Some of the variations in the proportion that operating expenses are of total sales and service income are due to the variations in merchandise sales relative to grain sales. In the case of associations whose merchandise sales were less than 5 per cent of total sales, operating expenses averaged 1.9 per cent of total sales. When the merchandise sales were 25 per cent or more, the operating expenses were 4.4 per cent or more (table 35).

Table 34. Proportion That Total Operating Cost Is of Total Sales and Service Income

Operating costs	Per cent of 256 associations
per cent of total sales and service income	
1.00-1.49	9.8
1.50-1.99	32.0
2.00-2.49	18.4
2.50-2.99	10.1
3.00-3.49	7.0
3.50-3.99	6.6
4.00-4.49	5.1
4.50 and over	6.3
Total	100.0

Table 35. Relation Between the Proportion Merchandise Sales Are of Total Sales and Proportion Operating Costs Are of Total Sales, 256 Minnesota Cooperative Elevator Associations, 1947-48

Merchandise sales	Operating costs
per cent of total sales	per cent of total sales
Less than 5.0	1.9
5.0-14.9	2.2
15.0-24.9	3.0
25.0-34.9	4.4
35.0 and over	4.8

Operating Margins

The operating margins or the difference between total gross margin and operating costs averaged $20,443 or practically the same as operating costs. This means the total gross margin was about equally divided among costs and operating margins (table 36).

Table 37. Proportion Operating Margins Are of Total Sales and Service Income

Operating margins	Per cent of 256 associations
per cent of total sales and service income	
Loss	3.1
Less than .50	7.8
.50- .99	8.3
1.00-1.49	11.7
1.50-1.99	14.8
2.00-2.49	13.3
2.5-2.99	12.9
3.0-3.49	5.5
3.5-3.99	10.9
4.0 and over	11.7
Total	100.0

When operating margins are expressed as a per cent of total sales plus service income, it may be observed that the operating margins of almost one fifth of the elevators were less than one per cent of the total sales plus service income. Over one fourth of the elevators, however, had margins of 3 per cent or more of the total sales plus service income (table 37).

RELATION BETWEEN GROSS MARGINS, OPERATING EXPENSES, AND OPERATING MARGINS

Operating margins depend on the realized gross margin and operating

Table 36. Sales, Gross Margin, Expenses, Operating and Net Margins of 256 Minnesota Cooperative Elevator Associations, 1947-48

	Area 1	Area 2	Area 3	All areas
	average	average	average	average
Total sales	$756,590.78	$922,571.82	$618,168.48	$828,003.66
Service income	2,507.91	3,892.14	5,081.04	3,642.21
Total sales and service income	$759,098.69	$926,463.96	$623,249.52	$831,645.87
Gross margin	36,409.83	43,970.09	40,326.83	41,140.01
Operating expenses	16,186.53	22,695.77	22,582.63	20,696.13
Operating margins	$ 20,223.30	$ 21,274.32	$ 17,744.20	$ 20,443.88
Other expenses	1,500.26	1,654.83	2,238.32	1,692.06
	$ 18,723.04	$ 19,619.49	$ 15,505.88	$ 18,751.82
Other income	935.85	1,177.06	679.10	1,031.59
Net margins	$ 19,658.89	$ 20,796.55	$ 16,184.98	$ 19,783.41

Table 38. Gross Margin, Operating Expenses, and Operating Margins, 80 Minnesota Cooperative Elevator Associations, 1947-1948

Gross margin and operating expenses	Number of associations	Operating margins
per cent of total sales and service income		per cent of total sales and service income
Gross margin:		
Less than 5.0	47	1.6
Operating expenses		
Less than 2.5	38	1.8
2.5 and more	9	.8
Gross margin:		
5.0 and more	33	3.5
Operating expenses		
Less than 2.5	12	3.9
2.5 and more	21	3.1

costs. As the gross margin averaged 5 per cent of the total sales plus service income and was equally divided between operating expense and margins, each of these items averaged 2.5 per cent of total sales and service income. Those associations whose operating margins were less than the average of 2.5 per cent had either a gross margin below the average or operating expenses above the average or both. Similarly, those associations whose operating margins were 2.5 or more per cent had either a gross margin above the average or operating expenses less than the average or both.

These relationships are shown in table 38. For example, 47 associations had gross margins of less than 5 per cent of total sales plus service income. The operating expenses of nine associations of this group were 2.5 or more per cent resulting in operating margins which were only .8 per cent of total sales plus service income. Twelve of the 33 associations whose gross margins were 5.0 or more per cent and operating expenses less than 2.5 per cent averaged operating margins of 3.9 per cent. These are the associations which can distribute a substantial dividend to the patrons at the end of the year.

Individual associations whose volume of business is relatively small may be competing with stronger associations whose volume is much above average. If both groups were realizing the same absolute margin, the percentage margin would also be the same. However, the operating expenses of the associations with the smaller volume probably would be a relatively higher proportion of total sales and service income, assuming competency of management to be the same. In consequence, the operating margins of the lower volume associations will be a relatively smaller proportion of the total sales and service income.

Net Margins

The net margins after adjustment for other income and expenses averaged $19,783 and ranged from a loss to over $100,000. One fifth of the associations had net margins of less than $5,000 and almost one tenth of them had $40,000 or more (table 39).

Table 39. Net Margins of Minnesota Cooperative Elevators

Net savings	Area 1	Area 2	Area 3	All areas
		per cent of 256 elevators		
Loss	10.2	5.7	—	6.2
Less than $5,000	15.4	14.9	10.8	14.5
$ 5,000-$ 9,999	25.6	11.3	32.4	18.7
10-000- 19,999	5.1	21.3	53.3	19.5
20,000- 29,999	10.3	17.8	2.7	13.3
30,000- 39,999	24.4	18.5	—	17.6
40,000- 49,999	3.8	3.5	—	3.1
50,000- 59,999	—	3.5	—	2.0
60,000 and over	5.2	3.5	10.8	3.5
Total	100.0	100.0	100.0	100.0

Table 40. Relation Between Volume of Sales and Average Net Margins, 256 Minnesota Cooperative Elevator Associations, 1947-48

Total sales	Average net margins
Less than $400,000	$ 4,561
$ 400,000-$ 799,999	11,433
800,000- 1,199,999	27,684
1,200,000- 1,599,999	37,090
1,600,000 and more	50,735

Associations with the largest volume of business had the largest net margins. Net margins averaged about $4,500 for the group with total sales of less than $400,000 and exceeded $50,000 for the group with sales of $1,600,000 or more (table 40).

Table 41. Distribution of Net Margins of 80 Minnesota Cooperative Elevator Associations

Application of net margins	Amount	Per cent of total
Patronage dividends		
Paid	$ 312,336.09	15.1
Currently payable	290,701.09	14.0
Patrons' equity reserve*	922,407.99	44.6
Total	$1,525,445.17	73.7
Educational fund	5,321.50	.2
Capital stock and stock credits	135,126.90	6.5
Surplus†	200,320.76	9.7
Interest on stock	51,925.67	2.5
Other‡	18,292.24	.9
Undistributed margins	133,991.29	6.5
Total	$2,070,423.72	100.0

* Includes statutory reserve.
† Before deduction for income taxes.
‡ Includes a building fund of $15,500.

DISTRIBUTION OF MARGINS

The net margins of the 80 elevators included in the study exceeded $2,000,000 for the fiscal year 1947-48. It may be observed from table 41 that almost 75 per cent of the total was paid in cash, made currently payable or added to the patrons' equity reserve. Almost 10 per cent was added to surplus, which in practically all cases is not allocated to the individual patrons' accounts.

PATRONAGE DIVIDENDS

There is no one prevailing method followed in allocating patronage dividends to patrons. Of the 69 associations for which complete data are available, seven associations paid no dividends on either grain purchases or merchandise sales, primarily because of lack of savings. There were 12 other associations which paid no dividends on merchandise sales. In a number of cases, it was assumed that the merchandise department was operated at cost, and in consequence, no savings from this department were available for distribution. Only four associations paid a uniform number of cents per bushel on grain purchases. Of the 35 associations which paid a specified percentage of the value of grain purchases, 27 paid a specified percentage of merchandise sales, and with the exception of three associations, the percentages were the same for both grain and merchandise (table 42).

Table 42. Method of Allocating Patronage Dividends by 69 Minnesota Cooperative Elevator Associations

Dividends on grain	Dividends on merchandise				
	None	Per cent of sales		Dollars per unit of sales	Total
		Uniform	Different		
None	7	0	0	0	7
Cents per bushel					
Uniform	2	2	0	0	4
Different	4	14	2	3	23
Per cent of purchases	6	27	2	0	35
Total	19	43	4	3	69

Table 43. Comparative Balance Sheets, 256 Minnesota Cooperative Elevator Associations, 1948 and 1949

	1948		1949	
	Average value	Per cent total asests	Average value	Per cent of total assets
Assets				
Current assets				
Cash	$ 7,926.06	6.7	$ 9,900.39	8.4
Government bonds	909.87	.7	1,062.81	.9
Accounts receivable—patrons (net)	8,992.18	7.6	9,092.43	7.7
Advances	143.11	.1	417.05	.4
Account sreceivable—commission firms	14,143.19	11.9	10,362.26	8.8
Notes receivable	1,202.61	1.0	341.27	.3
Inventory—grain	36,188.47	30.5	29,741.82	25.1
Inventory—merchandise	12,644.88	10.7	11,295.02	9.4
Other current assets	310.73	.3	977.80	.8
Total current assets	$ 82,461.10	69.5	$ 73,190.86	61.8
Investments	5,045.14	4.2	6,591.42	5.6
Fixed assets				
Buildings and equipment	$ 45,511.81	38.4	$ 53,802.86	45.4
Less: reserve for depreciation	15,216.25	12.8	16,987.16	14.4
Net buildings and equipment	$ 30,295.56	25.6	$ 36,815.70	31.0
Land	370.09	.3	438.27	.4
Total fixed assets	$ 30,665.65	25.9	$ 37,253.97	31.4
Other assets	470.10	.4	1,389.55	1.2
Total assets	$118,641.99	100.0	$118,425.80	100.0
Liabilities and Net Worth				
Current liabilities				
Bank overdrafts	$ 12,775.12	10.8	$ 6,939.18	5.8
Accounts payable—patrons	215.88	.2	701.51	.6
Accounts payable—commission firms	9,919.91	8.3	7,907.91	6.7
Accounts payable—general	518.40	.4	323.14	.3
Interest dividends payable	566.48	.5	697.39	.6
Notes payable	688.10	.6	624.14	.5
Storage liability	13,910.54	11.7	19,667.32	16.6
Patrons' dividends payable	6,121.82	5.2	3,541.12	3.0
Other current liabilities	1,267.86	1.1	849.88	.7
Total current liabilities	$ 45,984.11	38.8	$ 41,251.59	34.8
Long-term liabilities				
Notes and mortgages payable	2,851.66	2.4	2,249.41	1.9
Other long-term liabilities	1,051.48	.9	1,362.24	1.2
Total long-time liabilities	$ 3,903.14	3.3	$ 3,611.65	3.1
Total liabilities	$ 49,887.25	42.1	$ 44,863.24	37.9
Net worth				
Preferred stock	$ 2,223.34	1.9	$ 3,385.14	2.9
Common stock	16,688.03	14.1	16,616.82	14.0
Stock credits	4,655.97	3.9	4,994.85	4.2
Patrons' equity reserve	27,943.12	23.5	31,293.36	26.4
Statutory reserve	431.11	.4	1,111.17	.9
Certicates of equity	130.39	.1	112.03	.1
Other net worth reserves	1,317.32	1.1	1,113.95	.9
Surplus	12,762.12	10.7	12,539.89	10.7
Undistributed margins	2,603.34	2.2	2,395.35	2.0
Total net worth	$ 68,754.74	57.9	$ 73,562.56	62.1
Total liabilities and net worth	$118,641.99	100.0	$118,425.80	100.0

Changes in Financial Organization and Operation

The main changes in the financial organization of cooperative elevator associations from 1948 to 1949 as shown by the composite balance sheets were the decline in current assets and current liabilities and the increase in fixed assets and net worth (table 43). Inasmuch as total assets remained about the same, the result of these changes was that current assets and current liabilities represented smaller proportions and fixed assets and net worth larger proportions of the total assets in 1949. Changes in most financial ratios were only slight, and average financial status was satisfactory both years.

Days sales outstanding in receivables from patrons were 24 in 1949 compared with 23 in 1948. The high figure for some associations in both years indicated need for stricter credit policy.

Ratio	1948	1949
Current assets to current liabilities	2.1	2.0
Net worth to debt	1.8	1.9
Net worth to fixed assets	2.4	2.1
Sales to fixed assets	18.0	15.0

The total sales in 1948-49 averaged about 4 per cent less than in the previous year. The decline in sales and the increase in fixed assets resulted in the ratio of sales to fixed assets changing from 18 to 15. Gross margin on sales averaged 4.7 per cent in 1948-49 compared with 4.5 per cent in 1947-48 (table 44).

The decline in total gross margin and the increase in operating expenses reduced operating margins by 30 per cent. The net savings in 1948-49 constituted 1.7 per cent of the total sales plus service income, compared with 2.4 per cent in 1947-48.

Table 44. Comparative Operating Statements, 256 Minnesota Cooperative Elevator Associations, 1947-48 and 1948-49

	1947-48		1948-49	
	Average value	Per cent of sales	Average value	Per cent of sales
Sales				
Grain	$711,460.58	85.9	$682,124.93	85.9
Merchandise	116,543.08	14.1	111,935.31	14.1
Total sales	$828,003.66	100.0	$794,060.24	100.0
Cost of sales				
Grain	686,425.89		661,525.29	
Merchandise	104,079.97		99,489.11	
Total cost of sales	$790,505.86	95.5	$761,114.40	
Gross margin on sales				
Grain	25,034.69		20,449.64	
Merchandise	12,463.11		12,446.20	
Total gross margin on sales	$ 37,497.80	4.5	$ 32,945.84	4.1
Other operating income	3,642.21		5,119.44	
Total gross margin	$ 41,140.01		$ 38,065.28	
Operating expenses	20,696.13		23,498.30	
Operating margins	$ 20,443.88		$ 14,566.98	
Other expenses	1,692.06		1,505.60	
	$ 18,751.82		$ 13,061.38	
Other income	1,031.59		734.06	
Net margins	$ 19,783.41		$ 13,795.44	

Table 45. Factors to Use in Analyzing the Business of Minnesota Cooperative Elevator Associations, 1948

	Area 1	Area 2	Area 3	All areas	Your association
Financial and operating ratios					
Current assets to current liabilities	1.7	2.1	3.0	2.1	$
Net worth to debt	1.5	1.6	3.5	1.8	
Net worth to fixed assets	2.3	2.5	2.4	2.4	
Sales to fixed assets	18.9	18.7	14.1	18.0	
Merchandise sales outstanding in receivables	33 days	21 days	21 days	23 days	
Volume of business					
Bushels of grain sold	$282,100	$318,300	$191,900	$289,400	$
Value of sales					
Grain	$698,748	$788,352	$445,243	$711,461	
Merchandise	57,843	134,220	172,926	116,543	
Total	$756,591	$922,572	$618,169	$828,004	$
Returns from operations					
Gross margin					
Grain	$ 27,829	$ 25,554	$ 17,168	$ 25,035	$
Merchandise	6,073	14,524	18,078	12,463	
Services	2,508	3,892	5,081	3,642	
Total	$ 36,410	$ 43,970	$ 40,327	$ 41,140	$
Operating expense	16,187	22,696	22,583	20,696	
Operating margins	$ 20,223	$ 21,274	$ 17,744	$ 20,444	
Net margins	$ 19,585	$ 20,715	$ 16,185	$ 19,716	$
Operating efficiency					
Gross margin: cents per bushel					
Wheat	13.4	14.1	5.5	12.9	
Oats	3.1	4.2	5.6	3.9	
Barley	9.8	9.7	9.1	9.7	
Corn	5.1	4.6	6.8	4.8	
Flaxseed	20.2	27.4	24.2	25.3	
Soybeans	—	6.7	13.7	7.6	
Gross margin: per cent of sales					
Grain	4.0	3.2	3.8	3.5	
Merchandise	10.5	10.8	10.4	10.7	
Total	4.5	4.3	5.7	4.5	
Operating expenses: per cent of sales and service income	2.1	2.5	3.6	2.5	
Operating margins: per cent of sales and service income	2.7	2.3	2.8	2.5	
Net margins: per cent of sales service income	2.6	2.2	2.6	2.4	

Summary

The influence of cooperative grain elevators on local grain handling and costs is felt at nearly every local shipping point in Minnesota. While the number of associations has not changed greatly over the past 30 years, the volume of grain and merchandise handled has increased significantly.

Most of the 80 associations surveyed in 1949 adhered fairly closely to the legal cooperative specifications in their organization and operations. However, some are organized and operating under articles of incorporation and bylaws of long standing which should be amended or revised in order to bring them into closer conformity with recent amendments to the basic Minnesota cooperative law.

Very few of the associations had difficulty in keeping control in the hands of producer-member patrons. Some associations have found, however, that when the proportion of non-producer or non-patron members becomes higher than desirable, the situation is very difficult to correct. In consequence, the voting stock rights of such members should be retired as soon as possible after the member ceases patronizing the association.

About 60 per cent of the 80 associations have been granted letters of exemption from income taxes. A number of other associations meet all the requirements but for various reasons have not applied for exemption.

The grain supply areas of three fourths of the associations studied had less than a 10-mile radius. The patronage and volume of business of all associations is limited in varying degrees by the presence of other competing grain buyers. Many of the competitors of the 80 associations were other cooperatives, but the more usual competition is either a line or independent elevator or both. Thirty-eight associations had no local competition but some had as many as three local competitors. Within a five-mile radius, about two fifths of the associations studied had two or more competitors. It is evident that competition in some areas for the available grain supply is particularly keen and as the supply areas of the larger and more efficient associations expand, some of the smaller organizations are experiencing more and more difficulty in obtaining adequate volume.

The method of buying grain is fairly uniform throughout the state. The prevailing method is outright purchase with only a small proportion purchased on contract or for future delivery. The method of sale and the selection of the market outlet are varied, depending on the type of grain and location of the elevator. For example, wheat in northwest Minnesota is usually consigned to Minneapolis or Duluth. Much of the corn and soybeans in the southern sections of the state is sold on track or to arrive for delivery at points in Iowa or other southern states. A high proportion of the barley is consigned to Minneapolis.

Very few managers of elevator associations follow a consistant policy of hedging their purchases of grain for consignment. Practically all hedge occasionally; some consistently. It is likely that a much larger proportion of the grain purchases would be hedged if the relationship between cash and future prices provided more satisfactory protection.

The net capital invested in cooperative elevator associations averaged $118,642 in 1948, ranging from less than $50,000 to more than $300,000.

Operating capital represented by current assets constituted 70 per cent of the total or $82,461 per association. Accounts receivable from patrons, one of the important items of operating capital, averaged $8,992, but one tenth of the associations had outstanding accounts of $16,000 or more.

The over-extension of credit to purchasers of merchandise with the accompanying difficulty of maintaining collections is one of the most serious problems of management. This is well evidenced by the fact that for more than one fifth of the associations, the days sales outstanding in receivables were 50 or more.

Of the total capital required, 26 per cent was used for fixed assets. The original investment was $45,511 per association but one third of this had been depreciated leaving a net value of $30,295.

Creditors supplied 42 per cent of the capital. Patronage dividends payable, which amounted to 5.2 per cent of the assets, are included in this proportion. Inasmuch as most of the patrons are members, the amount of this item can be considered as capital provided by members, bringing the total capital supplied by members and patrons to an average of 63 per cent of the assets.

Capital stock, including both common and preferred, accounted for 20 per cent, and patrons' deferred dividends, 24 per cent of the total net worth. The surplus which constituted 11 per cent of the net worth is in the main not credited to individual patrons' accounts. Any association which hopes to maintain an income tax exempt status should avoid placing any of the net margins in an unallocated account.

On the basis of averages, the financial status of Minnesota cooperative elevator associations at the end of the 1947-48 fiscal year was very satisfactory. The ratio of current assets to current liabilities was slightly over the standard of 2 to 1; the ratio of net worth to debt was well above the minimum accepted standard of 1.5 to 1. For many associations, however, these ratios were below the standard. For example, 8 per cent of the associations did not have enough liquid assets to meet current creditor claims in full on demand. In the cases of 29 per cent of the associations, the ratio of net worth to debt was less than 1.0, indicating that the owners actually control less than one half of the assets.

Sales of grain averaged $711,460 and merchandise $116,543. The total gross margin averaged $41,140 or 4.5 per cent of the total sales and was about equally divided between operating expenses and operating savings.

Labor and management expense represented 52 per cent of operating expenses. Probably the best way to attack high operating costs among those associations with adequate volume is to obtain a more efficient management and utilization of labor.

The net margins of $19,716 were 2.4 per cent of total sales plus service income. For the 80 associations the net margins totaled $2,070,423. Of this amount, 80 per cent was paid out in cash, made currently payable, or placed in a patrons' equity reserve. In addition, almost 7 per cent was distributed to the patrons in the form of capital stock or stock credits. About 10 per cent of the margins were added to surplus, and 6 per cent represented undistributed margins.

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50 YEARS OF Weather

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