

Farm Credit Administration

F. F. HILL, Governor

E. A. STOKDYK, Deputy Governor, In Charge of Research

Cooperative Research and Service Division

T. G. STITTS, Chief

W. W. FETROW, Chief Economist

Business Administration

K. B. Gardner

H. C. Hensley

Cotton

Omer W. Herrmann

Otis T. Weaver

John S. Burgess, Jr.

Dairy

T. G. Stitts

D. D. Brubaker

Wm. C. Welden

Paul E. Quintus

Harry C. Trelogan

Fruits and Vegetables

A. W. McKay

M. C. Gay

N. Fogelberg

H. W. Mumford, Jr.

J. H. Heckman

Ford A. Quitslund

Grain

Harold Hedges

Harry E. Ratcliffe

E. B. Ballow

History and Statistics

R. H. Elsworth

French M. Hyre

Insurance

V. N. Valgren

K. H. Hunter

Livestock and Wool

C. G. Randell

L. B. Mann

H. H. Hulbert

James M. Coon

Poultry

John J. Scanlan

Roy W. Lennartson

Purchasing

Joseph C. Knapp

John H. Lister

Gerald M. Francis

Special Crops

H. M. Bain

Traffic

Charles B. Bowling

The Cooperative Research and Service Division conducts research studies and service activities relating to problems of management, organization, policies, merchandising, sales, costs, competition, and membership arising in connection with the cooperative marketing of agricultural products and the cooperative purchase of farm supplies and services; publishes the results of such studies; confers and advises with officials of farmers' cooperative associations; and cooperates with educational agencies, cooperative associations, and others in the dissemination of information relating to cooperative principles and practices.

*Copies of this publication may be obtained upon request, while
a supply is available, from the*

Director of Information and Extension

Farm Credit Administration, Washington, D. C.

*Operations of Cooperative
Grain Elevators
in Kansas and Oklahoma
1931-32 to 1936-37*

by Harold Hedges
Principal Agricultural Economist



Farm Credit Administration
Cooperative Research and Service Division
Washington, D. C.

Bulletin No. 30

January 1939

For sale by the Superintendent of Documents, Washington, D. C. - - - - - Price 10 cents

Contents

Summary	111
Purpose and method of study	2
Areas used as basis for study	4
Importance of local cooperative grain marketing	6
Volume of business	6
Assets, liabilities, and net worth	7
Members' equities in assets	8
Capital investment	9
Area differences in financial status	11
Relation of current assets to current liabilities	12
Relation of total assets to total liabilities	14
Surplus position of the associations	15
Financial status of cooperative elevators	16
Operating results	20
Yearly operating results	24
Factors influencing operating results	29
Measuring operating efficiency	29
Membership	30
Membership status	31
Membership and patronage	32
Membership and business volume	34
Member-patronage and business volume	38
Membership and capital structure	40
Member-patronage and net income	42
Volume as an operating factor	43
Grain volume and net income	45
Total business volume and net income	46
Side lines as an operating factor	47
Unit costs of operation	50
Side lines and unit operating costs	51
Business volume and expense per dollar of sales	52
Grain volume and expense per dollar of sales	54
Grain volume and unit costs of individual elevators	56
Efficiency in utilizing labor	56
Utilizing the elevator facilities	58
Trend of wheat prices as a factor affecting grain margins	60
Cooperative terminal grain marketing agencies	62

Summary

FARMERS' elevators in Kansas and Oklahoma, during the last 40 years, have improved substantially the local handling of grain. Local grain margins have been reduced materially and faults in grading and weighing practices have been largely remedied.

Cooperative elevators are so widely scattered over these two States that their influence on local grain-handling methods and costs is felt at nearly every shipping point. Kansas cooperative elevators numbered 271 in 1937. They had about 38,000 members whose total investment was more than \$8,000,000. Oklahoma had 91 elevators with about 13,500 members, who had invested approximately \$2,300,000.

In 1937, the 271 Kansas associations reported handling about 28½ million bushels of grain, and 11 million dollars' worth of side lines, largely coal, feed, seed, and petroleum products. The 91 Oklahoma elevators reported handling 10 million bushels of grain, and 2 million dollars' worth of side lines.

The cooperative elevators of the two States were studied on an area basis—three areas in Kansas and one in Oklahoma. Those in eastern Kansas were in the least satisfactory financial position; on the average they had less than \$2 of current assets for each dollar of current liabilities. Those in the other three areas had an average of more than \$4 of current assets for each dollar of current liabilities.

Despite depression and drought, the elevators in each area obtained fairly satisfactory operating results from 1931-32 to 1936-37, with distinct improvement in eastern Kansas and some change for the better in Oklahoma.

Both the number of members and the number of member-patrons were closely related to grain volume and also to business volume. Eastern Kansas elevators were in greatest need of bringing membership up to 100 or more in order to assure enough business volume for efficient operation. Southwestern Kansas elevators were least handicapped with less than 100 members or 75 member-patrons.

Associations with capital stock of low par value had a distinct advantage in number of members and of member-patrons over those with stock of high par value.

Grain volume varied less from year to year in eastern Kansas and Oklahoma, reflecting more stable production conditions. Side-line volume varied less than grain volume in each area; changes in the value of side-line sales were caused mainly by changing price levels.

Associations handling less than 100,000 bushels of grain had the greatest need for side lines to add to business volume. By obtaining sufficient side-line income to cover 40 percent or more of expenses, elevators handling less than 100,000 bushels of grain nearly doubled their chances of making net gains.

Side lines were most important in the two western Kansas areas, contributing, on the average, enough income to cover two-thirds of the total expenses as against less than half in the other two areas.

It cost materially more to handle a dollar's worth of side lines than a dollar's worth of grain. As the proportion of side-line sales to total sales increased, expense per dollar of sales also increased.

As total business volume increased, expense per dollar of sales tended to decrease. Increases in sales beyond \$150,000 had a less pronounced tendency to reduce unit costs. Considering year-to-year variations in grain volume and bushel costs of individual associations, those having large average volume have a distinct advantage in unit cost over small-volume elevators, because there is less chance of their volume decreasing to a point where bushel costs will exceed the margins taken on the grain.

Other means of decreasing expense per dollar of sales were found in utilizing the labor of employees to best advantage and in making the most effective use of the elevator plant and equipment.

The local cooperative elevators of Oklahoma sold 70 percent of their grain through cooperative regional agencies in 1937, against 53 percent in southwestern Kansas and 39 percent in eastern and northwestern Kansas.

Operations of Cooperative Grain Elevators in Kansas and Oklahoma 1931-32 to 1936-37¹

THE FARMERS' elevator movement in the hard-winter-wheat area of the Southwest, in which Kansas and Oklahoma are located, got under way in the late years of the nineteenth century. It gained momentum slowly in the first decade of the present century, then speeded up to a high point in the second decade. Since 1920, relatively few new local cooperative grain marketing associations have been organized.

The first farmers' elevator organized in Kansas, according to available records,² was started at Wilson, Kans., in 1892; it has since discontinued operations. In Oklahoma, an association was started in Elk City in 1905 and today remains active, engaging in a number of business activities in addition to handling grain. (See fig. 1.)

Credit is due Roy M. Green and Roy A. Ballinger for the analysis covering the earlier years of the study. Acknowledgment is made of the assistance of E. J. Bell, Jr., and W. J. Hart who conducted the study for the Cooperative Division during 1932, 1933, and 1934; of Vance M. Rucker and his coworkers of the Extension Service, Kansas State College, and A. W. Jacob of the Extension Service, Oklahoma A. & M. College, in collecting data; and of Jane L. Soearce in preparing the statistical data. Appreciation is expressed to the managers and officers of the local elevator associations and to the regional and State marketing and service organizations whose cooperation made the study possible.

¹ Preliminary analysis of the data for the earlier years (1931-32 to 1934-35) of this study was made and the results published in two reports: Farm Credit Administration Miscellaneous Report No. 6, Membership, Financial, and Operating Status of Cooperative Country Elevators in Oklahoma, 1931-34, by Roy M. Green and Roy A. Ballinger; and Farm Credit Administration Miscellaneous Report No. 7, Membership, Financial, and Operating Status of Cooperative Country Elevators in Kansas, 1931-34, by Roy M. Green. Material contained in the Kansas and Oklahoma reports was drawn upon freely in preparing this bulletin.

² The files of the Cooperative Research and Service Division, Farm Credit Administration, contain information on most of the cooperative elevators which have discontinued operations thus far during the present century, as well as on elevators now active. For example, in early 1937, cards were on file for 265 Kansas cooperative elevators which have discontinued operations.

Some idea of the importance of the decade of 1911 to 1920 in the farmers' elevator movement is gained from the fact that nearly two-thirds of the cooperative elevators now in active operation in Kansas were organized in that 10-year period, with 40 percent started during the 5 years, 1916 to 1920. In Oklahoma, 46 percent of the local elevator associations were started between 1916 and 1920, inclusive.

During the period since 1922, there have been more farmers' elevators discontinuing operations in Kansas and Oklahoma than there have been new ones organized. Many of them were started in the early years of the movement, and did not have sufficient business volume in prospect to justify their existence, although when organized they may have been of distinct benefit in bringing about a material reduction in local handling margins. Other associations were the victims of inefficient management. The problem of securing capable managers is a real one at any time, but was particularly acute during the period of rapid increase in the number of associations. Still other cooperative elevators have ceased operations because changes in types of farming and methods of marketing have reduced the need for grain-handling facilities in certain areas.

A survey of cooperative associations made by the Cooperative Division of the Farm Credit Administration in 1937 indicated there were 271 active cooperative elevators in Kansas and 91 in Oklahoma.³ In addition, there were 35 farmers' stock companies⁴ in Kansas which had some semblance of cooperative organization in that they were farmer-owned and controlled. The approximate number, if any, of such farmers' stock companies in Oklahoma was undetermined.

Purpose and Method of Study

This study of the cooperative grain elevators of Kansas and Oklahoma was made with the following objectives in mind: (1) To determine more definitely their financial status; (2) to obtain information on operating practices and problems; (3) to learn more of the factors influencing income and business success; and (4) to provide some definite conclusions regarding operation and membership, drawn from the experiences of the elevators, which the individual association may use as a measure of its own status.

³ These 271 Kansas associations were in active business operation at 323 shipping points in 1936-37. In addition, there were 4 associations which were closed temporarily, and 14 associations whose facilities were leased and hence operated by other agencies. Counting the latter 18 organizations, there were 289 cooperative elevator associations owning elevator facilities.

The 91 Oklahoma associations operated at 106 shipping stations. In addition, there were 4 associations whose facilities were leased to other agencies. Thus, there were 95 cooperative associations owning elevator facilities in Oklahoma.

⁴ It was not possible to draw a sharp line of distinction between cooperative and stock company elevator organizations. If, however, an organization observed cooperative principles and followed cooperative practices to a great extent in its operations, it was classed as a cooperative even though it might fall somewhat short of being a cooperative from the strictly legal aspect. For example, a number of associations which failed to do more than 50 percent of their business with members, though qualifying as cooperatives otherwise, were classed as cooperative organizations rather than stock companies.



FIGURE 1.—OKLAHOMA'S OLDEST EXISTING FARMER'S ELEVATOR ORGANIZATION.

Part of the facilities of the Roger Mills County Cooperative Association, Elk City, Okla.

Beginning in 1931, the Cooperative Research and Service Division of the Farm Credit Administration (then the Division of Cooperative Marketing, Federal Farm Board) started a cooperative project with the Kansas State College, the Oklahoma A. & M. College, and the regional grain marketing organizations operating in the southwest grain area, to learn more of the status of local cooperative elevators. This study, continued until 1936, resulted in assembling data annually on the financial status and operating practices and results of a large number of farmers' grain elevators in Kansas and Oklahoma. The reports obtained provide information on the operations of these elevators for 5 crop years, 1931-32 to 1935-36, and were made up chiefly from the annual audit reports of the associations.

The annual statements of most of the associations cooperating in the study were prepared by public accountants, but in a few cases they were made up by the manager or a committee of the board of directors. Some variations were evident, in classification of accounts and in methods of setting up expenses, but no attempt was made to adjust such items to a uniform basis. In most cases a charge was made for depreciation. In a few instances, however, this was not done, and no attempt was made to estimate and include such a charge. These shortcomings in the data are recognized, but they do not invalidate year-to-year comparisons of balance-sheet items or of results of operations when the elevators are grouped for purposes of analysis. In addition to the data secured from annual financial statements, information also was obtained from elevator managers on membership and operating practices in order to facilitate analyses of the financial data.

During 1937, the Farm Credit Administration conducted a survey of all farmers' cooperative organizations in the United States. Some general data have been taken from the survey reports of Kansas and Oklahoma cooperative elevators and are presented and discussed on

succeeding pages along with the data obtained for earlier years. The 1936-37 data are mainly for the fiscal periods covering the movement to market of the 1936 grain crop. Hence, as a result of the 5-year study of elevators and of the general survey in 1937, certain financial and operating data are available for a period of 6 crop years, 1931-32 to 1936-37.

Areas Used as Basis for Study

Elevator operations are not carried on under identical conditions in all parts of Kansas and Oklahoma. Climatic conditions vary rather widely between areas as well as from year to year. Grain production has developed differently in the several sections of the two States. There are differences in the kind of grain handled by the elevators and in the markets to which the grain moves. The average capacity and the age of the elevators differ among areas as a result of the variation in basic conditions suggested above. In the light of

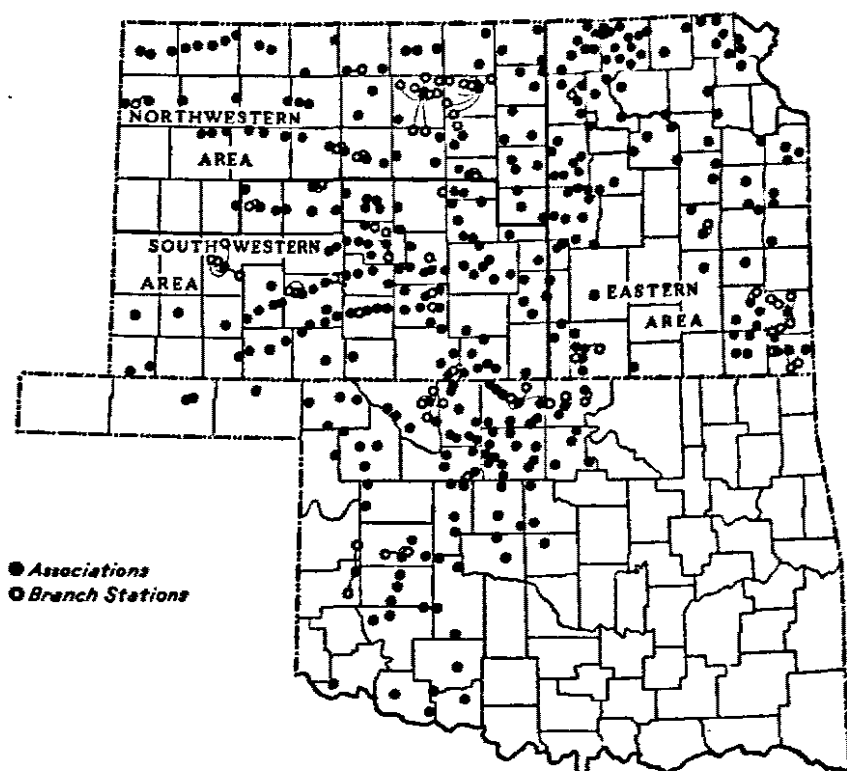


FIGURE 2.—KANSAS AND OKLAHOMA COOPERATIVE ELEVATORS.

Cooperative elevators are well distributed throughout Kansas except in part of the eastern area. In Oklahoma no grain cooperatives are found in the eastern and the southeastern sections of the State.

FIGURE 3.—SIGNS OF PROGRESS
OF A COOPERATIVE ELEVATOR
ASSOCIATION.

Right: Small frame elevator with which business was started. Center: A circular grain tank to provide additional grain storage capacity. Left: Modern concrete elevator built largely from earnings of earlier plant.



such variations, the Kansas and Oklahoma cooperative elevators were grouped according to location in the four areas designated in figure 2; namely, eastern Kansas, northwestern Kansas, southwestern Kansas, and Oklahoma.

The eastern Kansas area is the oldest wheat-growing section in that State, but for a long time wheat acreage was decreasing while feed-grain production was increasing. As a result, the volume of grain moving from local shipping points kept decreasing, until the past few years when unusual climatic conditions resulted in some increase. The elevators in this area are, on the average, the oldest and the smallest in size, having an average capacity of 16,000 bushels.

The northwestern Kansas area has shown less year-to-year variation in wheat acreage in the last three decades than the other two sections of the State, but yields have varied more widely than in the other areas. Elevators have had to adjust their operations to meet the problem of wide variations in yearly volume. The average capacity of cooperative elevators in this area is about 22,000 bushels.

The southwestern Kansas area is one where wheat acreage has tended to increase in the last two decades. The western part of this area, where farming is conducted on a large scale, has wide variations in yields from year to year, while yields in the eastern part are much less variable. The average capacity of elevators in this area is about 42,000 bushels. (See fig. 3.) The size of most of these cooperative

elevators is not much different from those in northwestern Kansas, but there are some quite large plants, exceeding 100,000 bushels capacity, which contribute materially to the higher average capacity of this group.

The main wheat-growing sections of Oklahoma are in the north-central and northwestern parts of the State, and that is where the cooperative elevators are located. (See fig. 2.) Yields of wheat are quite variable in the "Panhandle" (western) counties but are much more stable in the other wheat-growing sections. Nearly all of the cooperative elevator records obtained in Oklahoma from 1931-32 to 1935-36 were from associations located in the area of more dependable wheat crops and hence they show less year-to-year variation in volume than elevators in northwestern and southwestern Kansas. The average capacity of the Oklahoma cooperative elevators is about 25,000 bushels.

Importance of Local Cooperative Grain Marketing

The geographical distribution of the active cooperative elevators in Kansas and Oklahoma is shown in figure 2. Each of these associations was a separate organization with its own board of directors. In most cases, each association served only a single shipping point but in a few instances, as indicated in figure 1, the association served two or more shipping points, with grain-handling facilities at each point.

The total membership of the 271 local Kansas elevator associations^a was about 38,000, and of the 91 Oklahoma associations, about 13,500, in 1937. Although the major part of the business of these associations was done with members, fully as many nonmembers as members made some use of the grain handling and other facilities of these associations.

Volume of Business

The 271 cooperative elevators of Kansas handled about 28½ million bushels of grain from the 1936 crop.^b In addition, they handled various farm supplies, largely coal, feed, seed, and petroleum products, having a sales value of about 11 million dollars. The 91 associations in Oklahoma handled more than 10 million bushels of grain, and, in

^a Membership data were available for only 263 associations, and were estimated for the remaining 8 associations.

^b The fiscal years of Kansas and Oklahoma cooperative elevators are quite variable. About one-third of the Oklahoma associations and half of those in Kansas close the year's business in December. Nearly all the rest close their fiscal years between January and June. In the general survey made in 1937 (the basis for the figures cited here), the financial and operating data for the latest fiscal year available were obtained from each association. Hence, the grain reported as handled was largely from the 1936 crop, but for a few associations the reports covered the grain movement from the 1935 crop.

addition, farm supplies, which together had a sales value of over 2 million dollars.

By far, the larger part of the grain handled in these two States was wheat. The 1936 crop of wheat in Kansas was reported as 120 million bushels. The 28½ million bushels of wheat which Kansas cooperatives reported handling was 24 percent of the 1936 crop and a substantially higher percentage of the wheat which moved into market channels. The 1936 wheat crop in Oklahoma was estimated at 27½ million bushels.⁷ The volume of 10 million bushels handled by the Oklahoma cooperative elevators was 36 percent of this crop. Data available for nearly two-thirds of the Oklahoma elevator associations for 1935-36 indicated they handled in that crop year approximately 60 percent of the grain shipments made from the stations at which they operated.

The influence of cooperative grain elevators as a marketing factor extends beyond the local stations at which they are located. They have brought in a competitive influence, extending throughout the grain-growing areas, that has been of material benefit to grain growers not only through reductions in local grain-handling charges but also by eliminating questionable practices in grading and weighing grain.

Assets, Liabilities, and Net Worth

The value of the combined total assets of the 271 active Kansas cooperative elevator organizations, as revealed by the 1937 survey of all cooperatives in that State, was \$8,062,000⁸ and of the 91 Oklahoma associations, was \$2,319,000. This was an average of nearly \$30,000 per association in Kansas and of \$25,500 in Oklahoma. Fixed assets made up 42 percent of the total assets in Kansas and 52 percent in Oklahoma. These fixed assets consisted mainly of grain elevators and equipment, coal sheds and supply warehouses, but in numerous instances also included facilities for handling petroleum products and in at least two cases in Oklahoma included cotton gins.

Current assets, consisting of cash, inventories, and receivables, made up 53 percent of the assets of Kansas cooperative elevators and 41 percent of the total assets of Oklahoma associations. It is questionable, however, to class all notes and accounts receivable as current assets, since the collectibility of a large proportion of them is doubtful. Many receivables in recent years have been charged off as uncollectible, but a large proportion of them, the value of which is doubtful, still remain.

Total liabilities were equal to 26 percent of the value of total assets for the 271 Kansas associations and 25 percent for the 91 Oklahoma

⁷ U. S. Department of Agriculture, *Agricultural Statistics*, 1937.

⁸ Financial data were not obtainable from 8 of the 271 associations, but estimates were made for them in arriving at the valuations presented here.

elevators. Of these liabilities, 70 percent were classed as current by the Kansas elevators as against only 37 percent by the Oklahoma associations. The remainder of the liabilities were reported to be long-term obligations.

Net worth was equal to 74 percent of the total assets of the Kansas elevators and 75 percent of the assets of the Oklahoma associations. Of the net worth of the Kansas associations, 70 percent was represented by capital stock and 30 percent by surplus and general reserve accounts. For the 91 Oklahoma elevators, 69 percent of the net worth was in the form of capital stock and 31 percent was surplus and reserves. The reported net worths of the Kansas and Oklahoma associations, 74 and 75 percent of the total assets, respectively, may be somewhat higher than they would be if doubtful receivables which are uncollectible were charged off and full depreciation reserves for fixed assets set up for all associations.

Members' Equities in Assets

The net worth of the association represents the dollar value of the property interest of its members. The members' equity is the percentage which the net worth is of the total book value of the assets. In other words, it is the proportion of such assets which is free of all indebtedness. As indicated above, the equity of member-stockholders in the assets of Kansas cooperative elevators was 74 percent, and of Oklahoma associations, 75 percent.

There was a wide variation among the associations in the equities of their members. In Kansas, the members of 6 (or 2.3 percent) of the 263 organizations for which this information was available, had no equities, that is, the value of assets was not enough to cover the amount of the indebtedness. In Oklahoma, 7 (or 7.7 percent) of the 91 associations reported no equities for members. In contrast, 56 percent of the Kansas elevators reported members' equities of more than 75 percent, and 55 percent of the Oklahoma associations reported similar high equities. Table 1 shows a classification of the cooperative elevators of the two States based on the equities of their members.

How large should be the equity of member-stockholders in the assets of their elevator association? A commonly accepted rule is that members should provide all capital needed for the investment in plant and equipment plus at least half of the amount required for working capital as represented by cash, inventory, and receivables. Table 3 which follows (p. 12) indicates that, on the average, the equities of members of Kansas and Oklahoma cooperative elevators were just about the desired proportion of the total capital investment. Ordinarily 40 to 50 percent of an elevator's total investment is in fixed assets. Hence, to observe the rule indicated above, the mem-

TABLE 1.—NUMBER AND PERCENTAGE OF KANSAS AND OKLAHOMA COOPERATIVE ELEVATORS, CLASSIFIED ACCORDING TO MEMBERS' EQUITIES, 1937 SURVEY

Equities of members	Kansas		Oklahoma	
	Number of elevators	Percentage of total	Number of elevators	Percentage of total
None.....	6	2.3	7	7.7
1 to 25 percent.....	12	4.6	7	7.7
26 to 50 percent.....	28	10.6	8	8.8
51 to 75 percent.....	71	27.0	19	20.9
More than 75 percent.....	146	55.5	50	54.9
Total.....	263	100.0	91	100.0

Source of data: 1937 survey of all cooperatives made by Farm Credit Administration.

bers' equity should be 70 to 75 percent of the asset valuation. Certainly, any elevator association in which the equity of the members is less than 50 percent is in doubtful if not distressed financial position. Table 1 indicates that about 17 percent of the Kansas associations and 24 percent of those in Oklahoma had members' equities of 50 percent or less.

There was a definite tendency for the older associations to have higher members' equities than those more recently organized. Taking the 91 Oklahoma associations, 73 percent of those organized before 1916 had members' equities exceeding 75 percent of the value of all assets, as against 59 percent of those organized between 1916 and 1925, and 26 percent of those organized since 1925. Five of the seven Oklahoma associations whose members had no equities were organized after 1925. One reason for the newer associations having low members' equities may be that they include some weak associations on the verge of bankruptcy but still operating, whereas the process of elimination of the weak among the older associations has been largely completed. Then, too, the younger associations operating successfully have not had as long a period in which to pay off indebtedness and build up their capital structure from net earnings as the older ones.

Capital Investment

Most of the Kansas and Oklahoma cooperative elevators are local organizations, each operating at a single shipping point. Of the 271 Kansas associations, 27 reported they were operating at more than one station, whereas 7 of the 91 Oklahoma associations operated elevators at two or more shipping points. These latter associations usually

had relatively large investments, but the investment per shipping point was in line with other organizations operating at single shipping points.

The largest number of Kansas associations had total assets between \$10,000 and \$20,000, as did the largest number of Oklahoma elevators. (See table 2.)

TABLE 2.—NUMBER AND PERCENTAGE OF KANSAS AND OKLAHOMA COOPERATIVE ELEVATORS, CLASSIFIED ON THE BASIS OF VALUE OF TOTAL ASSETS, 1937 SURVEY ¹

Value of total assets	Kansas		Oklahoma	
	Number of elevators	Percentage of total	Number of elevators	Percentage of total
\$10,000 or less.....	33	12.5	18	19.8
\$10,001 to \$20,000.....	93	35.4	28	30.7
\$20,001 to \$30,000.....	49	18.6	21	23.1
\$30,001 to \$40,000.....	32	12.2	8	8.8
\$40,001 to \$50,000.....	20	7.6	7	7.7
\$50,001 to \$60,000.....	11	4.2	2	2.2
\$60,001 or more.....	25	9.5	7	7.7
Total.....	263	100.0	91	100.0

¹ As previously stated, the data obtained on farmers' elevators in the 1937 survey of all cooperatives were not all for the 1936 crop year. In fact, the data for 63 of the 263 Kansas associations furnishing information were for fiscal periods which coincided more nearly with the 1935 crop year. Balance-sheet data for all 263 associations were used in preparing this table, however, in order to give a more complete picture of the assets.

Eighty-eight of the 263 Kansas associations reporting had total assets valued in excess of \$30,000, and of these 17 operated at more than one shipping point. Of the 91 Oklahoma associations, only 24 (27 percent) had assets in excess of \$30,000 and 6 of these operated elevators at more than one station.

The rather wide variation in the valuation of total assets of these elevator associations is due to several factors. One has already been mentioned—that some organizations operate at more than one station and therefore have large investments. Another cause for variation is the capacity and age of the elevator facilities. (See fig. 4.) Some of the associations have old facilities of small capacity which have depreciated to the point where they are carried at very low valuations on the records. Other associations handle large volumes of farm supplies, thus adding to inventories and calling for substantial investments in fixed assets (warehouses, filling stations, and other facilities). Still other associations have tied up considerable capital in accounts and notes receivable by extending credit to their patrons.

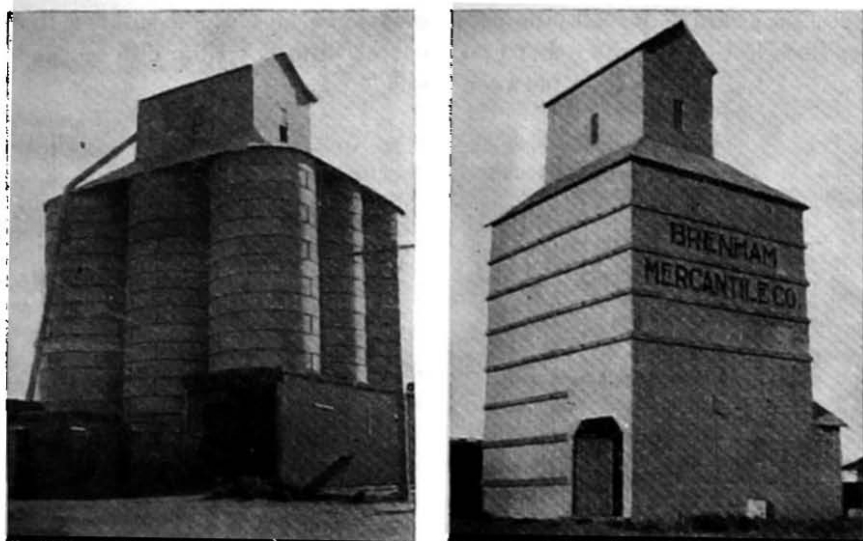


FIGURE 4.—THE MAIN FIXED INVESTMENT OF A LOCAL COOPERATIVE GRAIN ASSOCIATION IS THE ELEVATOR.

Left, Unusual type of construction for a cooperative elevator—circular steel bins. Right, "Balloon" type of elevator of studded wood frame construction common in the winter wheat area.

Area Differences in Financial Status

Some differences exist as among the four areas of Kansas and Oklahoma in the financial status of the cooperative elevators. A brief description has already been given of the areas into which the two States were divided for purposes of this study. (See pp. 4-6.) Table 3 presents for each area average balance sheets of those elevators which provided detailed information for the crop year, 1935-36. There is some evidence to indicate that these selected groups of associations are somewhat above the average of all elevators in each area in financial condition.⁹ It remains possible, however, to use the group averages shown in table 3 to note differences among areas in financial status.

Eastern Kansas, on the average, has smaller cooperative elevators than any one of the other three areas, smaller in business volume as well as in size and valuation of grain-handling facilities. The average valuation of total assets of \$25,000 was somewhat smaller than the

⁹The elevators furnishing data from 1931-32 to 1935-36 for the detailed study of elevator operations were not fully representative of all elevators in each of the four areas. Instead, they appear to be somewhat above average in financial status. The general survey of all cooperatives made in 1937 provided certain balance-sheet items for 91 farmers' elevators in Oklahoma, including the 57 from which detailed data were obtained for 1935-36. Comparing these items for the 91 elevators and for the 57, total assets for the larger group averaged approximately \$25,500, as against \$29,000 for the group providing 1935-36 data. Similar differences, between all elevators and the selected group providing 1935-36 data were also found in the three Kansas areas, but to a lesser degree.

\$29,000 average for Oklahoma associations, and much smaller than such valuations in the other two areas of Kansas. Like differences in current assets prevailed between areas.

TABLE 3.—AVERAGE BALANCE SHEETS OF KANSAS AND OKLAHOMA COOPERATIVE ELEVATORS, 1935-36

Item	Eastern Kansas (average of 39 associa- tions)	North- western Kansas (average of 26 associa- tions)	South- western Kansas (average of 55 associa- tions)	Oklahoma (average of 37 associa- tions)
Current assets:				
Cash.....	\$2, 770	\$5, 663	\$4, 150	\$3, 604
Receivables.....	4, 803	9, 031	8, 644	4, 688
Inventories.....	5, 855	9, 549	5, 805	4, 555
Other.....	999	2, 990	3, 479	2, 347
Total current assets.....	14, 427	27, 233	22, 078	15, 194
Fixed (depreciated value).....	10, 910	13, 477	19, 317	13, 813
Total assets.....	25, 337	40, 710	41, 395	29, 007
Liabilities:				
Current.....	8, 190	5, 279	4, 821	3, 749
Fixed.....	997	1, 993	3, 903	2, 710
Total liabilities.....	9, 187	7, 272	8, 724	6, 459
Net worth:				
Capital stock.....	14, 739	22, 041	16, 869	16, 213
Surplus and reserves.....	1, 411	11, 397	15, 802	6, 336
Total net worth.....	16, 150	33, 438	32, 671	22, 548
Total liabilities and net worth.....	25, 337	40, 710	41, 395	29, 007

Source of data: Survey made of indicated number of associations by Farm Credit Administration in cooperation with State colleges of Kansas and Oklahoma.

Relation of Current Assets to Current Liabilities

The average current position, the relation of current assets to current liabilities, was least favorable for the eastern Kansas organizations and most favorable for those in northwestern Kansas. Ordinarily, an association is considered in good operating position if it has current assets equal to two or more times current liabilities. The eastern Kansas elevators, on the average, were below this desirable ratio,

while those in the other three areas had current assets equal to four or more times current liabilities.

Mention has already been made of the doubtful collectibility of many of the notes and accounts receivable carried by the elevator associations. Considering only cash and inventories as readily applicable on indebtedness, the sum of these two items amounted to more than twice current liabilities in each of the four areas except eastern Kansas.

To give a more complete picture of the working capital position of the cooperative elevators in each of the four areas, they were divided into groups on the basis of the relation between current assets and current liabilities. In doing this, the 1936-37 data for cooperative elevators obtained in the general survey of all cooperatives were used. (See table 4.) A little less than two-thirds of the eastern and northwestern Kansas associations reported current assets valued at two or more times current liabilities and three-fourths of the southwestern Kansas and Oklahoma associations were in similar favorable working capital position. At the other extreme, 19 percent of the elevators in eastern Kansas and 18 percent in northwestern Kansas had current liabilities exceeding current assets, while 13 percent of the southwestern Kansas associations and 9 percent of those in Oklahoma were in like unfavorable position. Certainly, the associations in this latter group were distinctly handicapped for working capital. These ele-

TABLE 4.—RELATIONSHIPS BETWEEN VALUATIONS OF CURRENT ASSETS AND CURRENT LIABILITIES OF KANSAS AND OKLAHOMA COOPERATIVE ELEVATORS, 1936-37

Relation of total assets to total liabilities	Eastern Kansas		Northwestern Kansas		Southwestern Kansas		Oklahoma	
	Number of associations	Percentage of total	Number of associations	Percentage of total	Number of associations	Percentage of total	Number of associations	Percentage of total
Current assets 2 or more times current liabilities...	57	64.0	28	62.2	59	75.7	57	75.0
Current assets 1 to 1.9 times current liabilities...	15	16.9	9	20.0	9	11.5	12	15.8
Current assets less than current liabilities.....	17	19.1	8	17.8	10	12.8	7	9.2
Total.....	89	100.0	45	100.0	78	100.0	76	100.0

Source of data: 1937 survey of farm cooperatives made by Farm Credit Administration.

vators and, in less degree, others having less than two dollars of current assets for each dollar of current liabilities, have before them the task of improving their working capital position. This can be done by building up cash and inventories without similar increase in current liabilities.

Fixed or deferred liabilities, largely mortgage indebtedness, averaged largest in the southwestern Kansas area (see table 3) where grain acreage has expanded considerably in the past decade and there have been additions to the elevator plants financed in part by borrowing. In no area does the long-term indebtedness appear to be excessive and present a group problem, but there are individual associations in each area which need to reduce their indebtedness more in line with fixed asset valuations.

Relation of Total Assets to Total Liabilities

The total liabilities of eastern Kansas associations averaged sufficiently large in relation to the value of total assets (36 percent as against about 20 percent in the other areas) to suggest that a larger proportion of the associations might be in financial difficulties than in the other three areas. To determine if this were true, the associations of each of the four areas were classified in three groups on the basis of the percentage which total liabilities were of total assets. (See table 5.) Thirty-six percent of the eastern Kansas elevators for which 1936-37

TABLE 5.—RELATIONSHIPS BETWEEN VALUATIONS OF TOTAL ASSETS AND TOTAL LIABILITIES OF KANSAS AND OKLAHOMA COOPERATIVE ELEVATORS, 1936-37

Relation of total assets to total liabilities	Eastern Kansas		Northwestern Kansas		Southwestern Kansas		Oklahoma	
	Number of associations	Percentage of total	Number of associations	Percentage of total	Number of associations	Percentage of total	Number of associations	Percentage of total
Liabilities 20 percent or less of assets.....	41	46.0	18	40.0	42	53.9	38	50.0
Liabilities 21 percent to 40 percent of assets.....	16	18.0	12	26.7	20	25.6	16	21.1
Liabilities more than 40 percent of assets.....	32	36.0	15	33.3	16	20.5	22	28.9
Total.....	89	100.0	45	100.0	78	100.0	76	100.0

Source of data: 1937 survey of farm cooperatives made by Farm Credit Administration

data were available were in the unfavorable position of having liabilities exceeding 40 percent of the value of all assets, as against 33 percent in northwestern Kansas, 29 percent in Oklahoma, and only 21 percent in southwestern Kansas. Five of the 89 eastern Kansas elevators had liabilities exceeding assets. A like number of the 76 Oklahoma associations also had indebtedness in excess of assets but none of the northwestern or southwestern Kansas elevators were so heavily involved financially.

Surplus Position of the Associations

The valuation of surplus and reserve accounts of eastern Kansas elevator associations in 1935-36 (see table 3) averaged much smaller than in any of the other three areas, being 9 percent of the net worth as against 28, 34, and 48 percent in Oklahoma, northwestern Kansas, and

TABLE 6.—RELATION OF SURPLUS AND RESERVE ACCOUNTS¹ TO OUTSTANDING CAPITAL STOCK OF KANSAS AND OKLAHOMA FARMERS' ELEVATORS, 1936-37

Relation to capital stock	Eastern Kansas		Northwestern Kansas		Southwestern Kansas		Oklahoma	
	Number of associations	Percentage of total	Number of associations	Percentage of total	Number of associations	Percentage of total	Number of associations	Percentage of total
DEFICIT								
50 percent or more of outstanding stock.....	14	15.1	6	13.1	3	3.8	9	11.8
Under 50 percent of outstanding stock.....	19	20.4	14	30.4	13	16.6	12	15.8
SURPLUS								
Under 50 percent of outstanding stock.....	27	29.0	10	21.7	19	24.4	23	30.3
50 percent to 99 percent of outstanding stock.....	13	14.0	6	13.1	19	24.4	13	17.1
100 percent or more of outstanding stock.....	20	21.5	10	21.7	24	30.8	19	25.0
Total.....	93	100.0	46	100.0	78	100.0	76	100.0

¹ The surplus and reserve accounts considered here include all general reserves but not specific reserves for depreciation and bad accounts.

Source of data: 1937 survey of cooperative associations made by Farm Credit Administration.

southwestern Kansas, respectively. The higher percentages in the two western Kansas areas may, in part, reflect the realization of greater crop hazard with consequent greater year-to-year variations in business volume, thus making larger reserves desirable.

When the associations of the four areas are grouped on the basis of the relation of the surplus account to the par value of outstanding capital stock (see table 6), as reported in the 1937 survey of cooperatives, eastern Kansas had the largest percentage of elevators with capital stock impaired 50 percent or more. That area also had the smallest percentage of associations in the favorable position of having surplus and reserves equal to 100 percent or more of the outstanding capital stock.

The data cited above do not show any one of the four areas with a high proportion of its associations in serious financial difficulty. In each area there is a small percentage of associations with excessive indebtedness and hence on the brink of failure. The latter are faced with problems of correcting operating difficulties or adjusting business operations to changes in conditions occurring within the area. In some cases the difficulties may be too great to overcome. In any case, neglect or inability to make corrections and adjustments will result in failure, as it has in the past.

Financial Status of Cooperative Elevators

On the whole, there was some improvement in the financial status of the cooperative elevators of Kansas and Oklahoma between the crop year of 1931-32 and that of 1935-36. Tables 7, 8, 9, and 10 present comparative balance sheets for the 5 years, 1931-32 to 1935-36, for each of the four areas in Oklahoma and Kansas. The balance-sheet items are not expressed in dollar valuations, but in terms of the percentage each item is of the total asset valuation. When so expressed, the items are more comparable, since the same number of elevators is not represented in the data each year nor are the elevators identical through the 5-year period. It is true, however, that many of the elevators from which data were obtained for 1931-32 provided data for the later years. For example, 26 Oklahoma associations furnished information for each of the 5 years.

Only brief comment will be made regarding changes in the financial status of the associations between 1931-32 and 1935-36. In each of the 4 areas, the elevators improved in operating position during the 5-year period in that cash and inventories made up an increasing proportion of total assets. In all 4 areas, there was evidence of improved

credit and collection policy since the proportion which receivables were of total assets decreased from the high point in 1932 or 1933. Greatest improvement in this regard occurred in southwestern Kansas and in Oklahoma, and least improvement in northwestern Kansas where crop conditions were least favorable in 1934 and 1935.

Fixed assets made up a decreasing portion of total assets from 1932 to 1936 in eastern and northwestern Kansas. In Oklahoma, fixed assets decreased relative to total assets in the first 4 years of the period but increased slightly in 1936. In southwestern Kansas, the fixed assets increased substantially in 1935 and 1936 as new facilities and equipment were added.

TABLE 7.—COMPARATIVE BALANCE SHEETS OF EASTERN KANSAS COOPERATIVE ELEVATORS, 1931-32 TO 1935-36, WITH ITEMS EXPRESSED AS PERCENTAGES OF TOTAL ASSET VALUATIONS

Item	1931-32 (19 associations)	1932-33 (43 associations)	1933-34 (47 associations)	1934-35 (38 associations)	1935-36 (39 associations)
<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Current assets:					
Cash.....	6.2	4.6	4.5	9.0	10.9
Receivables.....	21.1	23.1	21.4	18.2	19.0
Inventories.....	18.8	18.6	22.4	24.7	23.1
Other.....	2.5	3.6	3.1	3.4	3.9
Total current.....	48.6	49.9	51.4	55.3	56.9
Fixed assets (depreciated value).....	51.4	50.1	48.6	44.7	43.1
Total assets.....	100.0	100.0	100.0	100.0	100.0
Liabilities:					
Current.....	42.2	38.7	39.4	36.2	32.3
Deferred.....	5.9	5.3	5.3	6.6	3.9
Total liabilities.....	48.1	44.0	44.7	42.8	36.2
Net worth:					
Capital stock.....	58.3	58.2	60.7	57.4	58.2
Surplus and reserves.....	-6.4	-2.2	-5.4	-.2	5.6
Total net worth.....	51.9	56.0	55.3	57.2	63.8
Total liabilities and net worth.....	100.0	100.0	100.0	100.0	100.0

Source of data: Annual surveys of cooperative elevators made by Farm Credit Administration and State colleges of Kansas and Oklahoma.

Only the group of Oklahoma associations failed to show improvement by reducing the ratio of indebtedness to total asset valuation during the 5-year period. The greatest improvement was in eastern Kansas where indebtedness was reduced from 48 percent of total assets in 1931-32 to 36 percent in 1935-36. The fact that indebtedness was so high in this area probably resulted in considerable pressure from creditors. It is in this area that many elevators have ceased operations in recent years, heavy debt burdens having forced liquidation. The elevators which now remain are the stronger ones financially.

In Oklahoma, the debt burden has been relatively light, operating gains have been more consistent, and the elevators have been inclined to distribute earnings as dividends rather than apply them on indebt-

TABLE 8.—COMPARATIVE BALANCE SHEETS OF NORTHWESTERN KANSAS COOPERATIVE ELEVATORS, 1931-32 TO 1935-36, WITH ITEMS EXPRESSED AS PERCENTAGES OF TOTAL ASSET VALUATIONS

Item	1931-32 (26 associa- tions)	1932-33 (33 associa- tions)	1933-34 (30 associa- tions)	1934-35 (27 associa- tions)	1935-36 (26 associa- tions)
Current assets:	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Cash.....	10.5	7.3	8.6	8.3	13.9
Receivables.....	21.9	23.6	23.7	20.8	22.2
Inventories.....	22.5	24.5	24.4	27.2	23.5
Other.....	7.3	8.2	8.5	8.1	7.3
Total current.....	62.2	63.6	65.2	64.4	66.9
Fixed assets (depreciated value).....	37.8	36.4	34.8	35.6	33.1
Total assets.....	100.0	100.0	100.0	100.0	100.0
Liabilities:					
Current.....	18.0	16.5	16.0	15.1	13.0
Deferred.....	1.3	2.5	1.1	4.7	4.9
Total liabilities.....	19.3	19.0	17.1	19.8	17.9
Net worth:					
Capital stock.....	63.7	57.5	50.6	51.9	54.1
Surplus and reserves.....	17.0	23.5	32.3	28.3	28.0
Total net worth.....	80.7	81.0	82.9	80.2	82.1
Total liabilities and net worth.....	100.0	100.0	100.0	100.0	100.0

Source of data: Annual surveys of cooperative elevators made by Farm Credit Administration and State colleges of Kansas and Oklahoma.

edness. In southwestern Kansas, the increase in debt in 1934-35 and 1935-36 was less than the increase in valuation of fixed assets. The elevators in this area have increased their long-term indebtedness, although their current liabilities have been decreasing. This was also true in less degree in northwestern Kansas and Oklahoma.

Attention has already been directed to the differences among areas in the equity of members in their associations (see table 1), and to the relatively poor position of eastern Kansas elevators in this respect. Table 7 indicates that the latter associations as a group changed from a deficit to a surplus position between 1931-32 and 1935-36 and that the members' equity increased on the average from about 52 percent of total assets to nearly 64 percent. In the other three areas the changes in net worth position of the associations were not very significant. As

TABLE 9.—COMPARATIVE BALANCE SHEETS OF SOUTHWESTERN KANSAS COOPERATIVE ELEVATORS, 1931-32 TO 1935-36, WITH ITEMS EXPRESSED AS PERCENTAGES OF TOTAL ASSET VALUATIONS

Item	1931-32 (38 associa- tions)	1932-33 (44 associa- tions)	1933-34 (41 associa- tions)	1934-35 (55 associa- tions)	1935-36 (55 associa- tions)
Current assets:	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Cash.....	13.2	10.5	8.0	9.3	10.0
Receivables.....	26.9	28.5	25.8	20.3	20.9
Inventories.....	12.9	12.3	17.3	17.7	14.0
Other.....	5.3	7.7	8.5	8.3	8.4
Total.....	58.3	59.0	59.6	55.6	53.3
Fixed assets (depreciated value)	41.7	41.0	40.4	44.4	46.7
Total assets	100.0	100.0	100.0	100.0	100.0
Liabilities:					
Current.....	20.4	16.2	14.3	13.0	11.7
Deferred.....	5.3	4.0	3.8	7.3	9.4
Total liabilities	25.7	20.2	18.1	20.3	21.1
Net worth:					
Capital stock.....	37.1	38.5	39.3	41.9	40.7
Surplus and reserves.....	37.2	41.3	42.6	37.8	38.2
Total net worth	74.3	79.8	81.9	79.7	78.9
Total liabilities and net worth	100.0	100.0	100.0	100.0	100.0

Source of data: Annual surveys of cooperative elevators made by Farm Credit Administration in cooperation with State colleges of Kansas and Oklahoma.

indicated in the discussion of indebtedness above, the members' equity in Oklahoma elevators decreased slightly during the 5-year period.

TABLE 10.—COMPARATIVE BALANCE SHEETS OF OKLAHOMA COOPERATIVE ELEVATORS, 1931-32 TO 1935-36, WITH ITEMS EXPRESSED AS PERCENTAGES OF TOTAL ASSET VALUATIONS

Item	1931-32 (52 associa- tions)	1932-33 (55 associa- tions)	1933-34 (60 associa- tions)	1934-35 (64 associa- tions)	1935-36 (67 associa- tions)
Current assets:	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Cash.....	8.5	7.3	8.6	9.8	12.4
Receivables.....	20.0	19.5	22.2	21.0	16.2
Inventories.....	13.7	15.8	17.6	16.7	15.7
Other.....	4.6	6.2	4.7	7.4	8.1
Total current.....	46.7	48.8	53.1	54.9	52.4
Fixed assets (depreciated value).....	53.3	51.2	46.9	45.1	47.6
Total assets.....	100.0	100.0	100.0	100.0	100.0
Liabilities:					
Current.....			13.3	11.5	12.9
Deferred.....			8.7	10.3	9.4
Total liabilities.....	18.8	21.1	22.0	21.8	22.3
Net worth:					
Capital stock.....	55.8	55.2	56.7	55.3	55.9
Surplus and reserves.....	25.4	23.7	21.3	22.9	21.8
Total net worth.....	81.2	78.9	78.0	78.2	77.7
Total liabilities and net worth.....	100.0	100.0	100.0	100.0	100.0

Source of data: Annual surveys of cooperative elevators made by Farm Credit Administration and State colleges of Kansas and Oklahoma.

Operating Results

The cooperative elevators of the Southwest hard winter wheat region operated under none too favorable conditions during the crop years 1931-32 to 1936-37. During the early years of the 6-year period the depression was at its height, inventories were being written down in value, and grain margins were small because of declining grain prices and the pressure of low price levels. During the later years of the 6-year period, drought conditions prevailed in the western sections of Kansas and Oklahoma, causing low grain volume and lessened demand for farm supplies.

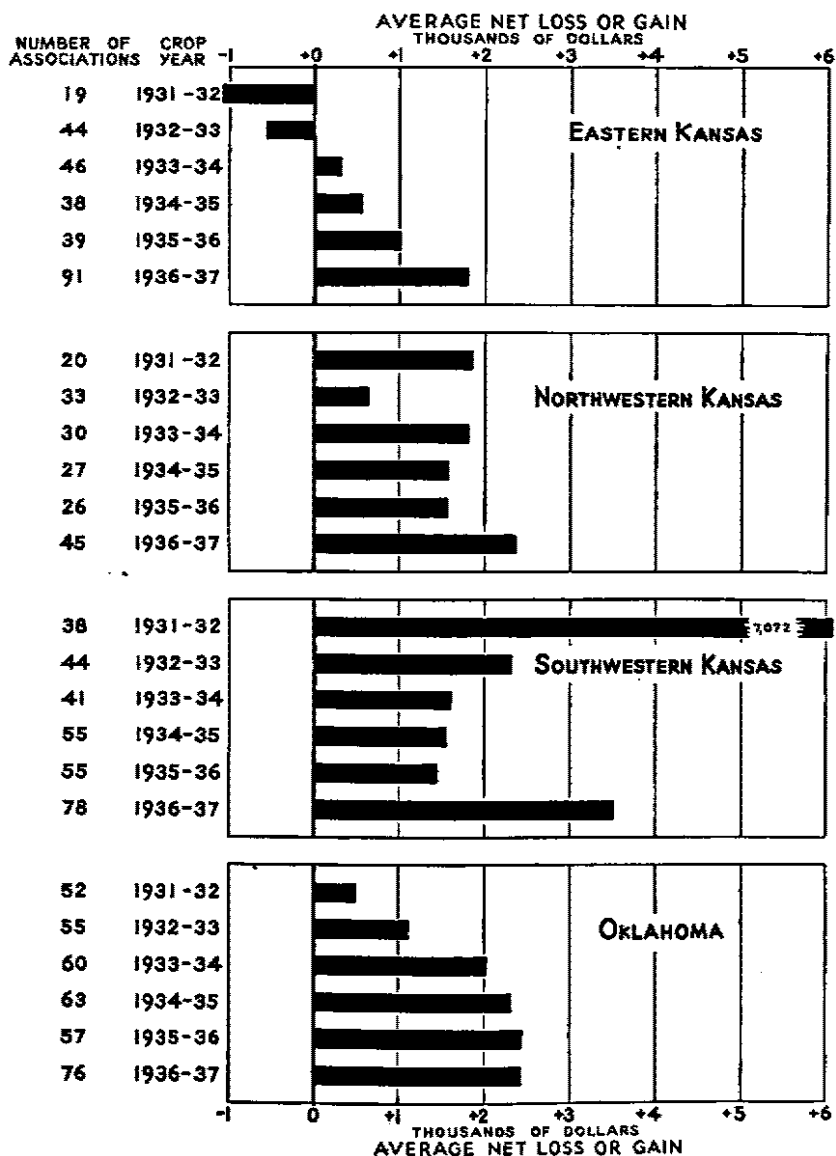


FIGURE 5.—AVERAGE YEARLY NET GAINS OR LOSSES OF COOPERATIVE ELEVATORS IN KANSAS AND OKLAHOMA, BY AREAS, 1931-32 TO 1936-37

Eastern Kansas elevators showed consistent improvement in operating results during the 6 years, and Oklahoma associations some improvement. In the other two areas, operating results varied mainly with crop conditions.

Despite the effects of depression and drought, the elevators studied maintained operating results on a reasonably favorable basis, and even showed substantial improvement in eastern Kansas and Oklahoma. The fact that the associations in each of the four areas were able to improve their financial status, as already cited, is suggestive that operating results must have been reasonably favorable.

The year-to-year changes in average net income of the associations in each of the four areas from which data were obtained are shown in figure 5. Eastern Kansas elevators showed consistent and substantial improvement in average net income during the 6-year period—from an average net loss of nearly \$1,100 in 1931-32 to an average net gain of more than \$1,800 in 1936-37. The associations in northwestern Kansas and southwestern Kansas failed to show a similar degree of improvement in operating results, although average net gains in 1936-37 were substantially larger than in the preceding 4 years. In 1931-32, the average net gain of southwestern Kansas elevators was unusually large because they handled a big volume of grain. The Oklahoma associations studied showed material improvement in average net income from 1931-32 to 1935-36, while the average net gain in 1936-37 was but slightly below the preceding year.

Of greater significance than average yearly net gains or losses of the four area groups of elevators studied is the proportion of associations in each area able to operate without loss. Figure 6 shows the percentage of elevators in each area which showed net incomes for each of the 6 years studied. On the whole, the operating position of the associations improved during the 6-year period, with the possible exception of northwestern Kansas. The crop year, 1931-32, with a large volume of grain to be handled, showed up especially well in the western Kansas areas. The following year, 1932-33, found operating results less favorable in each area, much less so in Kansas. In the next 4 crop years, operating experiences improved substantially in each area except northwestern Kansas. In the latter area, 1935-36 showed the lowest proportion of elevators reporting net gains of any year in the 6-year period, but 1936-37 brought some improvement—to the highest percentage in the 6-year period, but only slightly greater than 1931-32 and 1934-35.

Figure 6 is so prepared as to show not only the proportion of the reporting elevators having net gains each year in each area, but also the percentages with net incomes of \$1,000 or more. In eastern Kansas, the proportion of associations having larger net gains increased fivefold during the 6-year period. In the other three areas the year-to-year changes were less marked. In northwestern Kansas, the proportion reporting higher net gains was higher in 1936-37 than in any of the previous 5 years. In southwestern Kansas, 1936-37 was the best year since 1931-32. In Oklahoma, 1936-37 was less favorable

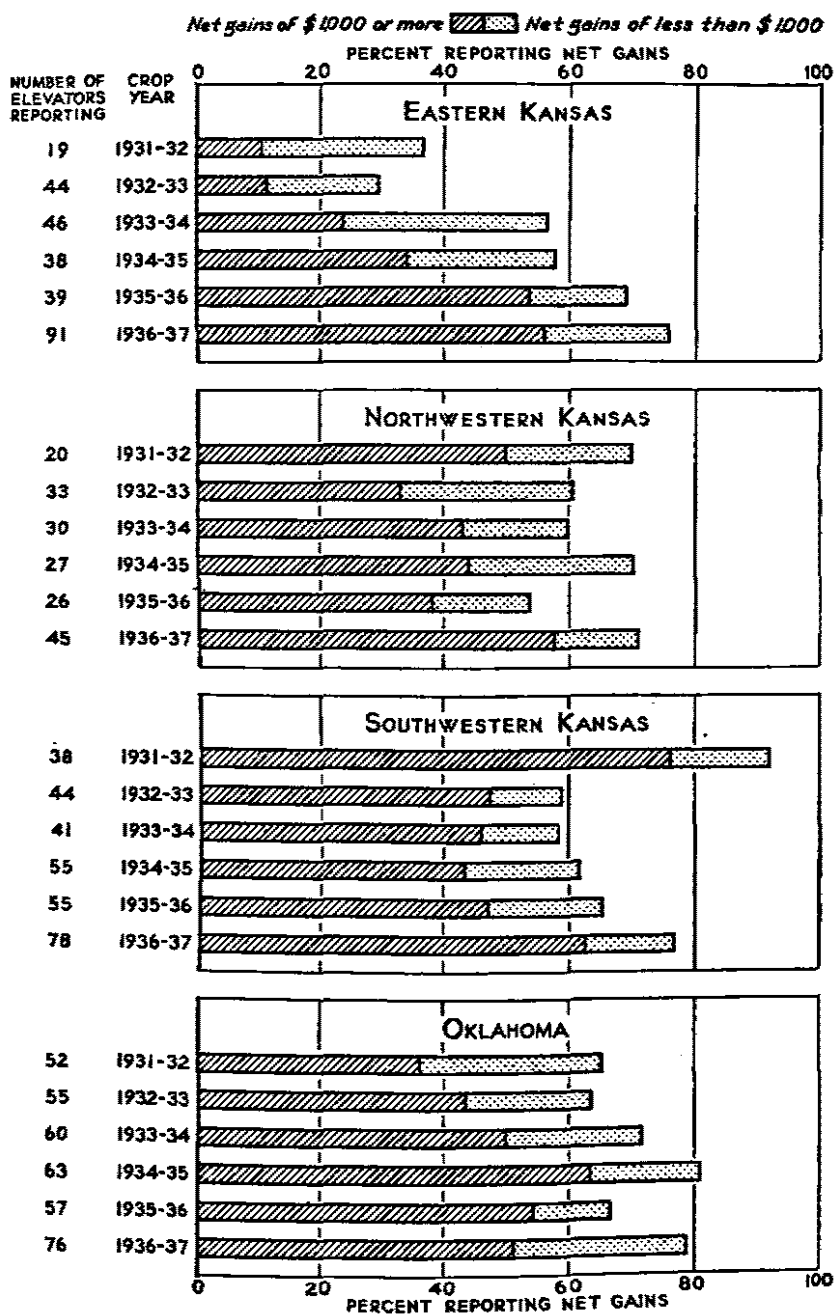


FIGURE 6.—PERCENTAGE OF KANSAS AND OKLAHOMA COOPERATIVE ELEVATORS HAVING NET GAINS, BY AREAS, 1931-32 TO 1936-37

The variations in operating experiences are closely related to crop conditions and grain volume, the latter being most variable in the two western Kansas areas.

than the preceding 2 years from the standpoint of the proportion reporting the higher net gains. This may be because a larger number of the northwestern and Panhandle associations, which suffered most from drought conditions in 1936-37, were included among the reporting elevators for this year than for the earlier years.

Yearly Operating Results

Tables 11, 12, 13, and 14 present some of the annual operating statistics, averaged for the groups of elevators studied in each of the four areas. They permit comparisons of business volume and other operating factors, not only between years of the 6-year period covered by the study, but also between areas. As indicated in the footnotes to these tables, the 1936-37 data (obtained from the 1937 survey of all cooperatives) appear fairly comparable with earlier years except in the case of the Oklahoma associations.

Grain volume showed much less variation from year to year in eastern Kansas and Oklahoma than in either of the other two areas. The year-to-year variations in side-line sales are due in large part to changing price levels, although the increases in dollar sales in eastern Kansas and Oklahoma suggest some increase in physical volume from 1932-33 and 1933-34 to 1935-36 and 1936-37.

The margins obtained for each bushel of grain sold were lower in the crop years, 1931-32 and 1932-33 than in the succeeding 3 years in each of the four areas. These margins were higher over the 5-year period in eastern Kansas and northwestern Kansas than in the other two areas. Northwestern Kansas elevators showed much greater year-to-year variations in these margins than did those in the other two areas.



FIGURE 7.—IMPORTANCE OF SIDE LINES TO ELEVATORS.

Part of facilities of an eastern Kansas association indicating the importance of petroleum products, feed, and other side lines, which now dominate its business operations.

The margins realized on side-line sales tended to decrease during the 5-year period, 1931-32 to 1935-36, except in northwestern Kansas. This decrease was greatest in southwestern Kansas. The margins obtained ran highest in southwestern Kansas and lowest in eastern Kansas. This difference in margins is due in part to differences in the kind of side lines handled. In southwestern Kansas a larger proportion of side-line sales consisted of petroleum products upon which the margins or mark-ups are higher than on coal, feeds, and seed which make up a large part of eastern Kansas side-line sales.

The relative importance of side lines in the business operations of the cooperative elevators of Kansas and Oklahoma is given by the percentage relationships of side-line sales to total sales, of side-line income to trading income,¹⁰ and of side-line income to total expense.

TABLE 11.—OPERATING STATISTICS OF EASTERN KANSAS COOPERATIVE ELEVATORS, 1931-32 TO 1936-37¹

Item	Unit	Average of—					
		19 asso- ciations, 1931-32	43 asso- ciations, 1932-33	46 asso- ciations, 1933-34	37 asso- ciations, 1934-35	38 asso- ciations, 1935-36	91 asso- ciations, 1936-37 ²
Grain handled.....	Busbels.....	84,930	87,826	73,902	77,308	88,386	81,069
Grain sales.....	Dollars.....	27,664	22,879	42,399	66,039	80,990	82,263
Side-line sales.....	Dollars.....	25,613	20,855	19,403	26,908	33,629	38,747
Gross margin per bushel of grain.....	Cents.....	3.3	3.4	4.0	3.7	4.0	-----
Gross margin per dollar of side-line sales.....	Cents.....	8.6	10.8	10.4	10.0	8.8	-----
Trading income.....	Dollars.....	4,349	4,214	4,965	5,526	6,490	6,593
Total expense.....	Dollars.....	6,076	5,358	5,092	5,349	6,205	5,214
Net operating income.....	Dollars.....	-1,726	-1,144	-127	177	285	1,379
Other income.....	Dollars.....	643	485	436	439	728	427
Net income.....	Dollars.....	-1,083	-659	309	616	1,013	1,806
Side-line sales as a percentage of total sales.....	Percent.....	48.1	47.7	31.4	29.2	29.3	32.0
Side-line income as a percentage of trading income.....	Percent.....	50.6	53.3	40.2	48.8	45.6	-----
Side-line income as a percentage of total expense.....	Percent.....	36.2	41.9	39.5	50.2	47.7	-----

¹ Data for 1936-37 were obtained from the general survey of all farm cooperatives made by the Farm Credit Administration in 1937, and include all eastern Kansas cooperative elevators whose reports were for the 1936-37 crop year and complete enough to use. Data were much less detailed than for the smaller number of elevators studied in the preceding 5 years.

² To test whether 1936-37 data were comparable with those for earlier years, the available 1936-37 data on grain volume and side-line sales for the associations studied in 1935-36 were taken from the 1937 survey reports. The tabulation for this group showed an average grain volume of 84,510 bushels as against 81,069 for the 91 elevators, and average side-line sales of \$38,997 as against \$38,747. This suggests that the elevators providing data from 1931-32 to 1935-36 were fairly representative of all associations in the area.

Source of data: Annual surveys of cooperative elevators made by Farm Credit Administration and State colleges of Kansas and Oklahoma.

¹⁰ By trading income is meant the gross income realized from trading operations in grain and side lines, with proper allowance for changes in inventory valuations.

TABLE 12.—OPERATING STATISTICS OF NORTHWESTERN KANSAS COOPERATIVE ELEVATORS, 1931-32 TO 1936-37¹

Item	Unit	Average of—					
		20 associations, 1931-32	23 associations, 1932-33	20 associations, 1933-34	27 associations, 1934-35	26 associations, 1935-36	45 associations, 1936-37 ²
Grain handled.....	Bushels.....	283,306	194,271	156,072	80,461	66,232	116,171
Grain sales.....	Dollars.....	97,106	60,200	91,303	74,606	60,064	118,506
Side-line sales.....	Dollars.....	44,006	33,471	35,060	45,098	47,067	36,538
Gross margin per bushel of grain.....	Cents.....	2.1	2.6	3.4	4.6	5.4	.....
Gross margin per dollar of side-line sales.....	Cents.....	11.2	10.7	11.8	11.4	12.5	.....
Trading income.....	Dollars.....	10,967	8,572	9,450	9,207	9,408	8,205
Total expense.....	Dollars.....	10,534	8,866	8,378	8,618	8,674	6,360
Net operating income.....	Dollars.....	433	—393	1,072	691	734	1,846
Other income.....	Dollars.....	1,437	933	747	999	777	622
Net income.....	Dollars.....	1,870	640	1,819	1,690	1,511	2,468
Side-line sales as a percentage of total sales.....	Percent.....	31.2	32.5	27.7	30.1	44.1	28.8
Side-line income as a percentage of trading income.....	Percent.....	46.6	41.8	43.8	56.6	62.0	.....
Side-line income as a percentage of total expense.....	Percent.....	48.8	40.4	48.4	60.5	68.8	.....

¹ See footnote 1, p. 25.

² To test whether 1936-37 data were comparable with those for earlier years, the available 1936-37 data on grain volume and side-line sales for the associations studied in 1935-36 were taken from the 1937 survey reports. The tabulations for this group showed an average grain volume of 107,538 bushels as against 116,171 for the 45 elevators, and average side-line sales of \$34,806 as against \$36,538. This suggests that the elevators providing data from 1931-32 to 1935-36 were reasonably representative of all associations in the area, although their grain volume might run a little smaller than the average of all associations.

Source of data: Annual surveys of cooperative elevators made by Farm Credit Administration and State colleges of Kansas and Oklahoma.

Both total sales and trading income are quite variable items because of year-to-year variations in grain volume. Hence, the year-to-year changes in the relation of side-line sales and side-line income to these items scarcely give a good measure of the changes in relative importance of side lines in the elevator business. (See fig. 7.)

Side-line sales usually vary less from year to year, especially in the western areas of the hard winter wheat region, than do grain sales. In many cases side lines have been added to the elevator business to provide a source of income to help pay operating expenses, especially in years of low grain volume. Then, too, the item of total expense varies much less from year to year than do the items of total sales and trading income. Hence changes in the relation of side-line income to total expense give a better measure of the relative importance of side lines in the business operations than do the other two percentage figures.

Although all those percentage relationships discussed above are shown in tables 11, 12, 13, and 14, particular attention is directed to

TABLE 13.—OPERATING STATISTICS OF SOUTHWESTERN KANSAS COOPERATIVE ELEVATORS, 1931-32 TO 1936-37¹

Item	Unit	Average of—					
		37 associations, 1931-32	44 associations, 1932-33	41 associations, 1933-34	53 associations, 1934-35	55 associations, 1935-36	78 associations, 1936-37 ²
Grain handled.....	Bushels.....	411,508	242,255	113,352	133,360	103,333	143,410
Grain sales.....	Dollars.....	179,046	87,968	76,787	117,694	93,847	146,778
Side-line sales.....	Dollars.....	34,107	25,872	26,300	34,991	36,192	42,463
Gross margin per bushel of grain.....	Cents.....	2.2	2.4	3.5	3.2	2.9	.....
Gross margin per dollar of side-line sales.....	Cents.....	22.8	17.9	16.6	13.8	13.8	.....
Trading income.....	Dollars.....	17,029	10,416	8,399	8,972	7,962	10,419
Total expense.....	Dollars.....	12,119	9,954	7,982	8,207	7,556	7,521
Net operating income.....	Dollars.....	4,910	462	387	765	406	2,898
Other income.....	Dollars.....	2,241	1,846	1,218	869	1,042	612
Net income.....	Dollars.....	7,151	2,308	1,605	1,634	1,448	3,510
Side-line sales as a percentage of total sales.....	Percent.....	16.0	22.7	26.5	22.3	27.8	22.5
Side-line income as a percentage of trading income.....	Percent.....	45.7	44.5	52.3	52.1	62.7	.....
Side-line income as a percentage of total expense.....	Percent.....	64.2	46.5	54.8	50.9	66.0	.....

¹ See footnote 1, p. 25.

² To test whether 1936-37 data were comparable with those for earlier years, the available 1936-37 data on grain volume and side-line sales for the associations studied in 1935-36 were taken from the 1937 survey reports. The tabulations for this group showed an average grain volume of 142,729 bushels as against 143,410 for the 78 associations, and average side-line sales of \$45,932 as against \$42,463. This suggests that the elevators providing data from 1931-32 to 1935-36 were fairly representative of all associations in the area.

Source of data: Annual surveys of cooperative elevators made by Farm Credit Administration and State colleges of Kansas and Oklahoma.

the last, the percentage which side-line income was of total expense. Data are available for the 5 crop years, 1931-32 to 1935-36, but not for 1936-37. In eastern Kansas, the percentage of total expense covered by side-line income increased from about 36 percent in 1931-32 to 48 percent in 1935-36. In Oklahoma, the increase was from 34 percent to 46 percent in the same period. This substantiates the statement already made that side lines have become of increasing importance in these two areas. The percentage increases just cited are particularly significant in view of the fact that grain volume showed little change from year to year in the two areas.

Although side lines showed less increase in dollar volume between 1931-32 and 1935-36 in the two western Kansas areas than in the other two areas, they remained more important as a source of income to the western associations. In both the northwestern and southwestern Kansas areas, side-line income on the average contributed toward payment of about two-thirds of total expenses as against less than half in the other two areas. For northwestern Kansas elevators,

one might conclude from the increase of side-line income from 48.8 percent of total expense in 1931-32 to 68.8 percent in 1935-36 that the side-line business had expanded materially. Side-line sales, in dollars, however, showed little change between the two periods. The increase in the percentage of side-line income to expense was due mainly to a very material decrease in expense made necessary by the big reduction in grain volume resulting from poor crops. This also holds true for southwestern Kansas associations. Because of the quite variable grain volume in these western areas, side-line activities have been particularly useful in providing a quite dependable source of income.

The foregoing discussion has presented a general view of the financial status of and operating results obtained by Kansas and Oklahoma cooperative elevators, and changes in such status and results during the 6-year period studied. On the whole, the associations have come

TABLE 14.—OPERATING STATISTICS OF OKLAHOMA COOPERATIVE ELEVATORS, 1931-32 TO 1936-37 ¹

Item	Unit	Average of—					
		52 asso- ciations, 1931-32	48 asso- ciations, 1932-33	54 asso- ciations, 1933-34	60 asso- ciations, 1934-35	51 asso- ciations, 1935-36	76 asso- ciations, 1936-37 ²
Grain handled.....	Bushels.....	145,902	133,567	135,513	140,712	146,232	114,949
Grain sales.....	Dollars.....	66,390	49,191	96,333	120,408	134,540	122,253
Side-line sales.....	Dollars.....	16,929	16,620	22,266	23,563	24,055	24,482
Gross margin per bushel of grain.....	Cents.....	2.8	3.1	3.4	3.3	3.6	.....
Gross margin per dollar of side-line sales.....	Cents.....	14.2	14.1	14.5	13.1	11.9	.....
Trading income.....	Dollars.....	6,530	6,543	7,895	7,714	9,278	8,020
Total expense.....	Dollars.....	6,992	6,397	7,228	6,984	8,726	6,721
Net operating income.....	Dollars.....	—462	—54	667	730	552	1,299
Other income.....	Dollars.....	948	1,599	1,569	1,634	2,198	1,126
Net income.....	Dollars.....	486	1,545	2,236	2,364	2,740	2,425
Side-line sales as a percentage of total sales.....	Percent.....	22.1	25.2	18.8	16.4	20.2	16.5
Side-line income as a percentage of trading income.....	Percent.....	26.8	35.8	40.8	30.9	43.6	.....
Side-line income as a percentage of total expense.....	Percent.....	24.4	35.5	44.6	44.1	46.4	.....

¹ See footnote 1, p. 25.

² To test whether 1936-37 operating data were comparable with those for earlier years, the available 1936-37 data on grain volume and side-line sales for the associations studied in 1935-36 were taken from the 1937 survey reports. The tabulations for this group showed an average grain volume of 140,926 bushels against 114,949 for the 76 associations, and average side-line sales of \$20,844 as against \$24,482. This indicates rather definitely that the elevators studied from 1931-32 to 1935-36 were somewhat above the average of all associations in the state in business volume. This is due in large part to the fact that no Panhandle and few northwestern Oklahoma elevators located in the area suffering most from drought were included in the groups studied in the earlier years.

Source of data: Annual surveys of cooperative elevators made by Farm Credit Administration and State colleges of Kansas and Oklahoma.

through a difficult period of depression and drought in excellent condition. Attention has been directed to certain differences in status and operations among the four areas which have come about because of fundamental differences in the conditions under which the elevators operated and will continue to operate.

Factors Influencing Operating Results

Certain of the tables (tables 2 and 6) already cited have brought out wide differences in capital investment and financial condition among the elevators within each area. These differences among individual associations are much greater than the differences between the averages presented for each area. They are brought about not only by such natural factors as location, size of trading area, and prevailing cropping practices, but are also the result of differences in management practices and policies.

The management problems of the Oklahoma and Kansas cooperative elevators are numerous and diverse. They involve matters of policy relating to organization set-up, membership, credit, and finance, as well as those more directly associated with the handling of grain and side lines. Some of the factors influencing operating results are discussed in the succeeding pages, and the experiences of the Kansas and Oklahoma associations are utilized to indicate their significance.

Measuring Operating Efficiency

To facilitate comparisons among elevator associations, it is desirable to have some measure of the effectiveness of their operations. A fully satisfactory yardstick is difficult to find. If the primary purpose of a cooperative elevator were to return large dividends on the capital investment, then efficiency might be indicated by the percentage which earnings were of the investment. Farmer-members of a cooperative elevator are interested more in the cost and quality of the service it gives than in its earning possibilities. The capital investment they make is therefore a secondary though necessary consideration in getting the service they want.

In view of the members' primary interest in service rather than earning possibilities, the effectiveness of a cooperative elevator might be indicated best by its ability to get the full market price for their grain or to purchase supplies of acceptable quality at reasonable cost, and to perform these services at the lowest possible unit cost. To develop such measures of efficiency would call for much more data than were obtained from the Kansas and Oklahoma associations. Hence, if comparisons of operating efficiency are to be made, other measures than those just indicated must be used.

Considering the conditions under which cooperative elevators operate, net income provides one measure of the effectiveness of operation. Cooperative elevators are in daily competition with other business agencies offering similar service. They therefore cannot get far out of line in quality of service given or in the cost of giving that service without losing patronage. Those able to show a net income at the end of their business year demonstrate their ability to meet competition, cover operating expenses, and safeguard the investment of their stockholders. Lacking better measures of effective operation, net income is used for that purpose on the succeeding pages.

Membership ¹¹

Members of a cooperative elevator association in most cases are its patrons as well as its stockholders. As has already been suggested, their first interest in the association is in the kind, quality, and cost of service it renders—the patrons' viewpoint. Their interest as stockholders—the investors' viewpoint—is secondary. Because of this dual relationship, the membership problem is of particular importance in cooperative enterprises.

The way in which membership matters are handled by the management of a cooperative elevator has much to do with its financial progress and operating success. As an operating factor, its influence is indirect and shows itself not so much in any given year as over a period of years.

The membership problem among farmers' elevators is particularly acute in many cases because of the age of the organizations. Many were started before there were adequate cooperative laws in the statute books, and at a time when cooperative experience was very limited. At the outset they were largely owned and controlled by producers, who were the ones benefiting from the elevators' activities. The necessity for incorporating in the set-up provisions which would assure continuance of producer ownership and control was not realized. In the course of years, many elevators have passed from the ownership of farmers into the hands of nonproducers through death or the retirement of original farmer-stockholders or concentration of stock in the hands of a few whose interest was in stock dividends.

The discussion of membership which follows is concerned mainly with the membership status of Kansas and Oklahoma cooperative elevators and its relation to various operating factors. Before pro-

¹¹ Membership, as the term is used in this discussion, implies ownership of capital stock, and hence a capital interest on the part of the member in the association. In a few cases, members have subscribed for capital stock and given notes covering all or part of the value of shares. In cases where patronage dividends of nonmembers are applied on shares, shares are not issued nor is membership granted until the full value is earned or the unearned balance paid by the patrons desiring membership.

ceeding with the discussion there are enumerated below some of the phases of the problem which require the consideration of the elevator managements:

1. Providing means whereby any patron of the association may readily become a member. To do this, patronage dividends accruing to nonmembers may be credited toward payment for shares of capital stock of memberships. The value of shares of stock may well be held to a reasonable amount so that the bar to stock ownership will not be too great, especially in the case of tenant-patrons.
2. Providing means whereby memberships of those ceasing to be producers or patrons can be terminated readily.
3. Determining the policies to be followed in the equitable distribution of net savings or losses of the association to the members.
4. Keeping the members accurately informed concerning all the affairs and problems of the association.
5. Providing means whereby the members can and will exercise their control of the association.
6. In general, adopting policies which will assure the patronage of members, and make them active supporters of their own organization.

Membership Status

In 1937, according to the general survey of cooperatives, the average membership of the 271 Kansas cooperative elevators was 140, and of the 91 Oklahoma associations, 148. The smallest membership reported by any Kansas elevator was 20, and the largest, 1,200. In Oklahoma, the smallest membership was 10, and the largest 750. In each State, the associations with largest memberships had elevator facilities at a number of shipping points and served rather large areas. Considering the three areas of Kansas, the cooperative elevators in northwestern Kansas had a larger average membership—164—than did the eastern and southwestern associations, with average memberships of 130 and 135, respectively.

Table 15 shows the distribution of the 263 Kansas associations, by areas, and of the 91 Oklahoma elevators on the basis of size of membership, whether small, intermediate or large. Eastern Kansas and Oklahoma had the largest proportion of associations, 42 percent and 38 percent, respectively, in the small membership group of less than 100 members. Northwestern Kansas and Oklahoma, with 22 percent and 21 percent, respectively, had the largest percentages of elevators with large memberships—over 200 members. In each of the four areas, the

largest number of associations were in the intermediate group—100 to 199 members—which included approximately 50 percent of the associations in eastern and southwestern Kansas, 43 percent in northwestern Kansas and 41 percent in Oklahoma.

TABLE 15.—DISTRIBUTION OF KANSAS AND OKLAHOMA COOPERATIVE ELEVATORS BY MEMBERSHIP GROUPS, 1937 SURVEY

Number of members	Eastern Kansas		Northwestern Kansas		Southwestern Kansas		Oklahoma	
	Number of associations	Percent- age of total	Number of associations	Percent- age of total	Number of associations	Percent- age of total	Number of associations	Percent- age of total
Less than 100.....	42	40.8	21	35.0	35	35.0	35	38.4
100 to 199.....	51	49.5	26	43.3	50	50.0	37	40.7
200 or more.....	10	9.7	13	21.7	15	15.0	19	20.9
Total.....	103	100.0	60	100.0	100	100.0	91	100.0

Source of data: 1937 survey of cooperative associations made by Farm Credit Administration.

Membership and Patronage

Data obtained for 6 years in the surveys of cooperative elevators in Kansas and Oklahoma indicate the extent to which the members supported their own associations with their patronage. The yearly figures show member patronage ranging from 63 percent in eastern Kansas in 1931-32 to 80 percent in Oklahoma in 1936-37. (See fig. 8.) The proportion of members who were patrons ran highest in Oklahoma (from 77 percent in 1934-35 to 80 percent in 1936-37) and lowest in eastern Kansas (from 63 percent in 1931-32 to 72 percent in 1936-37). Figure 8 offers evidence of some improvement during the 6-year period studied in the support which members were giving their associations in each of the four areas. This improvement was least in southwestern Kansas, and greatest in eastern and northwestern Kansas where it was most needed.

Not all the members of the elevators are producers of farm products and in position to give business to their associations. In Oklahoma, for example, taking an average of the reported percentages of farm producers among members, as shown in the 1937 survey, 91 percent were so classified. Considering only these producer-members, 88 percent were reported as patrons. In Kansas, the percentages which member-patrons were of producer-members (determined as indicated for Oklahoma) were somewhat lower, being 82, 85, and 87 percent in the eastern, northwestern, and southwestern areas, respectively.

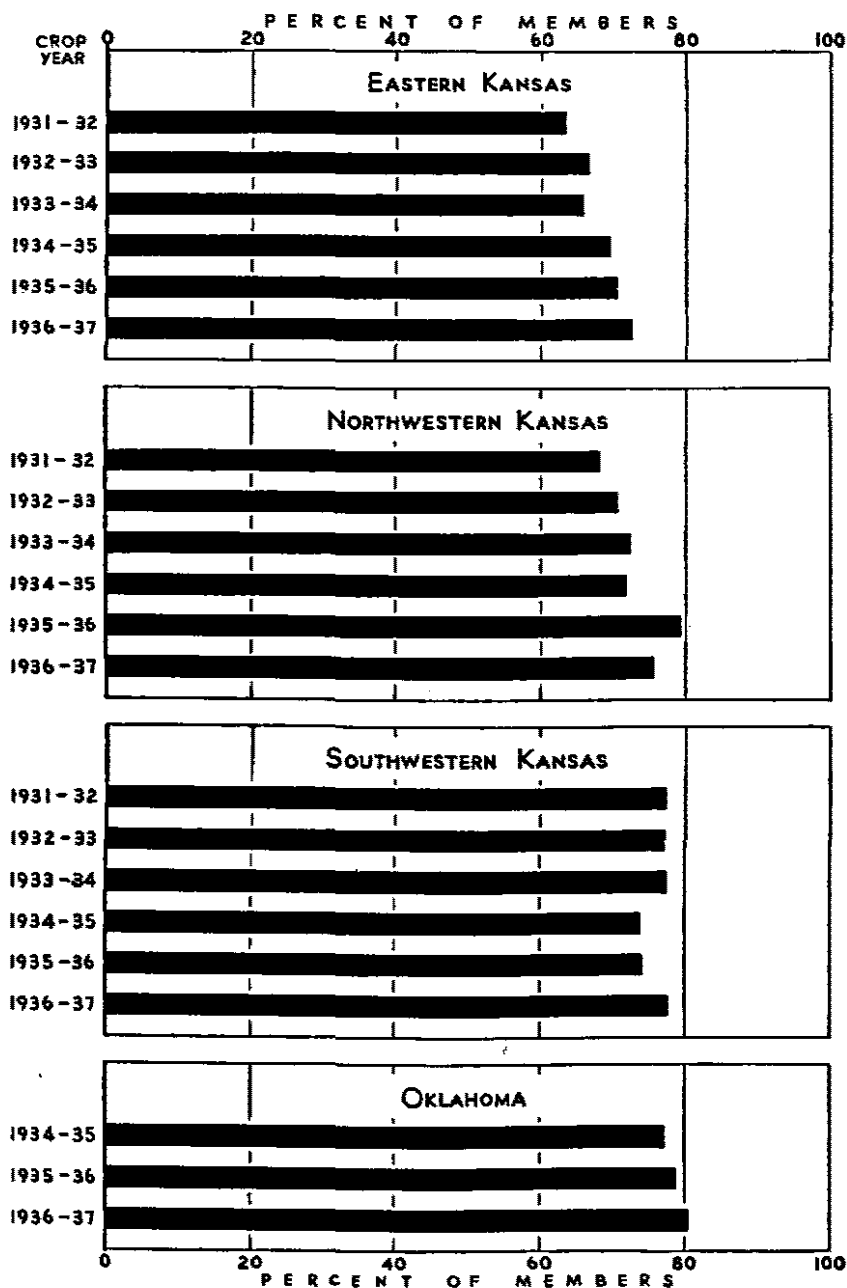


FIGURE 8.—PERCENTAGE OF MEMBERS OF KANSAS AND OKLAHOMA COOPERATIVE ELEVATORS WHO PATRONIZE THEIR OWN ASSOCIATIONS, BY AREAS, 1931-32 TO 1936-37.¹

An increasing proportion of the members of the grain cooperatives supported their own associations during the 6-year period.

¹ Only 8 years of data were available for Oklahoma.

The rather high proportions of producer-members doing business with the Kansas and Oklahoma cooperative elevators suggest that these associations were giving generally satisfactory service. Other agencies were accessible to nearly all members. Members are seldom so tied to their association that they will continue to patronize it in the face of high operating costs or poor service. It is only by providing good service at reasonable cost that the cooperative can fully justify its existence.

Membership and Business Volume

The main advantage which a cooperative business organization holds over any other type of business agency lies in a membership made up of those who use its services. Through the personal and financial interest of the members in their own association, business volume can be obtained at minimum cost. To make the most of this advantage, it is essential that membership problems receive thoughtful and constant attention from the management.

The close relationship between membership and business volume is evidenced by data on these two factors available in the records of Kansas and Oklahoma cooperative elevators. This information was available for a substantial number of associations in each of the crop years, 1931-32 to 1935-36, and for more than three-fourths of them in 1936-37. Since these elevators were established primarily for the purpose of handling grain, attention is directed first to the relation between size of membership and grain volume.

The annual records of the elevators studied have been separated on an area basis, but the records for all 6 crop years have been considered together. Table 16 shows the number and percentage of the association records which reported handling 100,000 or more bushels of grain for each of three membership groups; less than 100 members, 100 to 199 members, and 200 or more members. Cooperative elevators in Kansas and Oklahoma which handle less than 100,000 bushels of grain annually are distinctly handicapped in holding their expense per bushel low enough to permit effective operation and to meet the competition of other grain-handling agencies.

Only 9 percent of the eastern Kansas associations with less than 100 members handled as much as 100,000 bushels of grain. In contrast, 41 percent of the southwestern Kansas elevators with small membership handled 100,000 bushels or more. In each of the four areas, when the association membership exceeded 200, the chances of handling 100,000 bushels or more increased materially. The northwestern Kansas elevators showed the least relation between large membership and large grain volume. In that area, the effects of drought were most pronounced during the 6-year period studied and resulted in almost complete failure of grain crops in certain years in the trade territories of many associations.

TABLE 16.—GRAIN VOLUME OF KANSAS AND OKLAHOMA COOPERATIVE ELEVATORS AS INFLUENCED BY NUMBER OF MEMBERS, 1931-32 TO 1936-37

Area and number of members	Number of elevator records studied	Elevators handling 100,000 bushels or more of grain	
		Number	Percentage of elevators in group
Eastern Kansas:			
Less than 100.....	106	10	9.4
100 to 199.....	145	45	31.0
200 or more.....	22	9	40.9
Total in area.....	273	64	23.4
Northwestern Kansas:			
Less than 100.....	47	19	40.4
100 to 199.....	101	42	41.6
200 or more.....	30	16	53.3
Total in area.....	178	77	43.3
Southwestern Kansas:			
Less than 100.....	87	36	41.4
100 to 199.....	144	98	68.1
200 or more.....	60	50	83.3
Total in area.....	291	184	63.2
Oklahoma:			
Less than 100.....	54	17	31.5
100 to 199.....	89	59	66.3
200 or more.....	36	23	63.9
Total in area.....	179	99	55.3

Source of data: Annual surveys of cooperative elevators made by Farm Credit Administration and State colleges of Kansas and Oklahoma. Oklahoma records are for only the 3 years, 1934-35 to 1936-37.

The number of members needed to supply a given volume of grain obviously depends on the size of their grain-growing operations. Table 16 indicates that associations in eastern Kansas, an area of smaller farms and relatively low production of grain for cash sale, need a much larger membership to assure a grain volume of 100,000 bushels or more than do those in southwestern Kansas, an area of extensive grain farming.

Since the business volume of cooperative elevators is made up in part of farm supplies handled as side lines to grain operations, a more complete measure of business volume is total sales of both grain and side lines. Table 17 shows the relation between this measure of business volume and membership for each of the four areas. Data are for 1936-37 only, and not for 6 years as in the case of grain volume (see table 16). That associations having less than 100 members were distinctly handicapped in their efforts to obtain business volume is suggested by the low proportion of elevators with small member-

TABLE 17.—BUSINESS VOLUME (DOLLAR SALES) OF KANSAS AND OKLAHOMA COOPERATIVE ELEVATORS AS INFLUENCED BY NUMBER OF MEMBERS, 1936-37

Area and number of members	Number of elevator records studied	Elevators reporting sales of \$100,000 or more	
		Number	Percentage of group total
Eastern Kansas:			
Less than 100.....	38	8	21.1
100 to 199.....	44	31	70.4
200 or more.....	9	7	77.8
Total in area.....	91	46	50.6
Northwestern Kansas:			
Less than 100.....	20	6	30.0
100 to 199.....	16	10	62.5
200 or more.....	9	9	100.0
Total in area.....	45	25	55.5
Southwestern Kansas:			
Less than 100.....	26	11	42.3
100 to 199.....	40	33	82.5
200 or more.....	12	11	91.7
Total in area.....	78	55	70.5
Oklahoma:			
Less than 100.....	29	10	34.5
100 to 199.....	31	21	67.7
200 or more.....	16	13	81.3
Total in area.....	76	44	57.9

Source of data: The elevator records providing 1936-37 information obtained in the 1937 survey of cooperative associations made by Farm Credit Administration. Oklahoma records are for only the 3 years, 1934-35 to 1936-37.

ship which had sales of \$100,000 or more. Comparing the four areas in this regard, eastern Kansas elevators, operating in an area of smaller farms, were in greatest need of memberships exceeding 100 in order to obtain large business volume. In contrast, 42 percent of the south-

TABLE 18.—GRAIN VOLUME OF KANSAS AND OKLAHOMA COOPERATIVE ELEVATORS AS INFLUENCED BY NUMBER OF MEMBER-PATRONS, 1931-32 TO 1936-37

Area and number of member-patrons ¹	Number of elevator records studied	Elevators handling 100,000 bushels or more of grain	
		Number	Percentage of elevators in group
Eastern Kansas:			
Less than 75.....	136	16	11.8
75 to 149.....	119	37	31.1
150 or more.....	18	11	61.1
Total in area.....	273	64	23.4
Northwestern Kansas:			
Less than 75.....	62	22	35.5
75 to 149.....	84	36	42.9
150 or more.....	32	19	59.4
Total in area.....	178	77	43.3
Southwestern Kansas:			
Less than 75.....	89	31	34.8
75 to 149.....	129	87	67.5
150 or more.....	73	66	90.4
Total in area.....	291	184	63.2
Oklahoma:			
Less than 75.....	66	19	28.8
75 to 149.....	70	46	65.7
150 or more.....	43	34	79.1
Total in area.....	179	99	55.3

¹ The member-patronage grouping was fixed at less than 75, 75-149, and 150 or more, because the membership grouping was less than 100, 100-199, and 200 or more. Information already cited indicated that two-thirds to three-fourths of the members patronized the associations in the four areas. In view of this fact, the member-patronage grouping was made on the basis of three-fourths of the members used in the membership grouping.

Sources of data: Annual surveys of cooperative elevators made by Farm Credit Administration and State colleges of Kansas and Oklahoma. Oklahoma records are for only the 3 years, 1934-35 to 1936-37.

western Kansas elevators with less than 100 members had sales totaling \$100,000 or more. In each area, a membership in excess of 100 gave reasonable assurance of sales volume exceeding \$100,000, while a membership of 200 or larger improved still more the chances of large business volume.

Member Patronage and Business Volume

Members must patronize their own associations if they are to be effective in providing business volume. Hence, the number of member-patrons is more important from this standpoint than the number of members. Table 18 shows the relation between number of member-patrons of Kansas and Oklahoma cooperative elevators and their grain volume during the 6 crop years, 1931-32 to 1936-37, in Kansas, and the 3 years, 1934-35 to 1936-37, in Oklahoma. A large number of member-patrons definitely improved chances of associations to handle 100,000 bushels or more of grain in each of the four areas.

Comparing table 16 and table 18, there is evidence of a more definite relation between number of member-patrons and grain volume than between number of members and grain volume. Judging from the data presented in table 18, it would seem essential for eastern Kansas elevators to have 75 or more member-patrons, and very desirable to have 150 or more in order to assure sufficient grain volume. In less degree, the same would hold true in northwestern Kansas, where the crop risk is great. In southwestern Kansas and Oklahoma, 75 to 149 member-patrons assured a grain volume of 100,000 bushels or more in two cases out of three in the 6 years covered by this study.

Table 19 shows the relation between number of member-patrons and business volume as measured by dollar sales of both grain and side lines. It is readily apparent that a large number of member-patrons and large business volume usually go together. The table shows the number and percentage of associations having sales of \$200,000 or more as related to number of member-patrons, as well as of those having sales of \$100,000 or more. It was an exceptional association with less than 75 members which could report a business volume of \$200,000 or more during the 6 crop years studied.

It may be noted in tables 17 and 19 that there were associations in each of the four areas which had a small number of members and member-patrons and yet had good business volume. Either they were fortunate in having very large producers as member-patrons, or depended on the patronage of nonmembers for a large part of their business volume. In this latter case, patronage is gained largely by a price incentive or other competitive means and must be maintained on that basis. An association with small membership and largely dependent on nonmember patronage, lacks in large degree the inherent

advantage which a cooperative ordinarily has, namely, to obtain business volume at a minimum cost through the personal and financial interest of member-patrons in their own organization.

Membership is a factor which is definitely within the power of the management to influence. As already suggested, it may be neglected for a time without apparent effect, but in the long run it shows up as a vital factor. Drought and short crops had their influence on cooper-

TABLE 19.—BUSINESS VOLUME (DOLLAR SALES) OF KANSAS AND OKLAHOMA COOPERATIVE ELEVATORS AS RELATED TO NUMBER OF MEMBER-PATRONS, 1931-32 TO 1936-37

Area and number of member-patrons	Num-ber of elevator records studied	Elevators having sales volume of \$100,000 or more		Elevators having sales volume of \$200,000 or more	
		Num-ber	Percentage of elevators in group	Num-ber	Percentage of elevators in group
Eastern Kansas:					
Less than 75.....	135	18	13.3	3	2.2
75 to 149.....	119	54	45.4	16	13.4
150 or more.....	18	11	61.1	5	27.8
Total in area.....	272	83	30.5	24	8.8
Northwestern Kansas:					
Less than 75.....	62	12	19.4	1	1.6
75 to 149.....	84	33	39.3	8	9.5
150 or more.....	32	28	87.5	19	59.4
Total in area.....	178	73	41.0	28	15.7
Southwestern Kansas:					
Less than 75.....	89	25	28.1	3	3.4
75 to 149.....	129	86	66.7	30	23.3
150 or more.....	73	68	93.1	44	60.3
Total in area.....	291	179	61.5	77	26.5
Oklahoma:					
Less than 75.....	62	20	32.3	0	0
75 to 149.....	68	51	75.0	14	20.6
150 or more.....	44	41	93.2	28	63.6
Total in area.....	174	112	64.4	42	24.1

Source of data: Annual surveys of cooperative elevators made by Farm Credit Administration and State colleges of Kansas and Oklahoma. Oklahoma records are for only 3 years, 1934-35 to 1936-37.

ative elevators during the 6-year period covered by this study, yet most of the associations with large and loyal memberships reported sufficient volume to keep unit costs of operation at a reasonable figure. It is in such adverse years that the results of effective membership work on the part of the management become most apparent.

Membership and Capital Structure

Membership in a cooperative involves the dual responsibility of patron, and contributor to its financial structure. Through patronage the business volume is provided. In addition, the membership must assume the responsibility of providing the capital to conduct the business. If too large a capital contribution is required for membership, then membership is discouraged and patronage may be lost. If the capital contribution is too small, then the association may be so weak financially that it is handicapped in operating and patronage is driven away.

One aspect of this problem has to do with the par value of shares of capital stock. In the early days of the farmers' elevator movement, the tendency was to have shares of high par value. A rather large investment per member in plant and equipment was necessary, and the uncertainty regarding the future of the organization made it difficult to attract outside capital in case there was any inclination to

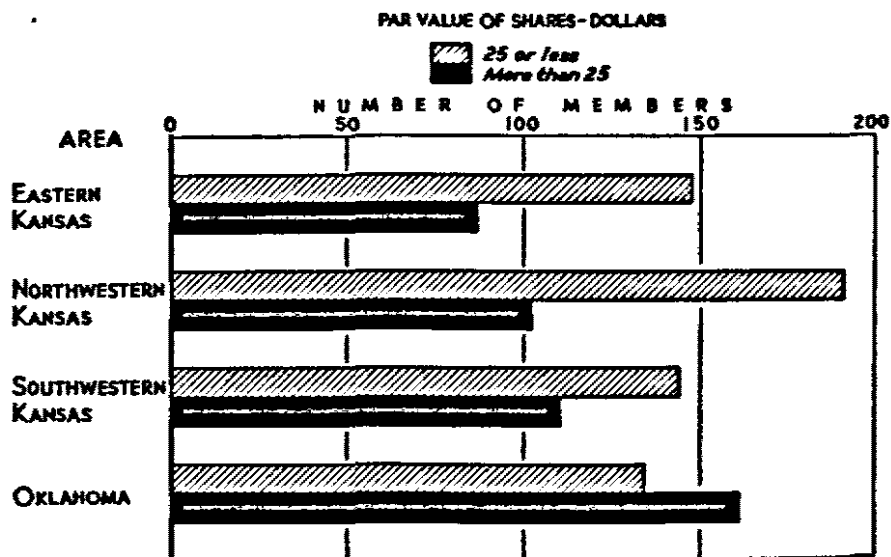


FIGURE 9.—RELATION OF PAR VALUE OF SHARES OF CAPITAL STOCK TO AVERAGE MEMBERSHIP OF KANSAS AND OKLAHOMA COOPERATIVE ELEVATORS, BY AREAS, 1937.

In general, associations having capital stock of low par value held a distinct membership advantage over those with high par value stock.

Source: Data from 1937 survey of cooperatives made by Farm Credit Administration.

do so. The situation changed, however, as time passed. The facilities have been acquired, and capital needs are less urgent than the need for widespread support among the producers of the communities served, landlords and tenants as well as owner-operators. To meet this latter need, it has proven feasible to have capital stock of low par value which is within reach of nearly all producers.

The information available regarding the Kansas and Oklahoma farmers' elevators shows that those with capital stock of low par value tended to have a distinct membership advantage over those having shares of high par value. Figure 9 offers evidence of this tendency. The average memberships of associations with shares of \$25 or less were 148, 191, and 144 for eastern, northwestern, and southwestern Kansas, respectively, as against 87, 102, and 110 for associations with shares of more than \$25 par value. In Oklahoma the tendency seems to be in the other direction.

Table 20 presents the relation of par value of capital stock to membership from a different standpoint. A higher proportion of the Kansas associations with capital stock of low par value had between 100 and 199 members than did those with high par value stock. And a still higher proportion of the low par value group had memberships of 200 or more. This confirms the information brought out by figure 9.

For the Oklahoma associations, there seems to be some inconsistency between figure 9 and table 20. Whereas, the average membership of

TABLE 20.—NUMBER OF MEMBERS OF KANSAS AND OKLAHOMA COOPERATIVE ELEVATORS AS RELATED TO THE VALUE OF SHARES OF CAPITAL STOCK, 1937 SURVEY

Number of members	Eastern Kansas				Northwestern Kansas				Southwestern Kansas				Oklahoma			
	Shares— \$25 or less		Shares— over \$25		Shares— \$25 or less		Shares— over \$25		Shares— \$25 or less		Shares— over \$25		Shares— \$25 or less		Shares— over \$25	
	Number of associations		Number of associations		Number of associations		Number of associations		Number of associations		Number of associations		Number of associations		Number of associations	
	Percentage of total	Percentage of total	Percentage of total	Percentage of total	Percentage of total	Percentage of total	Percentage of total	Percentage of total	Percentage of total	Percentage of total	Percentage of total	Percentage of total	Percentage of total	Percentage of total	Percentage of total	Percentage of total
Less than 100....	25	34.2	17	56.7	10	23.8	11	61.1	13	23.2	22	51.2	18	37.5	17	39.6
100 to 199.....	38	52.1	13	43.3	20	47.6	6	33.3	32	57.1	18	41.8	20	41.7	17	36.5
200 or more.....	10	13.7	0	0	12	28.6	1	5.6	11	19.7	3	7.0	10	20.8	9	21.0
Total.....	73	100.0	30	100.0	42	100.0	18	100.0	56	100.0	43	100.0	48	100.0	48	100.0

Source of data: 1937 survey of cooperative associations made by Farm Credit Administration.

elevators with high par value stock was considerably larger than that of the low par value group, yet table 20 shows a slightly higher percentage of the low par value group with 100 or more members (82.5 percent as against 60.5 percent). In checking this apparent inconsistency, it was found that every one of the seven associations operating facilities at more than one shipping point was in the high par value group. When the average membership per shipping station served by a cooperative elevator was determined, the average for the high par value group was 119 members as against the 136 for the low par value group.

Checking into the matter further, it was found that nearly half of the Oklahoma associations with shares of \$25 or less had been organized since 1933 or were elevators which had been taken over by a regional pooling organization in the twenties but which have since been reorganized as local associations. Such associations, therefore, have not had a long period in which to build up membership. Furthermore, crop and financial conditions have not been favorable for disposal of capital stock to producers since their organization or reorganization.

Member Patronage and Net Income

Data obtained from the Kansas and Oklahoma cooperative elevators show a rather definite relationship between number of member-patrons and net income. In figure 10 these data have been combined for the 6 crop years, 1931-32 to 1936-37. In each of the four areas a smaller percentage of associations with less than 75 member-patrons reported net gains than did those with a larger number of member-patrons. The elevators with 150 or more member-patrons were in the most favorable position to show good operating results.

Figure 10 not only shows the number and percentage of the reporting associations having net gains but also shows the number and percentage having net gains of \$1,000 or more. The elevators with a large number of member-patrons most frequently had incomes exceeding \$1,000. It is apparent, therefore, that a large number of member-patrons definitely improves the prospects for realizing a substantial net income, thus giving evidence of ability to meet competition and safeguard the capital investment of the members.

The relationships between membership and business volume and operating results, shown in preceding tables, emphasize the importance of membership to a cooperative elevator. It is a factor which is to a large extent within the control of management. The manager and directors responsible for operation of the cooperative cannot change weather or type of farming as it may affect business volume, but they can influence the number and loyalty of the members by the attention they give to the membership problem and the way in which they operate the business.

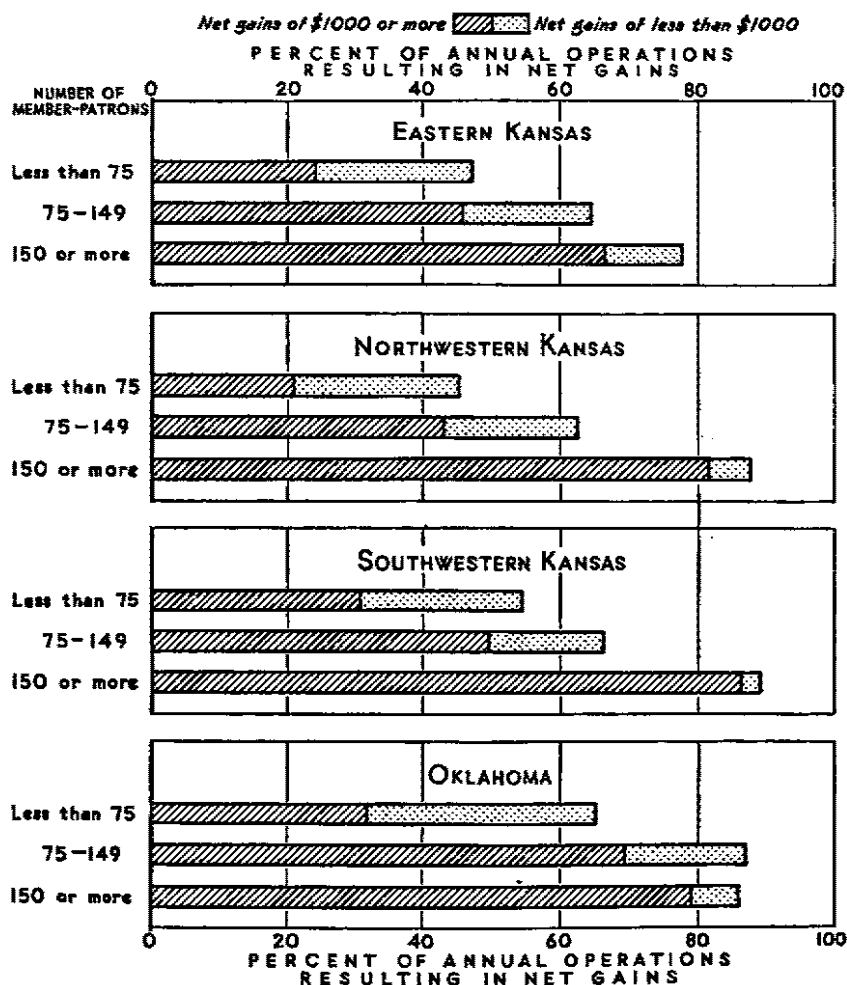


FIGURE 10.—RELATION OF NUMBER OF MEMBER-PATRONS TO THE PERCENTAGE OF ANNUAL OPERATIONS OF KANSAS AND OKLAHOMA COOPERATIVE ELEVATORS RESULTING IN NET GAINS, BY AREAS, 1931-32 TO 1936-37.¹

Elevators with 150 or more member-patrons were in most favorable position to show good operating results as reflected by net gains.

Volume as an Operating Factor

Attention has just been directed to the close relationship between a large number of member-patrons and a substantial net gain. This is due of course to the influence of member patronage on business

¹ Oklahoma records were for only the 3 years, 1934-35 to 1936-37, because membership data are lacking for the earlier years.

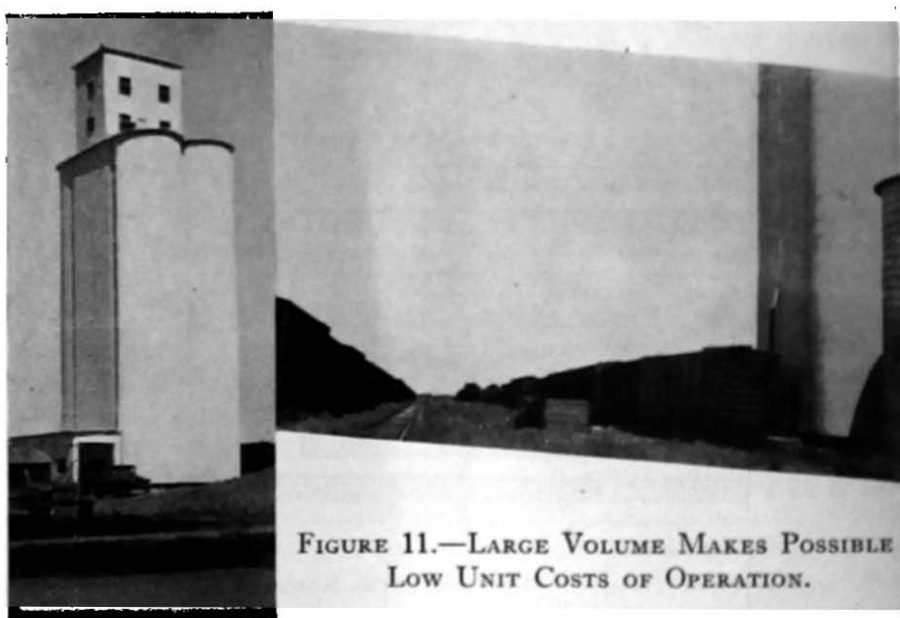


FIGURE 11.—LARGE VOLUME MAKES POSSIBLE
LOW UNIT COSTS OF OPERATION.

Left, cooperative elevator of concrete construction equipped to handle large volume rapidly and efficiently. Right, the railroad prepares for harvest rush of grain to market. Cars lined up on a local station's sidetracks in early June.

volume. Large volume usually makes possible low unit costs of operation and in this way improves the opportunity for net gain. (See fig. 11.)

Volume, insofar as it is affected by crop conditions, is largely beyond the control of the management of the cooperative elevator. As already suggested, however, it is influenced by the support given the elevator by the community it serves, and to this extent it is definitely a management problem. The management controls in some degree the kind and cost of service given by the association. It considers the advisability of adding or extending side-line activities as a means to increase business volume. In these ways and many others, management does have a significant influence on business volume.

Data on the operations of Kansas and Oklahoma cooperative elevators during the 6-year period, 1931-32 to 1936-37, lend support to the statement that large business volume, through its influence on unit costs of operation, increases chances for net gains. Since the elevator's business volume usually includes both grain and side lines, the influence of each has been considered.

Grain Volume and Net Income

Considering only that part of the business volume consisting of grain, 81 percent of the annual records of Kansas and Oklahoma elevators studied during the 6-year period 1931-32 to 1936-37 which reported handling 100,000 or more bushels of grain, had net gains, and 68 percent had net gains of \$1,000 or more. The percentages having net gains varied from 74 percent in eastern Kansas to 83 percent in Oklahoma (see table 21). The percentages having net gains of \$1,000 or more varied from 62 percent in northwestern Kansas to 72 percent in southwestern Kansas.

Table 21 also shows the percentages of elevators handling 200,000 bushels of grain or more which had net gains of varying amounts. Except in eastern Kansas, there appeared to be better than 9 chances out of 10 for the large volume elevators to make net gains, and better than 8 chances out of 10 for the gains to exceed \$1,000. Whereas the elevators reporting small volume (less than 100,000 bushels) had very little chance to make net gains of \$5,000 or more, those having a grain volume of 200,000 bushels or more had about an even chance of doing so.

TABLE 21.—PERCENTAGE OF THE ANNUAL RECORDS OF KANSAS AND OKLAHOMA COOPERATIVE ELEVATORS REPORTING NET GAINS AS RELATED TO VOLUME OF GRAIN HANDLED, 1931-32 TO 1936-37

Area and volume of grain handled	Number of elevator records studied	Percentage of records reporting—		
		Net gains	Net gains of \$1,000 or more	Net gains of \$5,000 or more
		<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Eastern Kansas:				
Less than 100,000 bushels.....	208	54.8	28.9	2.9
100,000 bushels or more.....	65	73.9	64.7	16.9
200,000 bushels or more.....	11	54.5	45.4	27.3
Northwestern Kansas:				
Less than 100,000 bushels.....	101	55.5	31.7	3.0
100,000 bushels or more.....	78	75.7	61.6	29.5
200,000 bushels or more.....	32	90.6	84.3	50.0
Southwestern Kansas:				
Less than 100,000 bushels.....	116	48.2	25.8	2.6
100,000 bushels or more.....	192	82.3	71.9	34.9
200,000 bushels or more.....	92	92.4	89.1	55.4
Oklahoma:				
Less than 100,000 bushels.....	151	62.3	30.5	3.3
100,000 bushels or more.....	185	83.3	68.7	24.9
200,000 bushels or more.....	68	94.0	82.1	48.5

Source of data: Annual surveys of cooperative elevators made by Farm Credit Administration and State colleges of Kansas and Oklahoma.

One apparent inconsistency in the relation between grain volume and net income is shown in table 21. A smaller percentage of elevator records in eastern Kansas with grain volume of 200,000 bushels or more reported net gains than did those with smaller grain volume. This may be due in part to having elevators of smaller capacity, which required smaller volume for effective operation. Eastern Kansas is an area of smaller farms and more limited production of grain for cash sale than is any of the other three areas. To attract very large volume under such circumstances in many communities may require overbidding the market to draw grain from outside the trade territory ordinarily served by the elevator. From the operating standpoint, any advantage which volume might give in reducing unit costs may be more than offset by the narrow margins on which the grain is bought. The operating loss which may result is borne by the producer-owners of the elevator and may more than offset any advantage gained from lower bushel costs of marketing the grain resulting from the larger volume handled.

TABLE 22.—PERCENTAGE OF THE ANNUAL RECORDS OF KANSAS AND OKLAHOMA COOPERATIVE ELEVATORS REPORTING NET GAINS AS RELATED TO BUSINESS VOLUME (DOLLAR SALES), 1931-32 TO 1936-37

Area and business volume (dollar sales)	Number of elevator records studied	Percentage of records reporting—		
		Net gains	Net gains of \$1,000 or more	Net gains of \$5,000 or more
		Percent	Percent	Percent
Eastern Kansas:				
Less than \$100,000.....	187	49.7	22.5	0
\$100,000 or more.....	62	80.7	66.1	11.3
\$200,000 or more.....	23	86.9	82.6	43.5
Northwestern Kansas:				
Less than \$100,000.....	105	48.6	22.9	1.0
\$100,000 or more.....	46	82.6	65.2	19.6
\$200,000 or more.....	29	93.1	93.1	55.2
Southwestern Kansas:				
Less than \$100,000.....	112	43.8	17.9	.9
\$100,000 or more.....	105	77.1	62.8	17.1
\$200,000 or more.....	78	94.9	92.3	62.8
Oklahoma:				
Less than \$100,000.....	180	61.7	33.3	1.1
\$100,000 or more.....	116	85.3	77.8	18.1
\$200,000 or more.....	49	91.8	85.7	57.1

Source of data: Annual surveys of cooperative elevators made by Farm Credit Administration and State colleges of Kansas and Oklahoma.

Total Business Volume and Net Income

Although grain handling is the main activity of the Kansas and Oklahoma cooperative elevators, nearly all of them also handled side lines which, in many cases, added materially to business volume. In order to show the combined effect of grain and side lines on net incomes, the total sales of the elevators are utilized to indicate business volume. Table 22 shows the relation between size of business volume and net income.

The Kansas associations having dollar sales of less than \$100,000 had a little less than an even chance of showing a net gain in the 6-year period, 1931-32 to 1936-37, and the Oklahoma elevators with small business volume made but little better showing. Except in Oklahoma, the small volume associations had less than one chance in four of making a net gain of as much as \$1,000 and less than one chance in a hundred to show a net gain of \$5,000 or more. Those elevators with dollar sales of \$200,000 or more, had about 9 chances out of 10 to show a net gain and better than an even chance of the net gain being \$5,000 or more, in each of the four areas except eastern Kansas. On the whole there is a more consistent relation between dollar sales and net gains than between grain volume alone and net gains.

Side Lines as an Operating Factor

In view of the concluding statement above, it is evident that income from side lines and services frequently affects the ability of a cooperative elevator to cover operating expenses. In the earlier discussion of yearly operating results (see pp. 24-29 and tables 12, 13, 14, and 15), it was shown that side lines did provide an important source of income in each of the four areas. While there was no material difference in the relative importance of side lines among the four area groups of elevators, there were marked variations in their relative importance among the associations within each area. In order to bring out the effect of these differences on operating results, the elevators of each area were divided into four groups, based upon the size of their grain volume, and the relative importance of side lines.

The elevators in each area were first separated into two groups on the basis of grain volume. Those handling 100,000 bushels of grain or more during a given crop year were classed as large-grain-volume elevators for that year, and those handling less than that volume as small-grain-volume associations. The relative importance of side lines might be measured in several ways. The measure chosen was the extent to which the elevators depended upon the income from side lines to pay operating expenses. This measure is significant from an operating standpoint, since one main objective in adding side lines

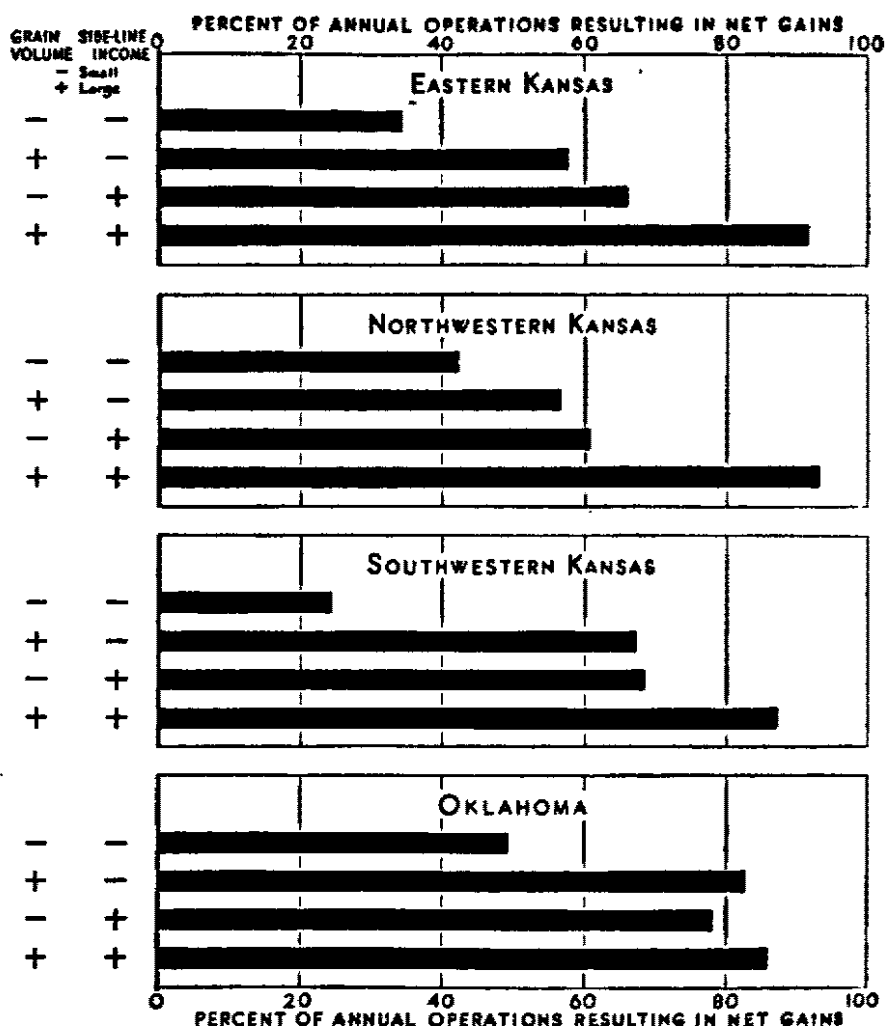


FIGURE 12.—RELATION OF GRAIN VOLUME AND SIDE-LINE INCOME TO THE PERCENTAGE OF ANNUAL OPERATIONS OF KANSAS AND OKLAHOMA CO-OPERATIVE ELEVATORS RESULTING IN NET GAINS, BY AREAS, 1931-32 TO 1935-36.

Large business volume—whether of grain alone, or of grain supplemented by side lines—gave reasonable assurance of satisfactory operating results.

to the grain business was to provide an added source of income to help pay operating expenses, especially during periods of low grain volume. Furthermore, due to wide year-to-year variations in grain volume, total sales or total income of a cooperative elevator in Oklahoma or Kansas is likely to be a more variable item than total expense. Hence, the relation of side-line income to total expense is a better measure of the relative importance of side lines to the business than some of the other measures suggested.

When an elevator's income from side lines was sufficient to cover 40 percent or more of the operating expenses for a given fiscal year, it was placed in the large side-line group for that year. When it amounted to less than 40 percent of such expenses, side-line income was considered small and relatively unimportant in the elevator's operations.

As a result of the method of classification described above, the elevators of each area were divided into four groups, namely: (1) small-grain-volume, small-side-line-income; (2) small-grain-volume, large-side-line-income; (3) large-grain-volume, small-side-line-income; and (4) large-grain-volume, large-side-line-income. The percentages of annual elevator records for the 1931-32 to 1935-36 period falling in each volume group which reported net gains are shown by areas in figure 12.

In each of the four areas, those associations reporting both small grain volume and small side-line income appeared to be distinctly handicapped, with less than an even chance of showing a net gain. When a relatively large side-line income was added to a small grain volume, the chance was greater that income would more than cover operating expenses. Those associations favored by large grain volume had much less need of additional income from side lines than the small-grain-volume elevators. The large-grain-volume group with small side-line income were in about the same operating position as the elevators with small grain volume but large side-line income. The associations fortunate enough to have both large grain volume and large side-line income were, of course, in best position to show net gains.

Figure 12 shows that the same tendencies discussed above prevailed in each of the four areas, although there were some differences in degree. For example, the advantage which elevators with both large grain volume and large side-line income had over the other groups was less in Oklahoma than in the three Kansas areas. The significant conclusion to be drawn from figure 12 is the necessity of large business volume—whether of grain alone, or of grain supplemented by side lines—in order to give reasonable assurance of satisfactory operating results. When or where grain volume is lacking, side lines may become a substitute source of business volume. (See fig. 13.)

Those associations which can expect to handle, on the average, less than 100,000 bushels of grain a year are in greatest need of a substantial side-line business. This holds true in eastern Kansas where cash grain production is limited and hence opportunity for large grain volume is limited. It likewise holds in the two western Kansas areas, where grain yields are quite variable, making for wide variations in

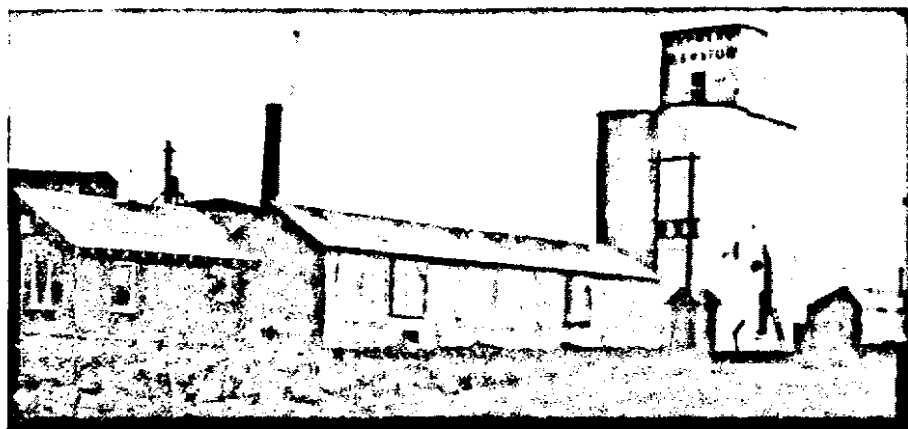


FIGURE 13.—SIDE LINES MAY BE SUBSTITUTE SOURCE OF BUSINESS VOLUME WHERE GRAIN VOLUME IS LACKING.

A Kansas farmers' elevator with facilities indicating considerable emphasis on side-line activities such as feed, seed, coal, etc.

annual grain receipts. In Oklahoma, where grain production is fairly large and yields not highly variable in the sections covered by the 5-year study, the need for the supplemental side-line income was less pronounced. In the northwestern and Panhandle sections of the latter State, not well covered in the study, conditions similar to western Kansas prevail.

Unit Costs of Operation

Net income has been used in the preceding discussion and for the reasons already given (see pp. 29-30) as the indicator of effectiveness in operations of cooperative elevators. Another possible measure of operating efficiency is the unit cost of operation—expense per dollar of sales or per bushel—since the elevators with low unit costs are in a favorable operating position to meet the competition of other marketing agencies. It does not indicate, however, how well grain is being sold or farm supplies purchased—matters of real concern to the producer-members and patrons of the cooperative.

There are several reasons why comparisons based on unit costs of operation may lack significance. For one thing there may be wide variations in the services offered by individual elevators. One may simply engage in receiving, handling, and loading out the grain, whereas another may offer cleaning, conditioning, and storage services which add to the bushel cost of grain moved through the elevator but at the same time add value to the grain. One association may handle grain only while another may handle a large volume of side

lines. In this instance, a comparison based on expense per dollar of sales would have little significance other than to indicate which type of operation required the greater expense per dollar of sales. One association may have a large grinding or trucking business which affects operating expenses, but is not reflected in any great degree in dollar sales, while another does not offer such services. The foregoing illustrations are sufficient to suggest the difficulties in using unit costs of operations as a measure of operating efficiency.

Side Lines and Unit Operating Costs

The information obtained from Kansas and Oklahoma cooperative elevators indicates that the expense per dollar of side-line sales is much greater than the expense per dollar of grain sales. Data were not complete enough to permit an allocation of the part of the total expense chargeable to grain and the part chargeable to side lines for each association. It was possible, however, to group the associations on the basis of the percentage which side-lines sales were of total sales, and then determine the average expense per dollar of sales for each group. This was done for each area and included those elevators for which 1936-37 data were obtained in the general survey of cooperatives made in 1937.

Figure 14 shows a definite tendency for expense per dollar of sales to increase as the proportion of side-line sales to total sales increased. The average expense per dollar of sales for the group of elevators in each area with less than 10 percent of the total sales made up of side lines varied from 2.4 cents in southwestern Kansas to 2.9 cents in Oklahoma. For the associations having 30 percent or more side-line sales in total sales, the average expense per dollar of sales ranged from 5.7 cents in eastern and southwestern Kansas to 10.1 cents in Oklahoma.

Although the same tendency for unit expense to increase as the proportion of side-line sales increased prevailed in each area, yet there was a notable difference between the three Kansas and the Oklahoma areas in one respect. In Oklahoma the average unit expense ran consistently higher for each of the four groups compared with the corresponding groups in the Kansas areas. The data were not complete enough to disclose definitely the reasons for this difference. It was found, however, that Oklahoma associations had more than twice as much income from sources other than grain and side-line trading operations, indicating they were engaged more in such service activities as grinding and storage, which influence expenses but are not reflected in dollar sales.

There was a wide range in unit expense among the elevators in each group, due to such factors as differences in business volume and kind

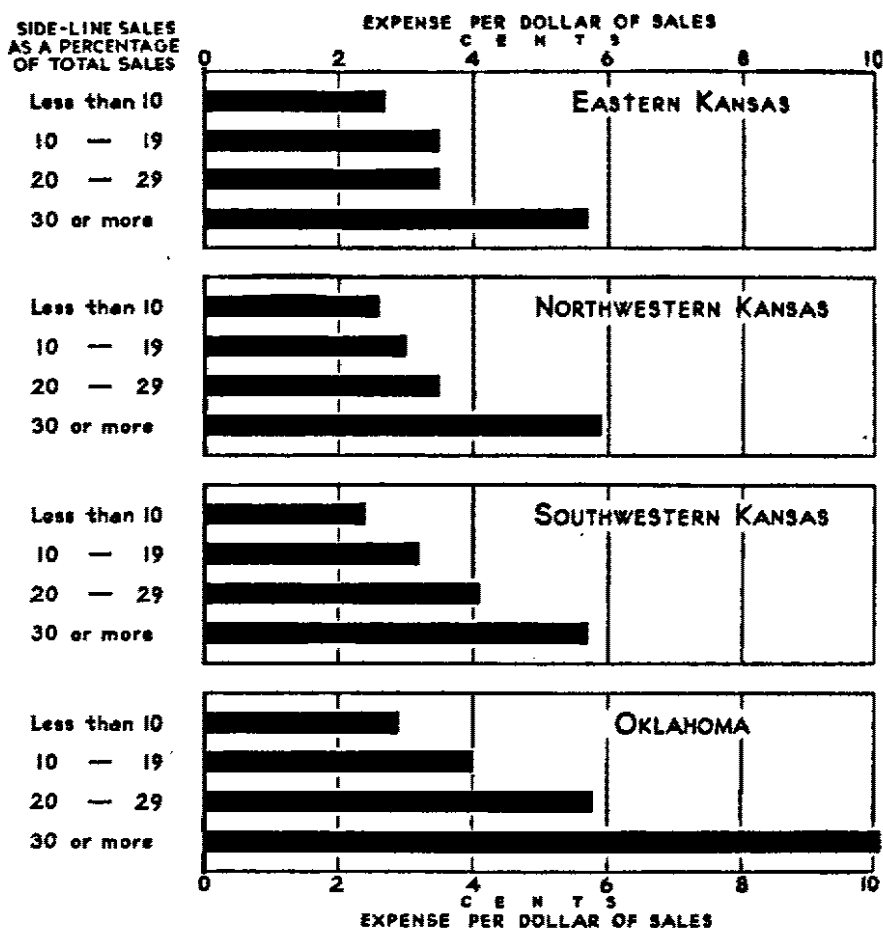


FIGURE 14.—RELATION OF SIDE-LINE SALES AS A PERCENTAGE OF TOTAL SALES TO EXPENSE PER DOLLAR OF SALES OF KANSAS AND OKLAHOMA COOPERATIVE ELEVATORS, BY AREAS, 1936-37.

Expense per dollar of sales definitely tended to increase as the proportion of side-line sales to total sales increased.

of side lines handled as well as variations in efficiency of operation. Even so, there is sufficient evidence to indicate that the expense for handling each dollar of side lines is significantly greater than for each dollar of grain. Hence there is definite need to realize a wider gross margin on side lines than on grain if each is to bear its fair share of expense.

Business Volume and Expense Per Dollar of Sales

The statement has been made that the direct correlation between business volume and net income was due in the main to the effect of business volume on unit costs of operation. Table 23 offers some

TABLE 23.—AVERAGE EXPENSE PER DOLLAR OF SALES OF KANSAS AND OKLAHOMA COOPERATIVE ELEVATORS AS RELATED TO BUSINESS VOLUME (DOLLAR SALES), 1936-37

Area and business volume (dollar sales)	Number of associations in group	Average expense per dollar of sales	Side-line sales as a percentage of total sales
Eastern Kansas:		<i>Cents</i>	<i>Percent</i>
Less than \$50,000.....	15	6.1	26.0
\$50,000 to \$99,000.....	29	5.1	28.9
\$100,000 to \$149,000.....	20	4.7	33.0
\$150,000 to \$199,000.....	13	3.6	28.8
\$200,000 to \$249,000.....	8	4.5	31.7
\$250,000 or more.....	6	3.3	40.1
Northwestern Kansas:			
Less than \$50,000.....	7	7.6	33.0
\$50,000 to \$99,000.....	13	5.8	26.8
\$100,000 to \$149,000.....	10	4.9	19.8
\$150,000 to \$199,000.....	5	2.8	20.7
\$200,000 to \$249,000.....	4	4.5	31.5
\$250,000 or more.....	6	3.1	21.4
Southwestern Kansas:			
Less than \$50,000.....	4	8.2	42.5
\$50,000 to \$99,000.....	19	5.0	21.3
\$100,000 to \$149,000.....	13	4.6	22.2
\$150,000 to \$199,000.....	11	3.7	14.6
\$200,000 to \$249,000.....	11	3.3	15.5
\$250,000 or more.....	20	3.8	26.0
Oklahoma:			
Less than \$50,000.....	16	7.2	15.5
\$50,000 to \$99,000.....	16	6.4	18.9
\$100,000 to \$149,000.....	17	4.6	18.5
\$150,000 to \$199,000.....	11	5.7	17.4
\$200,000 to \$249,000.....	3	4.6	23.1
\$250,000 or more.....	12	3.4	13.1

Source of data: The elevator records reporting 1936-37 operations obtained in the 1937 survey of cooperative associations made by Farm Credit Administration.

proof of the significance of that statement. The associations in each of the four areas for which 1936-37 data were available were divided into six groups on the basis of business volume as indicated by dollar sales. The elevators with sales of less than \$50,000 had an average expense per dollar of sales varying from 8.2 cents in southwestern Kansas to 6.1 cents in eastern Kansas. As business volume increased the average expense per dollar of sales tended downward.

When sales exceeded \$150,000 there was a less definite and regular tendency for the unit expense to show further decrease. In order to determine whether this irregularity in the downward trend in unit costs

as dollar sales increased was due to variations in side-line volume, the percentage of side-line sales to total sales was determined for each volume group. The wide difference between the average expense per dollar of sales of the southwestern Kansas elevators with total sales of less than \$50,000 and those with sales of \$50,000 to \$99,000 is probably due in part to the side-line factor. The average unit cost of the southwestern Kansas associations having sales of \$250,000 or more was higher than those in the two next smaller volume groups, due partly to a higher proportion of side-line sales. On the other hand, Oklahoma elevators with sales of \$150,000 to \$199,000 had a higher average expense per dollar of sales than either the next smaller or larger volume groups despite a lower proportion of side-line sales. Any influence which business volume may have had on this group was apparently more than offset by the effect of other factors which influence unit costs.

Grain Volume and Expense Per Dollar of Sales

As already indicated no attempt was made to allocate the expense of Kansas and Oklahoma cooperative elevators between grain and side lines. Hence, it was not possible to determine the expense per bushel of handling grain through the elevators. In order to determine how grain volume is related to the unit cost, those elevators were selected which had side-line sales amounting to less than 10 percent of total sales. In such elevators side lines were unimportant as an influence on expense per dollar of sales. Figure 15 presents the relation between the grain volume of these elevators and the expense per dollar of sales.

An increase in grain volume above 50,000 bushels first brought a sharp decrease in expense per dollar of sales. When the volume exceeded 100,000 bushels the tendency for unit cost to decrease further was not so pronounced or so regular, although the trend was in that direction. Figure 15 offers definite evidence of the advantage from the unit cost standpoint which is held by the elevator handling 100,000 bushels or more of grain in Kansas and Oklahoma.

Some associations so located that large grain volume is not possible have been able to adjust themselves to existing conditions and keep bushel costs down to a point where they can meet competition locally and from nearby stations. By keeping the elevator open only during the heavy grain-moving season, by securing a manager on a part-time basis, or in other ways, they hold operating expense at a low figure. But the kind of service they can offer may be handicapped. In other cases where the trend of grain production has been downward and low volume conditions prevail, the only alternative may be to use the elevator plant and forego any hope of realizing more than

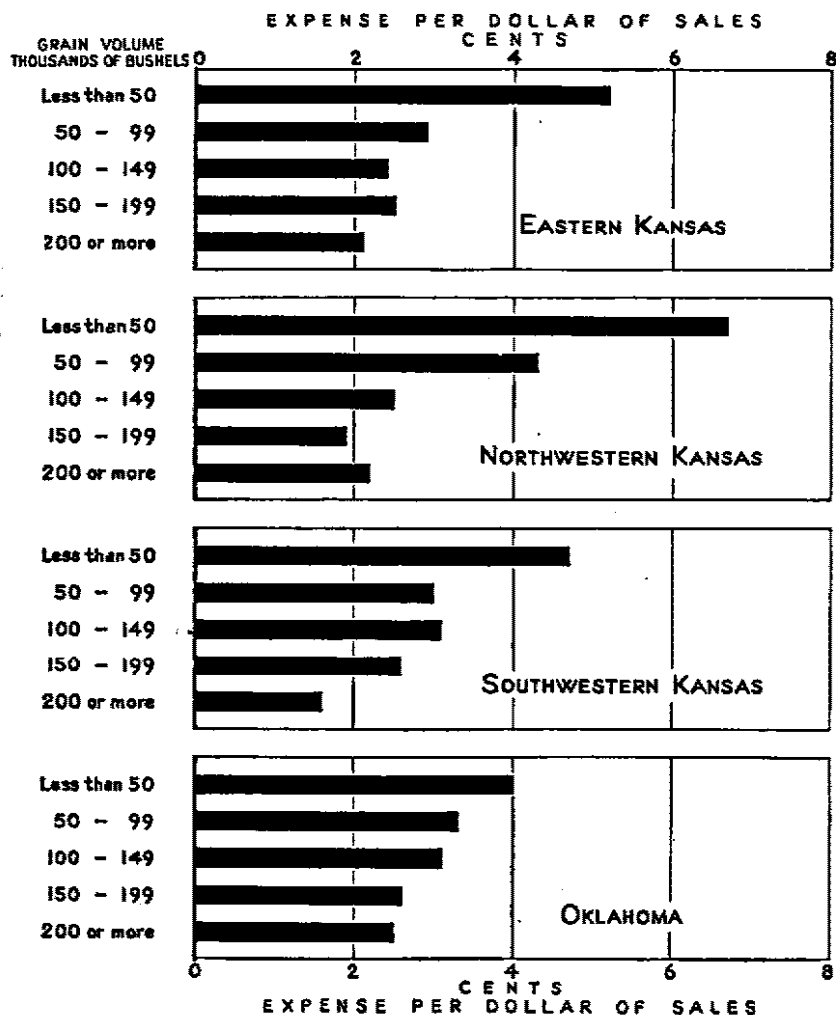


FIGURE 15.—RELATION OF GRAIN VOLUME TO EXPENSE PER DOLLAR OF SALES OF KANSAS AND OKLAHOMA COOPERATIVE ELEVATORS,¹ BY AREAS, 1936-37.

Elevators handling 100,000 bushels or more of grain had a real advantage in unit costs over those handling a smaller grain volume

the actual cash costs of operating it. In other words, the conditions do not warrant replacing the elevator when it is worn out, so it has no value other than that to be obtained from using it as long as it will last.

¹ Includes only elevators having side-line sales less than 10 percent of total sales.

Grain Volume and Unit Costs of Individual Elevators

Will the unit costs of an individual elevator vary with changes in grain volume from year to year in the same way that unit costs vary among the volume groups during a given year as shown in figure 15? To test this theory the data on grain volume and unit costs for five southwestern Kansas elevators, all located in the same county, were assembled for the 5 years, 1931-32 to 1935-36. Grain volume and not dollar sales was used in determining unit costs because of the material changes in grain price levels within the 5-year period. Furthermore, side-line business of these five associations was small and hence had little influence on their operating expenses. The very limited income realized from side lines was deducted from expense and the remaining expense charged to grain.

Figure 16 shows how expense per bushel varied from year to year for each of these five associations as yearly grain volume changed. The same tendency for unit expense to decrease as grain volume increased, shown in figure 15, is also in evidence in figure 16. There was little change in expense per bushel after a volume of 150,000 bushels was reached, but sharp increases in unit costs occurred as grain volume decreased below 150,000 bushels. This shows the advantage of the large-volume elevator over the small-volume elevator, not only in any given year but over a period of years.

An association with a volume of 250,000 or 300,000 bushels on the average runs little risk of volume very often falling much below 150,000 bushels, and hence it can always keep its expense per bushel at a reasonable figure. A 100,000-bushel association, on the other hand, is likely to run into years when grain volume will be very small and unit costs consequently high. In such years, it is either forced by competition to operate at a loss or must take wider margins on grain in order to cover the higher unit costs.

It is to the advantage of the grain producer to have his grain marketed at the lowest possible cost per bushel consistent with good service. As a member-patron of a cooperative handling a large volume, he has much greater assurance of his grain being marketed at low cost year after year than he would as a member of an elevator handling 100,000 bushels or less of grain on the average.

Efficiency in Utilizing Labor

The largest item of expense of a cooperative elevator is the amount paid in salaries and wages. This being so, it is highly important that the time of employees be fully utilized. A rough measure of how well their time is being used is given by determining how much business volume is handled for each dollar paid in salaries and wages. There is a very wide spread among elevators in this regard. In eastern

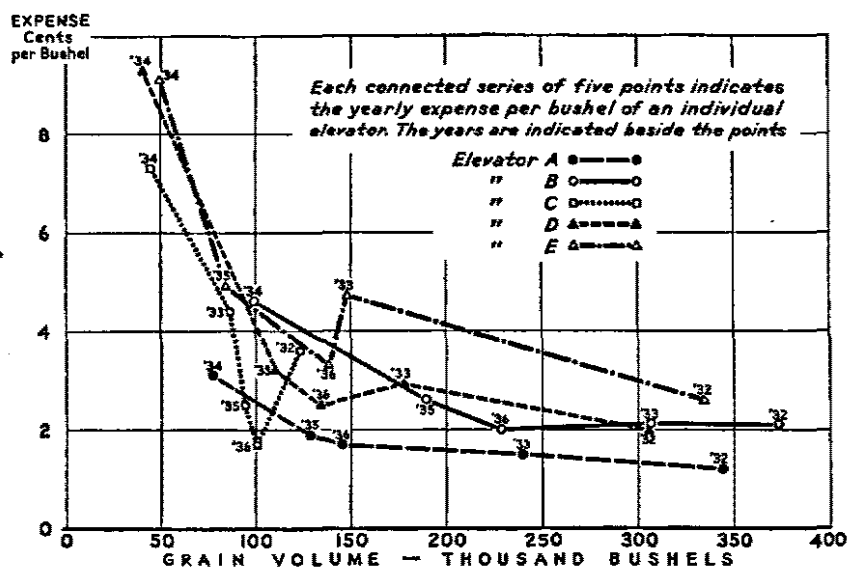


FIGURE 16.—RELATION OF GRAIN VOLUME TO EXPENSE PER BUSHEL OF GRAIN HANDLED BY FIVE KANSAS COOPERATIVE ELEVATORS, 1931-32 TO 1935-36. "

As the grain volume of individual associations increases or decreases, the expense per bushel varies inversely.

Kansas, for example, the "low" elevator had only \$19.34 of sales for each dollar paid in salaries and wages as against \$101.86 for the "high" association.

The wide difference between elevators, as indicated, is not due entirely to differences in their efficiency in utilizing the employees' time, but the latter is no doubt an important factor. It ordinarily requires more labor as well as other expense to handle a dollar of sideline sales than a dollar of grain sales, as data already cited have indicated. The elevator which engages in such service activities as feed grinding or trucking adds to its expenses by such activities without their being reflected in business volume as indicated by dollar sales. It is well to keep in mind these shortcomings of sales per dollar paid in salaries and wages as a measure of efficiency in utilizing labor.

Figure 17 shows the associations which were studied in the four areas of Kansas and Oklahoma in 1935-36, divided into five groups on the basis of sales per dollar paid in salaries and wages.

The average expense per dollar of sales was determined for each group in each area. As sales per dollar of salaries and wages increased there was a distinct tendency for expense per dollar of sales to decrease. Material decreases in unit expense until sales amounted to \$40 to \$60 for each dollar paid in salaries and wages are to be noted in figure 17. Cooperative elevators which have business volume amount-

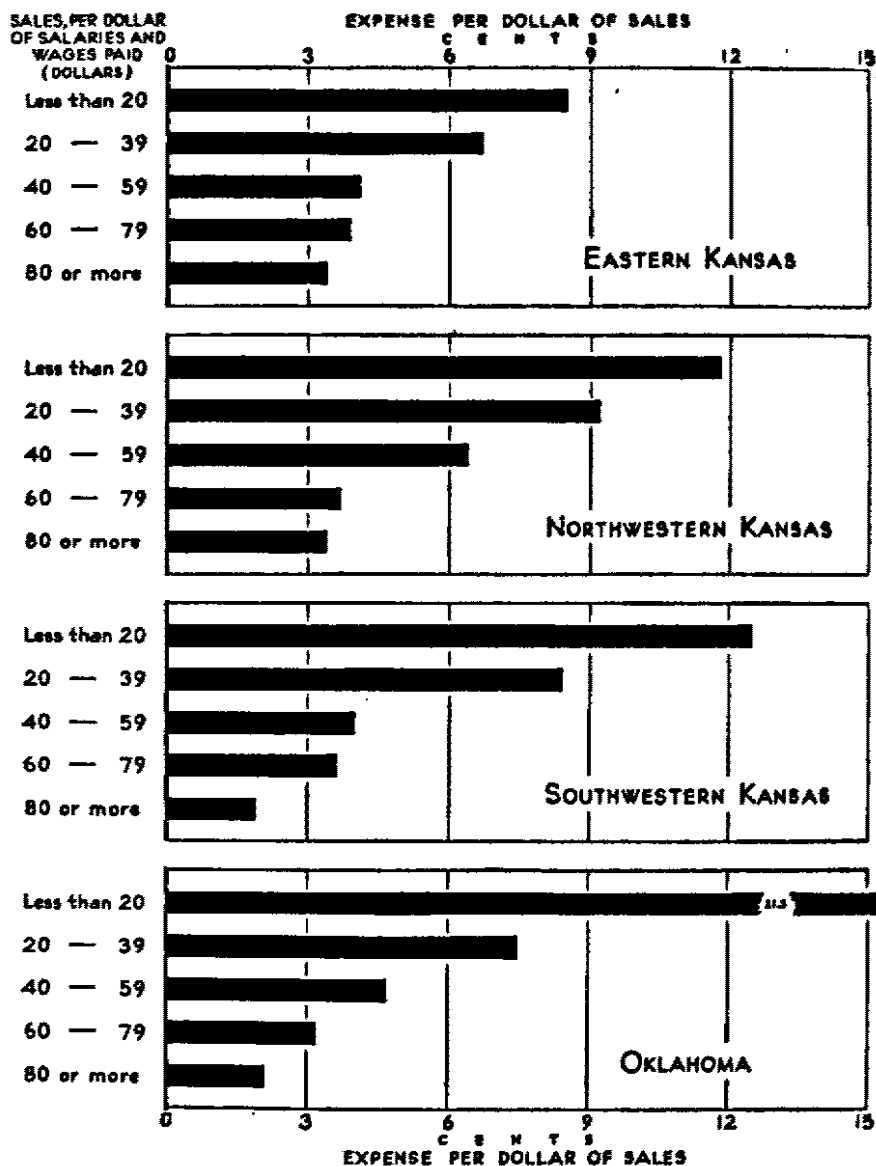


FIGURE 17.—RELATION OF SALES PER DOLLAR PAID EMPLOYEES IN SALARIES AND WAGES TO EXPENSE PER DOLLAR OF SALES OF KANSAS AND OKLAHOMA COOPERATIVE ELEVATORS, BY AREAS, 1935-36.

There was a distinct tendency for expense per dollar of sales to decrease as sales per dollar paid in salaries and wages increased. The latter indicates how effectively the time of employees is utilized.

ing to \$50 or more for each dollar paid in salaries and wages are usually in position to hold unit costs down to a point where they can meet competition and safeguard the capital structure. The associations with business volume below that figure need to scrutinize operations to determine if the outlay for labor is bringing sufficient return. This

return may be in the form of income from such sources as feed grinding or commissions not reflected in sales, or from particular types of side lines (petroleum products for example) on which the handling margins are relatively large.

Utilizing the Elevator Facilities

The operating costs of a cooperative elevator are influenced by the extent to which its facilities are being utilized. Among the items of expense in operating the business are depreciation, repairs, taxes, and

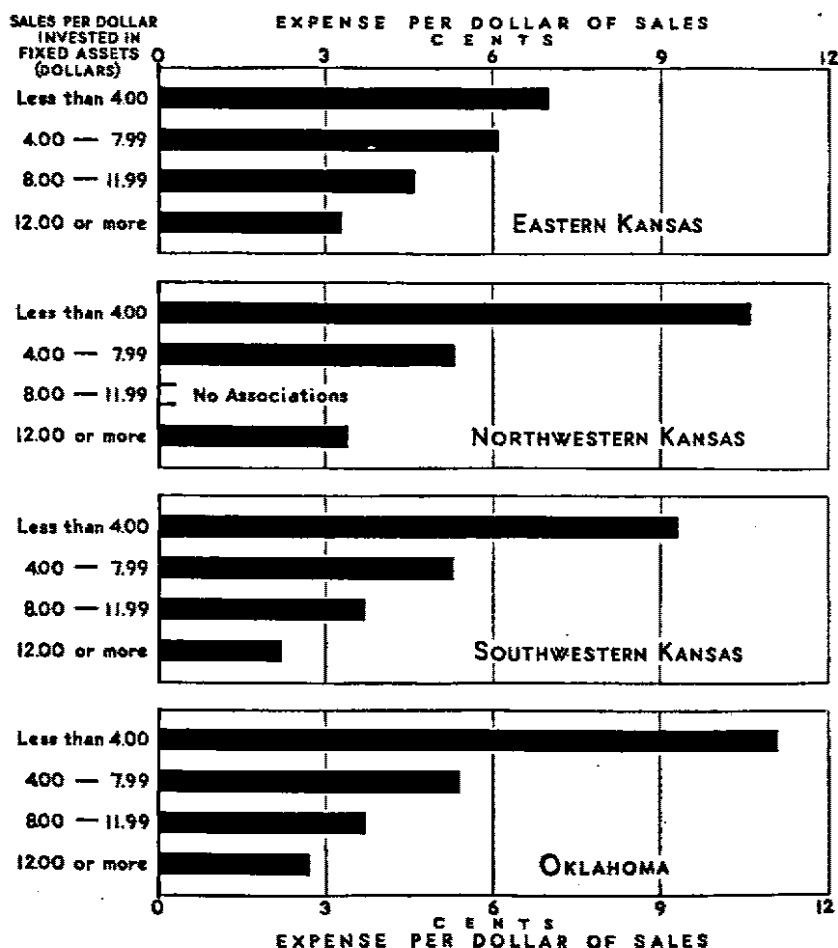


FIGURE 18.—RELATION OF SALES PER DOLLAR INVESTED IN FIXED ASSETS TO EXPENSE PER DOLLAR OF SALES OF KANSAS AND OKLAHOMA CO-OPERATIVE ELEVATORS, BY AREAS, 1935-36.

Expense per dollar of sales definitely tended to decrease as sales per dollar invested in fixed assets increased. The latter gives a measure of how well the elevator plant and equipment are utilized.

insurance on the buildings and equipment—the fixed investment. These expense items are largely of such a nature that they keep accumulating from day to day through the year regardless of whether a bushel of grain is handled or a dollar of side-line sales made. The elevator plant has value only to the extent it is utilized. If the costs just enumerated are distributed over a large business volume, the unit cost is low; if a small volume is handled, the cost for each dollar of business done is large.

The original investment in plant and equipment gives some idea of its physical capacity for handling grain and side lines. By relating sales to the undepreciated value of the fixed assets, a rough measure is provided of the extent to which the plant and equipment are being utilized. The undepreciated rather than the depreciated value of the fixed assets is used in this connection because the former is a somewhat better indicator of the working capacity of the physical plant. As in the case of labor utilization, expense per dollar of sales may be used to indicate how well operations were being conducted from a cost standpoint.

The relation between sales per dollar invested in fixed assets and expense per dollar of sales is shown in figure 18. The elevators of each area studied in 1935-36 were divided into four groups on the basis of sales per dollar invested in fixed assets and the average expense per dollar of sales was determined for each group. Those elevators with sales of \$8 or more for each dollar invested in fixed assets had a distinct advantage from a cost standpoint over those with smaller sales, since they were in position to meet competition and to handle their patrons' grain and supplies on narrow margins. The managements of associations with sales of less than \$8 for each dollar invested in fixed assets (on the basis of price levels in 1935-36) need to examine their operations rather critically. Is the low business volume relative to plant capacity due to crop conditions entirely or can something be done to increase volume through membership work or addition of other lines of business? Are other sources, such as feed grinding or grain storage, contributing to income but not reflected in dollar sales? These and other questions will need consideration if sales per dollar of fixed assets are low and the physical facilities apparently are not being fully utilized.

Trend of Wheat Prices as a Factor Affecting Grain Margins

The objective of Kansas and Oklahoma grain farmers in organizing their cooperative elevators was primarily to provide themselves with local marketing agencies which would assure economical handling of

their grain and as high a price for it as was warranted by market conditions. It was not their intention that their associations would attempt to make speculative gains. To avoid price risks as much as possible it is essential that grain be sold as quickly as possible after purchase from patrons. There are practical considerations which make absolute observance of this rule impossible but which do not make it entirely unworkable.

Some cooperative elevator managers feel obligated to attempt to make speculative gains in order to "make a showing." By so doing they are endangering not only their own future as managers but also the future of their associations. No attempt will be made here to

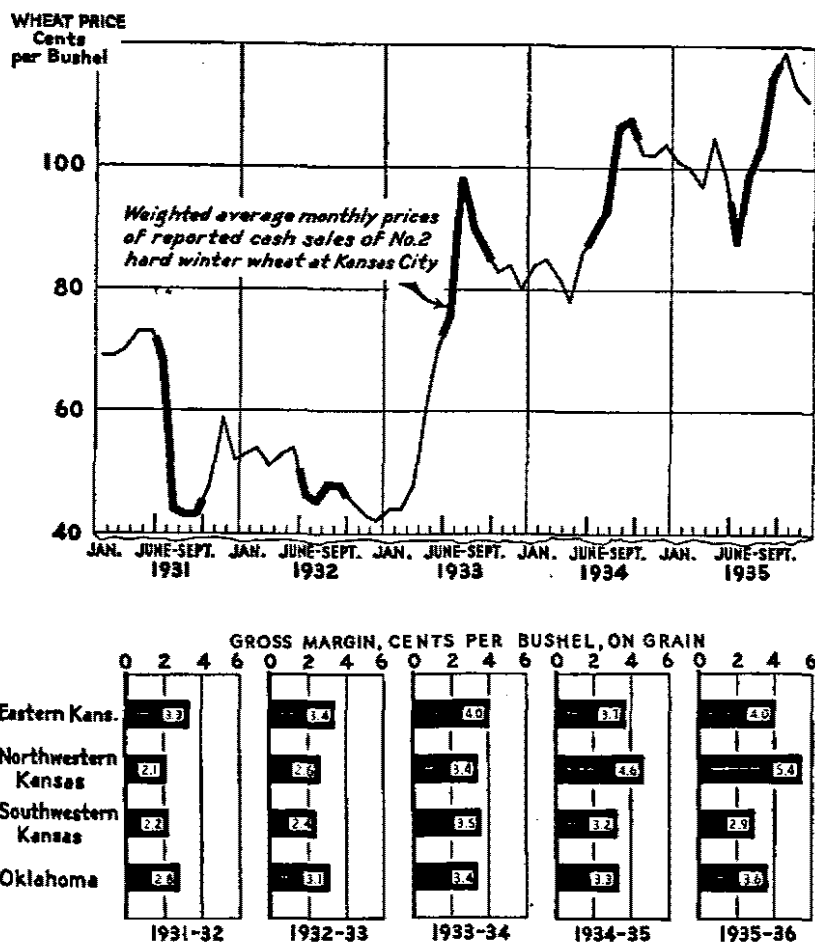


FIGURE 19.—RELATION OF THE JUNE-SEPTEMBER TREND OF WHEAT PRICES TO THE GROSS MARGINS PER BUSHEL OF GRAIN OBTAINED BY KANSAS AND OKLAHOMA COOPERATIVE ELEVATORS, BY AREAS, 1931-32 TO 1935-36.

The realized margins on grain tended to be smaller in years when the trend of wheat prices during the months of heavy movement was downward.

discuss fully the means of avoiding speculative practices in grain handling. Elevator managers should make every possible effort to minimize price risks and should fully recognize their dangers.

Cooperative elevators obtain the income to cover expenses of operation by attempting to buy grain at a fairly definite margin per bushel under the price which they expect to realize for it. If the grain is sold immediately they assure themselves of that margin. If not, they take chances on the price declining in the interval before sale. A rather common practice among Kansas and Oklahoma cooperatives is to sell a large part of their grain by consignment to a terminal market. Unless such consigned grain is hedged by sale of a future, the elevator carries the risk of price change during the period required for movement to the terminal market. The trend of the grain market, whether up or down, may therefore affect the margin realized on the grain.

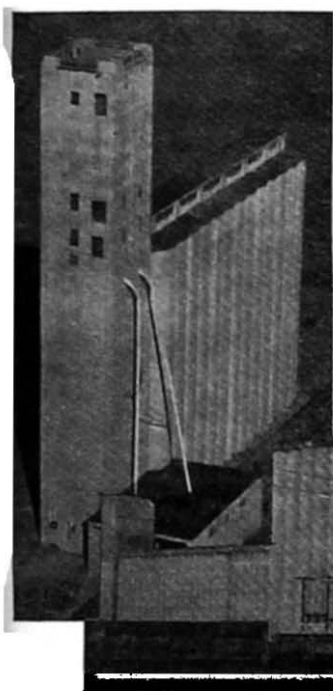
Figure 19 shows the trend of wheat prices during the 5 years, 1931 to 1935. At the base of the figure are given the average gross margins per bushel of grain realized by the Kansas and Oklahoma cooperative elevators providing information on their operations for those 5 years. Since wheat made up the bulk of grain handled by these elevators, the grain margin indicated is mainly a result of wheat-marketing operations. The period of heaviest grain movement, June to September, is also designated in figure 19.

In the first 2 of the 5 years, 1931 to 1935, the trend of wheat prices was downward during the heavy crop movement. In the last 3 the price trend was rather definitely upward. The realized grain margins during the 2 years of declining prices were smaller in each of the four areas than were the margins in the 3 years when prices were moving upward. The margins per bushel varied the least from year to year for the eastern Kansas and Oklahoma elevators and the most for the northwestern Kansas group. It is apparent, under the conditions which prevail in Oklahoma and Kansas, that gross margins on grain and consequently net operating results are influenced by the trend of wheat prices during the crop year.

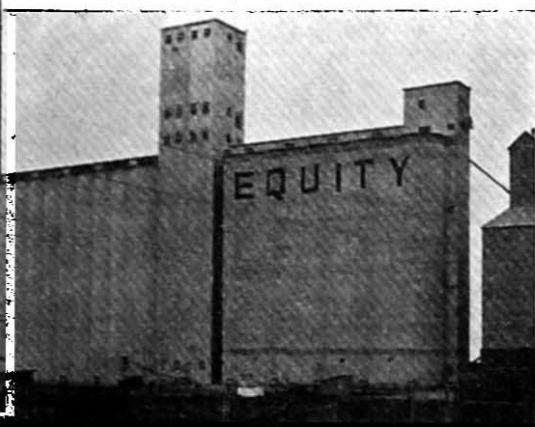
Cooperative Terminal Grain Marketing Agencies

In the general survey of cooperatives made in 1937, information was secured on the amount of grain marketed by the local cooperative elevators through regional or terminal cooperative associations. Oklahoma associations disposed of the largest proportion of their grain through cooperative agencies. They reported that 70 percent of their grain was sold through such agencies as against 39 percent in

FIGURE 20.—TERMINAL ELEVATORS.



Left: A bird's-eye view of the terminal elevator of the Farmers' Cooperative Commission Co., Hutchinson, Kans., which serves the local cooperative elevators of southwestern Kansas. Below: The Enid terminal elevator of the Union Equity Cooperative Exchange, which renders storage and terminal marketing services to Oklahoma and Texas local cooperative elevators.



both eastern and northwestern Kansas and 53 percent in southwestern Kansas. (See fig. 20.)

During the 4 years, 1933-34 to 1936-37, the Oklahoma elevators included in this study reported regarding their sales through cooperative sales agencies. In 1933-34, they reported 73 percent of their shipments going to cooperative agencies; in 1934-35, 72 percent; in 1935-36, 67 percent; and in 1936-37, as indicated above, 70 percent. It appears, therefore, that Oklahoma cooperative elevators have been quite consistent through the years in giving loyal support to their own regional marketing agencies.

This study of the operations of Kansas and Oklahoma cooperative elevators during the 6-year period, 1931-32 to 1936-37, shows them to be, with a few exceptions, in good financial condition despite the difficulties they have encountered because of depression and drought. Many weak associations have been eliminated by the adverse conditions. Weak points in almost every association have been brought to the surface in the period of stress. Correction of these weak points has been and will continue to be an important job. In order to justify their continued existence, these elevators must seek means of making further improvements in operating efficiency. It is their responsibility to sell the farmers' grain at least as effectively and

CHECKED
2563-64

FARM CREDIT ADMINISTRATION

economically as other marketing agencies. The test of management comes in the efforts made to meet these operating problems promptly and effectively.

Operating results of the elevators were influenced largely by business volume, which varied widely among associations, in part because of differences in crop conditions and trade territories, and in part because of factors largely within the control of management. Soundness of the financial structure, efforts made to control credit extension, size and loyalty of the membership—these and other management problems were found to have their influence on operating costs and net income. This study has served to indicate the significance of some of these factors. The management of a cooperative elevator, aware of their significance, is in a better position to take steps which will result in improvements in operation.

Other Publications Available

In addition to this bulletin, the following publications on farmers' cooperative organizations are published by the Farm Credit Administration:

Cooperative Purchasing of Farm Supplies

Bulletin No. 1, *Joseph G. Knapp and John H. Lister*

Accounting Principles for Cooperative Cotton Gin Associations

Bulletin No. 2, *Otis T. Weaver*

Cooperative Marketing of Agricultural Products

Bulletin No. 3, *Ward W. Felrow*

Cooperation in Agriculture, a Selected and Annotated Bibliography, Bulletin No. 4, *Chastina Gardner*

Organization and Operation of the Illinois Livestock Marketing Association, Bulletin No. 5, *H. H. Hulbert*

Statistics of Farmers' Cooperative Business Organizations, 1920-1935, Bulletin No. 6, *R. H. Elsworth*

Cooperative Marketing of Range Livestock

Bulletin No. 7, *L. B. Mann*

*** Mutual Irrigation Companies in California and Utah**

Bulletin No. 8, *Wells A. Hutchins*, Superintendent of Documents, Washington, D. C., 25 cents

Membership Relations of Cooperative Associations

Bulletin No. 9, *J. W. Jones*

*** Marketing Policies of the California Walnut Growers Association**

Bulletin No. 10, *Harry C. Hensley and Neil H. Borden*, Superintendent of Documents, Washington, D. C., 20 cents

Organization and Operating Problems of Nebraska Cooperative Creameries, Bulletin No. 11, *T. G. Stitts and Gordon C. Laughlin*

Analysis of the Business Operations of Cooperative Cotton Gins in Oklahoma, 1933-34, Bulletin No. 12, *Otis T. Weaver and Omer W. Herrmann*

Transportation of Milk in the Philadelphia Milkshed

Bulletin No. 13, *John J. Scanlan*

Cooperative Organization of Iowa Farmers' Creameries

Bulletin No. 14, *Frank Robotka and Gordon C. Laughlin*

Contract Feeding and Pasturing of Lambs and Cattle

Bulletin No. 15, *C. G. Randell*

Milk Cooperatives in Four Ohio Markets

Bulletin No. 16, *William C. Welden and T. G. Stitts*

Commercial Trucking of Fruits and Vegetables in Nine Atlantic Coast States, Bulletin No. 17, *Nephtune Fogelberg and H. W. Mumford, Jr.*

Use of Motortrucks in Marketing Fruits and Vegetables

Bulletin No. 18, *Marius P. Rasmussen*

Business Analysis of the Utah Poultry Producers' Cooperative Association, Bulletin No. 19, *John J. Scanlan*

*For sale only

(Continued on page 4 of cover)