

Accounts Receivable Credit



in
Minnesota Farm Supply Cooperatives

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ACCOUNTS RECEIVABLE CREDIT

In Minnesota Farm Supply Cooperatives

Arvid C. Knudtson and E. Fred Koller¹

THE RECENT rapid increase in use of accounts receivable credit is causing a serious problem for Minnesota farm supply cooperatives. Cooperative leaders are concerned with this trend as past experience shows that slow collections, heavy credit losses, and financial difficulties may easily result.

It was the purpose of this study to review recent account receivable credit trends and to study the relationships of credit to other financial and operating aspects of local Minnesota farm supply associations.

Another objective of the study was to analyze the nature and effectiveness of various credit policies used by these associations in the extension and collection of patron credit. This analysis of credit trends and policies is designed to present information that will be useful to management in coping with credit problems.

The study was confined to accounts receivable credit or charge accounts which are claims not evidenced by formal written promises to pay. It did not include an analysis of the written credit instruments used in some cases such as notes receivable, installment loans, or contracts receivable.

Three groups of local Minnesota farmer cooperatives which handle farm supplies were included in this study: (1) grain associations with supply de-

partments, (2) oil, and (3) general production supply associations. These organizations handled a wide range of farm supplies including petroleum products, automotive supplies, feed, seed, fertilizer, machinery, hardware, and steel products.² General merchandise cooperatives which handle groceries, dry goods, and related lines were not included in this study.

For the purpose of the study a representative sample of 87 associations was selected from the three foregoing groups. All of the farm supply cooperatives in the state were classified by sales volume and type-of-farming area. The 87 associations were selected randomly from these classes. The sample was distributed throughout the state as shown in figure 1.

The 87 cooperatives had a wide range of annual sales (table 1). Total sales in the grain associations included not only their farm supply sales but also all the grain marketed for patrons. In consequence more of these associations fell into the larger volume groups than is

¹The authors acknowledge with appreciation the excellent cooperation of the managers of cooperatives and credit bureaus who supplied the basic data used in this study. Credit is due Dr. Rex W. Cox and Dr. O. B. Jesness of the Department of Agricultural Economics, University of Minnesota, for many helpful suggestions. The assistance of Raymond L. Anderson, formerly with the Department of Agricultural Economics, who assisted in various phases of the work is gratefully acknowledged.

²For a more detailed description of these associations, see:

E. Fred Koller, T. W. Manning, and O. B. Jesness, *Statistics of Farmers Cooperatives in Minnesota 1950*, Minn. Agr. Expt. Sta. Bul. 412, 1952.

T. W. Manning and E. Fred Koller, *Minnesota Farm Supply Associations*, Minn. Agr. Expt. Sta. Bul. 421, 1953.

Table 1. Distribution of the 87 Minnesota Farm Supply Associations in the Sample According to Sales Volume by Commodity Type, 1953

| Sales volume | Grain | Oil | General supply | All types |
|----------------------|------------------------|-----|----------------|-----------|
| thousands of dollars | number of associations | | | |
| Less than 200 | 2 | 13 | 4 | 19 |
| 200-399 | 11 | 12 | 3 | 26 |
| 400-599 | 12 | 3 | 1 | 16 |
| 600-799 | 7 | 2 | ..... | 9 |
| 800-999 | 3 | 1 | 1 | 5 |
| 1,000 and more | 11 | 1 | ..... | 12 |
| Total | 46 | 32 | 9 | 87 |

true of the oil and general supply associations.

The data were obtained by visiting these cooperatives. Materials were obtained from credit files, audit reports, other accounting records, and from interviews with managers and other employees. For the purposes of comparison, data were obtained for the fiscal year 1952-53 and for three preceding fiscal years. In the remainder of this report all fiscal years will be designated by the last year of the fiscal year.

Size of Business Operations

THE 87 MINNESOTA farm supply associations included in the study handled \$45,166,458 worth of business for their patrons in 1953. Of this business \$23,879,856 represented farm production supplies sold to patrons. The balance of \$21,286,602 was the volume of grain marketed for patrons by both grain and general supply associations.

These 87 cooperatives were doing 8 per cent more business in 1953 than in 1950 (table 2). The increased dollar volume is a result of both higher prices and increased physical volume. Over the four-year period the sales volume in the oil associations increased 9 per cent while the volume of grain associations rose 7 per cent. These grain associations had farm supply or side line sales that averaged 37.5 per cent of their total sales volume in 1953. The

nine supply associations increased sales volume 31 per cent from 1950 to 1953.

LARGE VOLUME OF CREDIT SALES

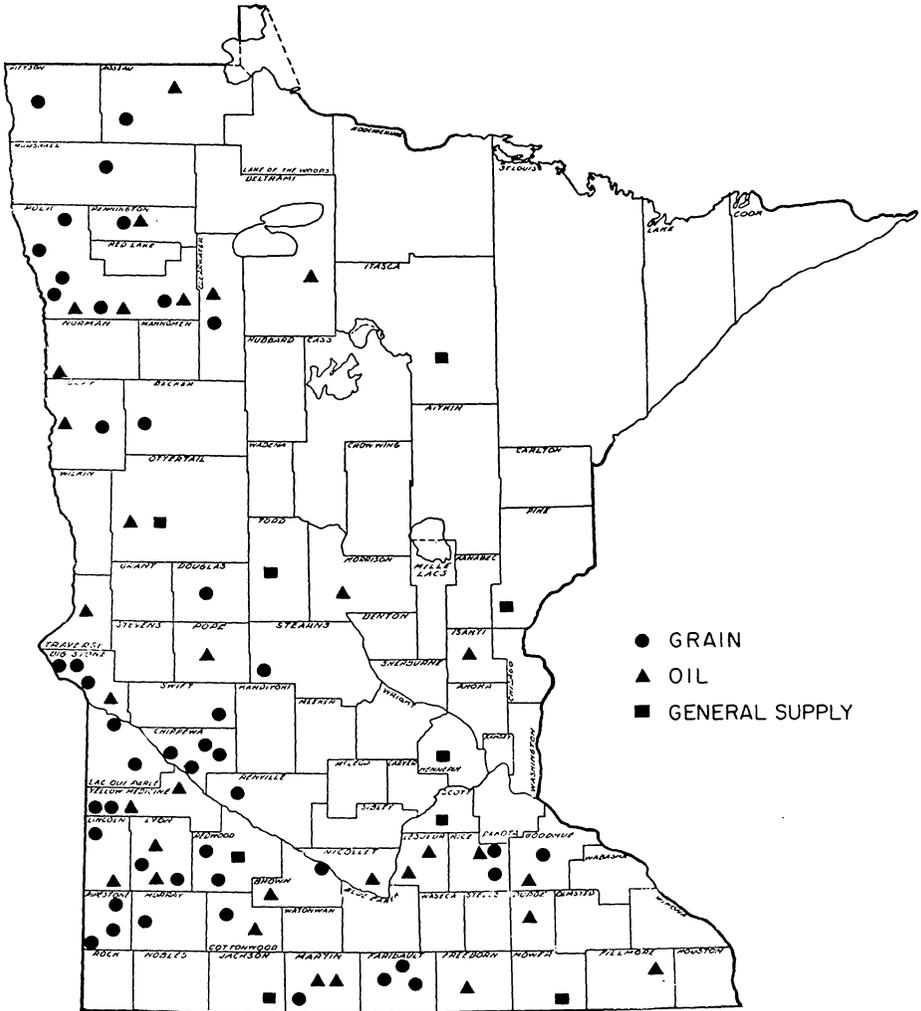
Fifty per cent of the farm supply sales of these associations was made on credit in 1953. The oil associations made an average of 58.5 per cent of their sales on credit (table 3). This compares with credit sales of 54.5 per cent found in a study of 85 Minnesota oil cooperatives in 1940.³

For purposes of the analysis in the remainder of this report, only farm supply sales were used. Sales of grain

³E. Fred Koller. "Credit practices and credit costs of cooperative oil associations," *Farm Business Notes*, 224:1. August 1941. (Out of print.)

Table 2. Average Sales Volume per Association According to Type in 87 Associations, 1950-1953

| Associations | | | | | |
|----------------------|--------|-----------|-----------|-----------|-----------|
| Type | Number | 1950 | 1951 | 1952 | 1953 |
| Grain | 46 | \$667,394 | \$699,875 | \$723,597 | \$710,650 |
| Oil | 32 | 282,318 | 286,581 | 303,755 | 307,307 |
| General supply | 9 | 224,728 | 270,840 | 260,495 | 293,637 |
| All types | 87 | \$479,964 | \$503,476 | \$521,265 | \$519,155 |



- GRAIN
- ▲ OIL
- GENERAL SUPPLY

Fig. 1. Location of 87 Minnesota farm supply associations included in the study.

through terminal markets, to truckers, and to other nonfarm buyers were eliminated from total sales in arriving at total farm supply sales.

The information needed to determine the importance of credit sales relative to total supply sales was available in only the oil associations for the four years. Credit sales represented 6 per

Table 3. Percentage Credit Sales Are of the Total Supply Sales in 87 Associations, 1953

| Type of association | Per cent |
|----------------------|----------|
| Grain | 40.1 |
| Oil | 58.5 |
| General supply | 65.9 |
| All types | 50.3 |

Table 4. Average Percentage of Total Sales Made on Credit in 32 Oil Associations, 1950-1953

| Year | Percentage credit sales were of total sales |
|------------|---|
| 1950 | 52.8 |
| 1951 | 55.8 |
| 1952 | 57.0 |
| 1953 | 58.5 |

cent more of total sales in these associations in 1953 than in 1950 (table 4).

Table 5 indicates that the number of oil associations making 60 per cent or more of their sales on credit increased markedly over the period covered in the study. There were 21 associations making 60 per cent or more of their sales on credit in 1953 as compared with 14 associations in 1950.

The average volume of credit sales over the four-year period is shown in table 6. The average amount sold on credit increased 32, 21, and 49 per cent in the grain, oil, and general supply associations, respectively, from 1950 through 1953. At the same time total sales had increased an average of only 8 per cent for all types of associations.

For the purpose of a graphic comparison of sales, credit sales, and accounts receivable, 1950 was taken as the base year and given an index value of 100. On this basis it is seen that credit sales rose steadily in all three groups of cooperatives (figure 2). In the grain and oil associations accounts receivable rose at a more rapid rate than did sales or credit sales.

Table 5. Distribution of 32 Oil Associations According to the Percentage Credit Sales Are of Total Sales, 1950-1953

| Percentage credit sales are of total sales | 1950 1951 1952 1953 | | | |
|--|------------------------|----|----|----|
| | number of associations | | | |
| Less than 40 | 4 | 3 | 3 | 3 |
| 40-49.9 | 7 | 5 | 1 | 3 |
| 50-59.9 | 7 | 8 | 10 | 5 |
| 60-69.9 | 8 | 8 | 8 | 12 |
| 70 and over | 6 | 8 | 10 | 9 |
| Total | 32 | 32 | 32 | 32 |

SEASONAL VARIATIONS IN THE USE OF CREDIT

There were wide seasonal variations found in the use of accounts receivable credit. This variation was influenced by the receipts of farm income, the types of production supplies being handled, and other factors. All types of associations showed a greater seasonal variation in credit sales than in total sales. The seasonal variation was measured by taking a 12-month average of each—total sales, credit sales, and accounts receivable, as a base of 100 per cent. Each month's values were then divided by the base value to derive the indices shown in table 7.

The grain associations reached their highest sales volume, credit sales, and receivables position in April. The April sales in grain associations were 20 per cent above the 12-month average, credit sales were 42 per cent above, and the receivables were 12 per cent above average.

The oil cooperatives reached their

Table 6. Average Credit Sales per Association in 87 Minnesota Farm Supply Associations According to Commodity Type, 1950-1953

| Associations | | 1950 | 1951 | 1952 | 1953 |
|----------------------|--------|-----------|-----------|-----------|-----------|
| Type | Number | | | | |
| Grain | 46 | \$ 80,927 | \$ 89,808 | \$100,259 | \$106,889 |
| Oil | 32 | 148,134 | 159,936 | 172,991 | 179,712 |
| General supply | 9 | 99,217 | 114,169 | 139,552 | 148,197 |
| All types | 87 | \$107,539 | \$118,122 | \$131,076 | \$137,948 |

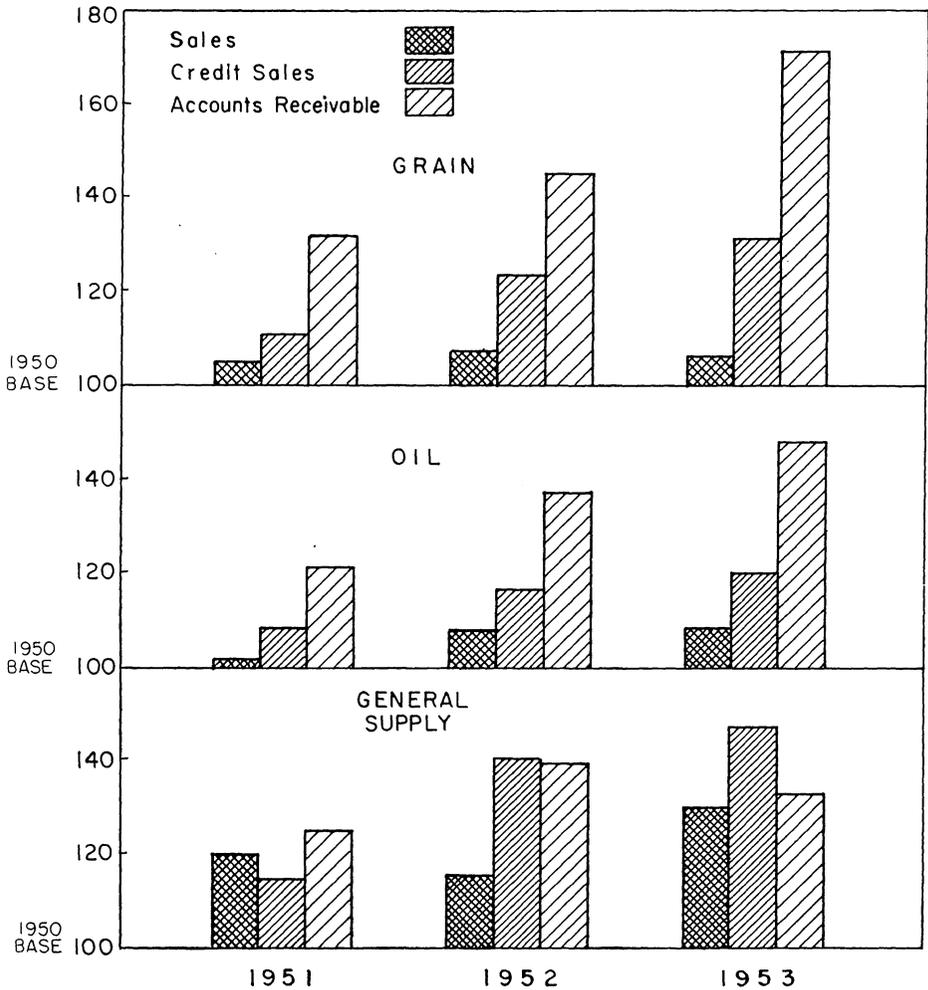


Fig. 2. Total sales, credit sales, and accounts receivable of 87 farm supply associations for three years, shown as a percentage of 1950.

highest total sales and credit sales volume in May when they were 19 and 28.6 per cent above the 12-month average, respectively. The accounts receivable reached their highest level of 22.9 per cent above average in June.

Sales of fertilizer, seed, fungicides, etc., are made earlier than the heavy spring sales of petroleum products.

This accounts for the earlier peak months in grain compared to oil associations. The oil associations' credit sales reached substantial peaks twice during the year. They were highest in the spring at 28.6 per cent above average, but reached an October high of 20 per cent above average. Crop harvest and fall plowing account for the

Table 7. Monthly Supply Sales, Credit Sales, and Accounts Receivables of 78 Associations, July 1952 through June 1953

| Month | Total sales | Index* | Credit sales | Index* | Accounts receivable | Index* |
|--------------------|-------------|--------|--------------|--------|---------------------|--------|
| GRAIN ASSOCIATIONS | | | | | | |
| July | \$1,046,932 | 102.5 | \$428,705 | 117.4 | \$ 878,526 | 107.3 |
| August | 1,146,931 | 112.3 | 376,880 | 103.2 | 889,420 | 108.6 |
| September | 933,237 | 91.4 | 342,903 | 93.9 | 908,543 | 110.9 |
| October | 1,079,485 | 105.7 | 335,411 | 91.9 | 854,826 | 104.4 |
| November | 988,933 | 96.9 | 230,646 | 63.2 | 809,651 | 98.9 |
| December | 963,079 | 94.3 | 306,434 | 83.9 | 665,358 | 81.2 |
| January | 853,347 | 83.6 | 291,343 | 79.8 | 688,664 | 84.1 |
| February | 649,304 | 63.6 | 252,639 | 69.2 | 706,682 | 86.3 |
| March | 924,307 | 90.5 | 366,055 | 100.3 | 768,651 | 93.9 |
| April | 1,225,169 | 120.0 | 518,436 | 142.0 | 917,466 | 112.0 |
| May | 1,197,987 | 117.3 | 517,225 | 141.7 | 906,605 | 110.7 |
| June | 1,242,528 | 121.7 | 413,792 | 113.4 | 833,141 | 101.7 |
| OIL ASSOCIATIONS | | | | | | |
| July | \$ 894,812 | 111.8 | \$529,652 | 112.1 | \$1,098,101 | 115.7 |
| August | 848,641 | 106.0 | 507,538 | 107.4 | 1,078,681 | 113.6 |
| September | 907,534 | 113.4 | 555,295 | 117.5 | 1,137,199 | 119.8 |
| October | 946,119 | 118.2 | 569,069 | 120.4 | 1,100,905 | 116.0 |
| November | 693,632 | 86.7 | 376,863 | 79.8 | 877,348 | 92.4 |
| December | 682,274 | 85.2 | 380,664 | 80.6 | 679,020 | 71.5 |
| January | 630,639 | 78.8 | 356,687 | 75.5 | 685,345 | 72.2 |
| February | 577,425 | 72.1 | 322,208 | 68.2 | 733,253 | 77.3 |
| March | 740,078 | 92.5 | 411,642 | 87.1 | 812,240 | 85.6 |
| April | 858,173 | 107.2 | 531,242 | 112.4 | 927,075 | 97.7 |
| May | 952,541 | 119.0 | 607,751 | 128.6 | 1,093,833 | 115.2 |
| June | 873,546 | 109.1 | 521,429 | 110.4 | 1,166,671 | 122.9 |

* Index is calculated by dividing the current month data by the 12-month average of the series.

October high in credit sales. Generally patrons request the most credit during

the crop production season and least during the winter months.

Rising Volume of Receivables

The upward trend in accounts receivable from 1950 through 1953 indicates the severity of the credit problem. In this period the total amount of receivables held by the 87 associations

increased from \$1,067,677 to \$1,689,582, or 58 per cent.

The receivables of grain associations increased 72 per cent from 1950 to 1953 (table 8). The corresponding

Table 8. Average Accounts Receivable per Association in 87 Farm Supply Associations, 1950-1953

| Associations | | 1950 | 1951 | 1952 | 1953 |
|----------------------|--------|----------|----------|----------|----------|
| Type | Number | | | | |
| Grain | 46 | \$11,041 | \$14,627 | \$16,167 | \$18,961 |
| Oil | 32 | 14,097 | 17,192 | 19,391 | 20,980 |
| General supply | 9 | 12,075 | 15,104 | 16,862 | 16,227 |
| All types | 87 | \$12,272 | \$15,620 | \$17,425 | \$19,420 |

changes for oil and general supply associations were 49 and 34 per cent, respectively. These increases occurred during a period when sales increased an average of only 8 per cent.

PROPORTION OF ASSETS IN RECEIVABLES

Table 9 indicates that there were sizable increases in the percentage of their total assets which these associations had tied up in receivables between 1950 and 1953. There were only two grain cooperatives with more than 20 per cent of their assets in receivables in 1950 compared to 5 in 1953. More of the oil associations had a larger percentage of their assets tied up in receivables in 1953 compared with 1950 (table 9).

Table 9. Distribution of 87 Associations According to the Percentage That Receivables Are of Total Assets, 1950-1953

| Percentage that receivables are of total assets | 1950 1951 1952 1953 | | | |
|---|------------------------|-------|-------|-------|
| | number of associations | | | |
| Grain associations | | | | |
| Less than 5.0 | 18 | 13 | 16 | 14 |
| 5.0- 9.9 | 12 | 15 | 13 | 13 |
| 10.0-14.9 | 8 | 9 | 10 | 10 |
| 15.0-19.9 | 6 | 4 | 5 | 4 |
| 20.0-24.9 | 1 | 3 | 1 | 2 |
| 25.0 and more | 1 | 2 | 1 | 3 |
| Total | 46 | 46 | 46 | 46 |
| Oil associations | | | | |
| Less than 5.0 | 4 | 3 | 3 | 2 |
| 5.0- 9.9 | 9 | 7 | 5 | 6 |
| 10.0-14.9 | 9 | 7 | 8 | 9 |
| 15.0-19.9 | 2 | 3 | 3 | 5 |
| 20.0-24.9 | 4 | 7 | 8 | 2 |
| 25.0 and more | 4 | 5 | 5 | 8 |
| Total | 32 | 32 | 32 | 32 |
| General supply associations | | | | |
| Less than 5.0 | 2 | 1 | 1 | 1 |
| 5.0- 9.9 | 5 | 4 | 5 | 4 |
| 10.0-14.9 ..... | ..... | 2 | 1 | 2 |
| 15.0-19.9 | 1 | ..... | 1 | 1 |
| 20.0-24.9 ..... | ..... | 1 | ..... | ..... |
| 25.0 and more | 1 | 1 | 1 | 1 |
| Total | 9 | 9 | 9 | 9 |

Table 10. Average Percentage of Total Assets in Receivables in 87 Associations, 1950-1953

| Type | Associations | | | |
|----------------------|--------------|------|------|-----------|
| | Number | 1950 | 1951 | 1952 1953 |
| per cent | | | | |
| Grain | 46 | 7.4 | 9.0 | 8.3 9.5 |
| Oil | 32 | 10.8 | 12.4 | 13.1 13.2 |
| General supply | 9 | 11.5 | 11.8 | 11.9 10.9 |
| All types | 87 | 8.9 | 10.4 | 10.1 10.8 |

The assets of an organization become less liquid as the proportion tied up in receivables increases, because current assets are shifting from cash and inventories into receivables. When assets become less liquid the association generally has greater difficulty in paying its current obligations. The average percentage of assets in receivables increased from 7.4 to 9.5 per cent in grain associations over the period, while oil associations showed an increase from 10.8 to 13.2 per cent (table 10).

Table 11 presents an average balance sheet for each of three types of associations. Net worth accounted for 48.8 per cent of the total capital of grain associations in 1953 compared to 60 per cent in 1950. Oil associations had net worth equal to approximately 74 per cent of total capital on both dates. Supply associations had net worth equal to 73 per cent of total capital in 1953 compared with 79 per cent in 1950.

It was previously noted that the proportion of assets tied up in receivables had increased at the same time net worth declined. Lower owner equity along with more capital tied up in receivables hampers operating efficiency. When associations become less liquid they are less able to take advantage of savings on cash or quantity purchases, also they have difficulty in meeting their obligations promptly.

PERCENTAGE RECEIVABLES ARE OF NET WORTH

On the basis of the data in table 11, receivables account for 19.5 per cent of

Table 11. Average Balance Sheet of 87 Associations, 1953

| Items | Grain | | Oil | | General supply | |
|--|------------------|--------------------|------------------|--------------------|------------------|--------------------|
| | 1953 | Component per cent | 1953 | Component per cent | 1953 | Component per cent |
| Current assets | | | | | | |
| Cash | \$ 8,325 | 4.1 | \$ 14,050 | 8.8 | \$ 4,465 | 3.1 |
| Notes receivable | 1,717 | .8 | 541 | .3 | 572 | .4 |
| Gross accounts receivable | 19,219 | 9.5 | 20,955 | 13.2 | 16,994 | 11.6 |
| Less: Reserve for bad debts | 534 | .2 | 1,699 | 1.1 | 1,000 | .7 |
| Net accounts receivable | \$ 18,685 | 9.3 | \$ 19,256 | 12.1 | \$ 15,994 | 10.9 |
| Inventories | 75,688 | 37.5 | 39,680 | 24.9 | 46,977 | 32.1 |
| Other current assets | 10,848 | 5.4 | 1,500 | 1.0 | 19,932 | 13.6 |
| Total current assets | \$115,263 | 57.1 | \$ 75,027 | 47.1 | \$ 87,940 | 60.1 |
| Investment assets | 10,808 | 5.4 | 41,002 | 25.8 | 22,168 | 15.2 |
| Fixed assets | 72,744 | 36.0 | 41,058 | 25.8 | 32,234 | 22.0 |
| Other assets | 3,009 | 1.5 | 2,113 | 1.3 | 4,005 | 2.7 |
| TOTAL ASSETS | \$201,824 | 100.0 | \$159,200 | 100.0 | \$146,347 | 100.0 |
| Liabilities | | | | | | |
| Current liabilities | \$ 90,292 | 44.7 | \$ 30,843 | 19.4 | \$ 36,222 | 24.8 |
| Long term liabilities | 13,162 | 6.5 | 11,298 | 7.1 | 3,049 | 2.1 |
| Total liabilities | \$103,454 | 51.2 | \$ 42,141 | 26.5 | \$ 39,271 | 26.9 |
| Net worth | 98,370 | 48.8 | 117,059 | 73.5 | 107,076 | 73.1 |
| TOTAL LIABILITIES AND NET WORTH | \$201,824 | 100.0 | \$159,200 | 100.0 | \$146,347 | 100.0 |

the net worth in the grain associations, 17.9 per cent in the oil associations, and 15.9 per cent of the net worth in the supply associations. To the extent that patrons absorb the net worth in their own outstanding accounts they are not supplying the association with financing.

However, since these associations must supply credit in order to meet competition, it may be more accurate to assume that only the proportion of net worth tied up in receivables that are past due jeopardizes the financial position of the organization. Table 12 shows that 42 of the 87 associations have 10 per cent or more of their net worth tied up in past due receivables.

AGING OF ACCOUNTS

The age of an account is the length of time it is outstanding. It is important to know the age of each account so that older accounts may get more

collection attention. The aging of accounts is an excellent method of checking the effectiveness of credit policies. The aging procedure involves listing each account and classifying it into various age groups such as less than 30 days, 30 days to 6 months or 1 year, and more than 6 months or 1 year.

Fifty-one of the 87 associations classified their accounts into the following age classes: less than 30 days, 30 days to 6 months, 6 months and more. These

Table 12. Distribution of 87 Associations According to the Proportion of Net Worth That Is Tied Up in Past Due Accounts, 1953

| Percentage of net worth in past due accounts | General supply | | | All |
|--|------------------------|-----------|----------|-----------|
| | Grain | Oil | supply | |
| | number of associations | | | |
| Less than 5 | 14 | 5 | 2 | 21 |
| 5.0-9.9 | 12 | 7 | 5 | 24 |
| 10.0-14.9 | 9 | 9 | 0 | 18 |
| 15.0-24.9 | 5 | 4 | 1 | 10 |
| 25.0 and more | 6 | 7 | 1 | 14 |
| Total | 46 | 32 | 9 | 87 |

Table 13. Percentage of Accounts Receivable of 51 Cooperatives in Three Age Classes, 1953

| Associations | | Less than 30 days | 30 days to 6 months | More than 6 months | Total |
|----------------------|--------|----------------------|------------------------|-----------------------|-------|
| Type | Number | | | | |
| per cent | | | | | |
| Grain | 16 | 48.7 | 36.3 | 15.0 | 100.0 |
| Oil | 27 | 32.5 | 48.8 | 18.7 | 100.0 |
| General supply | 8 | 37.7 | 44.7 | 17.6 | 100.0 |
| All types | 51 | 38.5 | 44.0 | 17.5 | 100.0 |

Table 14. Percentage of Accounts Receivable of 38 Supply Cooperatives in Three Age Classes, 1953

| Associations | | Less than 30 days | 30 days to to 1 year | More than 1 year | Total |
|----------------------|--------|----------------------|-------------------------|---------------------|-------|
| Type | Number | | | | |
| per cent | | | | | |
| Grain | 11 | 48.7 | 44.2 | 7.1 | 100.0 |
| Oil | 23 | 32.5 | 56.5 | 11.0 | 100.0 |
| General supply | 4 | 37.7 | 56.6 | 5.7 | 100.0 |
| All types | 38 | 38.5 | 52.2 | 9.3 | 100.0 |

51 associations included 16 grain, 27 oil, and 8 general supply cooperatives. According to table 13 the grain associations had the largest percentage of current accounts and also the smallest percentage of accounts more than 6 months old.

An alternative and very useful classification of accounts employed by 38 of the cooperatives divides the accounts into three groups as follows: less than 30 days, 30 days to 1 year, and more than 1 year. The accounts falling in the 1 year and over age group represent the problem accounts. Table 14 shows that 23 oil associations had an average of 11 per cent of their receivables outstanding more than 1 year as of the end of fiscal year 1953.

Forty-four cooperatives had age classifications that included the age group, more than 1 year. A distribution of these 44 cooperatives shows that in 9 more than 20 per cent of the receivables were more than 1 year old (table 15).

Accounts that fall into the more than 1 year age group have done so because of a lax or poorly designed credit

policy. Spring to fall credit granting is one example of how outstanding accounts are allowed to get old. Spring to fall credit is usually granted on the basis of fall crop income. In this instance a crop failure may cause default on the account and the age of that account will be well over 1 year before the next year's crop is harvested.

Experience shows that older accounts are definitely more difficult to collect. Losses increase as the accounts get

Table 15. Distribution of 44* Associations According to the Percentage of Accounts That Are More Than 1 Year Old, 1953

| Percentage more than 1 year old | Grain | Oil | Supply | All |
|------------------------------------|-------|-----|--------|-------|
| | | | | types |
| number of associations | | | | |
| None | 2 | 0 | 0 | 2 |
| Less than 5.0 | 5 | 7 | 1 | 13 |
| 5.0-9.9 | 1 | 5 | 1 | 7 |
| 10.0-14.9 | 2 | 4 | 1 | 7 |
| 15.0-19.9 | 3 | 3 | 0 | 6 |
| 20.0-24.9 | 1 | 2 | 0 | 3 |
| 25.0 and over | 2 | 3 | 1 | 6 |
| Total | 16 | 24 | 4 | 44 |

* Forty-four associations indicated the amount of receivables more than 1 year old even though only 38 associations used the full classification less than 30 days, 30 days to 1 year, and more than 1 year.

older. Studies have been made that indicate the average value of an account receivable dollar at various ages. One study shows that an account receivable

dollar outstanding 60 days is worth 89 cents, at 6 months the dollar is worth 67 cents, and at the end of 1 year it is worth 45 cents.⁴

Days' Sales in Receivables

Days' sales in receivables is a measure frequently used to determine the effectiveness of credit policies. It is the ratio of the receivables in the business to the average daily sales. Thus, if receivables are \$15,000 and average daily sales \$1,000, the ratio would be as follows:

$$\frac{\text{Receivables}}{\text{Average daily sales}} = \frac{\$15,000}{\$1,000} = \frac{15 \text{ days' sales in receivables}}{1}$$

The larger the number of days' sales that are tied up in receivables the poorer the credit situation.

The ratio of days' sales in receivables may be calculated in several ways depending upon the accounting data available and the use to be made of the ratio. For purposes of this study the ratio was calculated in three different ways.

Days' sales in receivables was calculated first by dividing the receivables at the end of the year by the daily average of all supply sales (cash and credit). In calculating the daily average of all sales the annual sales are usually divided by 300, which represents the approximate number of business days in a year. However, a year of 360 or 365 days may be used. This method was used by a large proportion of the farm supply associations in the state and, therefore, may be best for purposes of comparison.

A second way of calculating is to divide the 12-month average of re-

ceivables by the daily average of all sales. Using a 12-month average of receivables serves to counteract the effect on the ratio of an extreme receivable position at the end of the fiscal year.

In the third method the year-end receivables are divided by the average daily credit sales (excluding cash sales). The annual credit, or charge sales, are divided by 360 days in order to facilitate comparison with published credit terms such as "net 30 days." This method is a desirable one since it deals only with the credit sales—the sales which lead to credit problems.

Using the first of the foregoing methods it was found that oil associations averaged 15 days' sales in receivables in 1950 (table 16). However, the credit situation deteriorated over the period to 1953 when they showed 20.5 days' sales outstanding in receivables. Fifteen days' sales in receivables or less is the desirable level for this ratio.

According to table 17, 18 of the 32 oil associations had less than 15 days' sales in receivables in 1950, while in

Table 16. Average Number of Days' Sales in Receivables in 81 Associations, 1950-1953

| Associations | | | | | |
|----------------|--------|-------|-------|-------|------|
| Type | Number | 1950 | 1951 | 1952 | 1953 |
| number of days | | | | | |
| Grain* | 40 | ..... | ..... | ..... | 17.0 |
| Oil | 32 | 15.0 | 18.0 | 19.2 | 20.5 |
| General supply | 9 | 16.1 | 16.7 | 19.4 | 16.6 |
| All types | 81 | 15.2 | 17.7 | 19.2 | 18.3 |

⁴C. W. Phelps, *The ten hidden losses in slow charge accounts*, Household Finance Corporation Bulletin, page 5, 1937.

* Supply sales separate from grain sales were available for 40 associations for 1953 only.

Table 17. Distribution of 81 Associations According to Type and Days' Sales in Receivables, 1950-1953

| Type of association and days' sales in receivables | 1950 | 1951 | 1952 | 1953 |
|--|------------------------|------|------|------|
| | number of associations | | | |
| Grain* | | | | |
| Less than 15 | | | | 20 |
| 15.0-29.9 | | | | 9 |
| 30.0 and more | | | | 11 |
| Total | | | | 40 |
| Oil | | | | |
| Less than 15 | 18 | 10 | 8 | 8 |
| 15.0-29.9 | 10 | 15 | 15 | 16 |
| 30.0 and more | 4 | 7 | 9 | 8 |
| Total | 32 | 32 | 32 | 32 |
| General supply | | | | |
| Less than 15 | 4 | 4 | 5 | 3 |
| 15.0-29.9 | 5 | 3 | 3 | 6 |
| 30.0 and more | | 2 | 1 | |
| Total | 9 | 9 | 9 | 9 |

* Information available for 40 grain associations for 1953 only.

1953 there were only 8 associations within the desired 15-day level.

The state was divided into four areas to determine whether or not area differences influenced the credit situation in the cooperatives.

Twenty-four per cent of the associations in the Southeast have less than 15 days' sales in receivables. The same is true for 55 per cent of the associations in the Southwest and 28 per cent of those in the Northeast, while only 20

per cent of the cooperatives in the Northwest have reduced days' sales in receivables to less than 15 days.

When days' sales in receivables are calculated by the second method, using the 12-month average of receivables rather than the year-end figure, the receivable turnover ratio of these associations is considerably poorer. In table 19 where days' sales in receivables were calculated on this basis, days' sales averaged 7.4, 15.6, and 7.9 days higher for grain, oil, and supply associations, respectively, than in table 16 in which the first method was used. The differences arise because most associations make a drive to reduce receivables at the end of each fiscal year. This results in a receivable ratio that appears more favorable than is typical throughout the year. The practice of reducing receivables to abnormally low levels at the close of the year is referred to as "window dressing."

Table 19. Days' Sales in Receivables in 77 Associations, 1953*

| Associations | | |
|----------------------|--------|----------------------------|
| Type | Number | Days' sales in receivables |
| Grain | 40 | 24.4 |
| Oil | 29 | 36.1 |
| General supply | 8 | 24.5 |
| All types | 77 | 29.2 |

* Twelve-month average of receivables used in this table. Monthly receivable balances were available in only 77 associations.

Table 18. Distribution of 81 Associations According to the Days' Sales in Receivables by Area, 1953

| Days' sales in receivables | Area | | | | Total |
|----------------------------|-----------|-----------|-----------|-----------|-------|
| | Southeast | Southwest | Northeast | Northwest | |
| number of associations | | | | | |
| Less than 15 | 4 | 20 | 5 | 2 | 31 |
| 15.0-29.9 | 9 | 9 | 8 | 5 | 31 |
| 30.0 and more | 4 | 7 | 5 | 3 | 19 |
| Total | 17 | 36 | 18 | 10 | 81 |

Days' Credit Sales in Receivables

When the third method is used, the year end receivables are divided by the average daily *credit sales*. There was an upward trend in this ratio over the four years for grain and oil cooperatives, while the general supply associations showed a little improvement (table 20).

Since only credit sales are used in this ratio it can be compared directly

Table 20. Average Days' Credit Sales in Receivables in 87 Associations, 1950-1953

| Associations | | | | | |
|----------------------|--------|--------------------|------|------|------|
| Type | Number | 1950 | 1951 | 1952 | 1953 |
| | | days' credit sales | | | |
| Grain | 46 | 49.1 | 58.6 | 58.1 | 63.9 |
| Oil | 32 | 34.3 | 38.7 | 40.4 | 42.0 |
| General supply | 9 | 43.8 | 47.6 | 43.5 | 39.0 |
| All types | 87 | 41.1 | 47.6 | 47.9 | 50.7 |

Table 21. Distribution of 87 Associations According to Type and Days of Credit Sales in Receivables, 1950-1953

| Type of association and days' credit sales in receivables | 1950 | 1951 | 1952 | 1953 |
|---|------|------|------|------|
| number of associations | | | | |
| Grain | | | | |
| Less than 30 | 7 | 5 | 6 | 5 |
| 30.0-59.9 | 15 | 17 | 17 | 14 |
| 60.0-89.9 | 10 | 9 | 6 | 10 |
| 90.0 and more | 14 | 15 | 17 | 17 |
| Total | 46 | 46 | 46 | 46 |
| Oil | | | | |
| Less than 30 | 15 | 8 | 9 | 8 |
| 30.0-59.9 | 15 | 19 | 15 | 18 |
| 60.0-89.9 | 1 | 5 | 7 | 3 |
| 90.0 and more | 1 | 0 | 1 | 3 |
| Total | 32 | 32 | 32 | 32 |
| General supply | | | | |
| Less than 30 | 2 | 1 | 2 | 1 |
| 30.0-59.9 | 5 | 8 | 7 | 7 |
| 60.0-89.9 | 2 | 0 | 0 | 1 |
| 90.0 and more | 0 | 0 | 0 | 0 |
| Total | 9 | 9 | 9 | 9 |

with the credit terms offered by the association. In this case the credit sales are divided by 360 days because the terms applied to credit cover consecutive days, including weekends and holidays. The most common credit terms offered by the 87 associations was 30 days. Table 20 indicates that the ratio averaged above this level for all three types of associations in 1950 and the trend from 1950-53 was away from the desired level.

Table 21 shows that there were only 8 oil associations with less than 30 days' credit sales in receivables in 1953 compared to 15 in 1950.

Days' credit sales in receivables were calculated by sales volume groups for grain and oil associations to determine the effect of size on the credit situation. It may be noted that the association with the smallest sales volume in both cases had substantially more days of credit sales outstanding than was true of the larger cooperatives. This may be due to the fact that larger cooperatives

Table 22. Days' Credit Sales in Receivables in 69 Associations by Type and Sales Volume, 1953*

| Type of association and sales volume | Number of associations | Days' credit sales in receivables |
|--------------------------------------|------------------------|-----------------------------------|
| thousands of dollars | | |
| Grain | | |
| Less than 400 | 12 | 91.0 |
| 400-799 | 16 | 68.0 |
| 800 and more | 12 | 71.7 |
| Total | 40 | 68.2 |
| Oil | | |
| Less than 200 | 11 | 80.6 |
| 200-399 | 11 | 62.0 |
| 400 and more | 7 | 54.3 |
| Total | 29 | 61.1 |

* Calculated from a 12-month average of accounts receivable. Information was available for 69 of the grain and oil associations.

can attract somewhat better management. Another reason may be that the larger associations were in a position

to employ more clerical and accounting help and thus were able to effect better receivable controls.

Provisions for Losses on Accounts

There are two commonly used methods of providing for bad debt losses. One of these involves making an annual provision for a bad debt reserve. The other involves writing off uncollectible accounts as they occur.

BAD DEBT RESERVES

Bad debt reserves are provided on the basis of losses anticipated in view of past experiences with credit losses. The annual additions to the reserve can be made in several ways. The following methods of determining the amount to add to the reserve each year are the most common: (1) a percentage of outstanding receivables, (2) a percentage of credit sales or total sales, or (3) a flat amount added each year.

The reserve method provides for losses in advance of their occurrence. As losses on accounts receivable occur they are charged against the reserve. This method reduces the fluctuations in net margins caused by variations in bad debt losses. On the balance sheet the bad debt reserve appears as a subtraction from the accounts receivable. This serves to avoid overstating the value of receivables.

Thirty-three of the 87 cooperatives provided reserves for bad debts in 1953. Approximately two-thirds of the oil and general supply associations in the study made bad debt provisions while only 13 per cent of the grain associations made such provisions (table 23). It is good business practice for cooperatives to provide reserves for possible losses especially in view of their present receivable position.

Table 23. Minnesota Farm Supply Associations That Provide Reserves for Bad Debt Losses, 1950-1953

| Type | Associations Number | Associations providing bad debt reserves | |
|----------------------|------------------------|---|------|
| | | 1950 | 1953 |
| | | number of associations | |
| Grain | 46 | 6 | 6 |
| Oil | 32 | 20 | 21 |
| General supply | 9 | 5 | 6 |
| All types | 87 | 31 | 33 |

Table 24 indicates that provisions for bad debts have not kept pace with the rising volume of receivables. In 1953 there were more associations with a lower proportion of reserves to receivables than in 1950. Almost 50 per cent of all associations that made provisions for bad debts established reserves of less than 8 per cent of their outstanding accounts in 1953. Only 20 per cent of the associations established reserves this small in 1950. Even among the associations which set up reserves for bad debts, steps should be taken to provide more adequate reserves.

WRITE-OFF OF UNCOLLECTIBLE ACCOUNTS

Another method of handling bad debt losses is to write off the uncollectible accounts. Associations which use this method determine which accounts are uncollectible and then write these off as a current year expense. This method has the effect of varying net margins considerably because of the yearly variations in uncollectible accounts. Generally accounts should be written off when they are more than 1 year old.

Table 24. Distribution of 87 Associations According to the Proportion That Bad Debt Reserves Are of Accounts Receivable, 1950 and 1953

| Percentage reserve is of gross receivables | 1950 | | | | 1953 | | | |
|--|------------------------|-------|--------|-----------|-------|-----|--------|-----------|
| | Grain | Oil | Supply | All types | Grain | Oil | Supply | All types |
| | number of associations | | | | | | | |
| None | 40 | 12 | 4 | 56 | 40 | 11 | 3 | 54 |
| 0 - 3.99 ..... | ..... | ..... | 1 | 1 | ..... | 2 | 1 | 3 |
| 4.0- 5.99 ..... | ..... | 2 | ..... | 2 | 1 | 5 | 1 | 7 |
| 6.0- 7.99 | 1 | 1 | 1 | 3 | ..... | 3 | 2 | 5 |
| 8.0- 9.99 ..... | ..... | 3 | ..... | 3 | ..... | 3 | ..... | 3 |
| 10.0-19.99 | 3 | 6 | 3 | 12 | 3 | 2 | 1 | 6 |
| 20.0 and more | 2 | 8 | ..... | 10 | 2 | 6 | 1 | 9 |
| Total | 46 | 32 | 9 | 87 | 46 | 32 | 9 | 87 |

As may be seen in table 25, there are wide year-to-year fluctuations in the size of bad debt write-offs. There were no significant changes in the percentage of accounts receivable that were being written off over the four-year period (table 26).

Fourteen grain associations did not make any bad debt write-offs nor provide bad debt reserves during the four years covered in the study (table 27).

These associations are overstating the value of their assets because old uncollectible accounts are being carried at full value. It is probable that heavy losses will have to be absorbed in some future year.

All of the oil and general supply associations were making some type of provision for uncollectible accounts. Several of them used both methods (table 27).

Table 25. Number of Associations Making Bad Debt Write-Offs and the Average Value of the Write-Offs in 87 Associations, 1950-1953

| Associations | | 1950 | | 1951 | | 1952 | | 1953 | |
|----------------------|--------|--------|-----------|--------|-----------|--------|-----------|--------|-----------|
| Type | Number | Number | Write-off | Number | Write-off | Number | Write-off | Number | Write-off |
| Grain | 46 | 11 | \$264 | 14 | \$435 | 13 | \$346 | 16 | \$388 |
| Oil | 32 | 14 | 306 | 17 | 307 | 18 | 287 | 14 | 341 |
| General supply | 9 | 4 | 2,088 | 6 | 548 | 4 | 984 | 5 | 1,327 |
| All types | 87 | 27 | \$536 | 37 | \$394 | 35 | \$388 | 35 | \$503 |

Table 26. Distribution of 57* Associations According to the Percentage the Write-Off Is of Accounts Receivable, 1950-1953

| Percentage bad debt write-off is of accounts receivable | 1950 | | | 1953 | | |
|---|------------------------|-----|--------|-------|-----|--------|
| | Grain | Oil | Supply | Grain | Oil | Supply |
| | number of associations | | | | | |
| 0 | 15 | 9 | 4 | 10 | 9 | 3 |
| 0 -1.99 | 5 | 8 | 0 | 10 | 10 | 1 |
| 2.0-3.99 | 2 | 3 | 2 | 1 | 2 | 3 |
| 4.0-5.99 | 2 | 2 | 1 | 4 | 2 | 0 |
| 6.0 and more | 2 | 1 | 1 | 1 | 0 | 1 |
| Total | 26 | 23 | 8 | 26 | 23 | 8 |

* Each of the 57 associations made a write-off in at least one of the four years in the study.

Table 27. Distribution of 87 Associations According to Type of Bad Debt Provisions Made in 1950 and 1953

| Provisions made | 1950 | | | 1953 | | |
|--|-------|-------|--------|-------|-------|--------|
| | Grain | Oil | Supply | Grain | Oil | Supply |
| Provided reserve for bad debts..... | 6 | 20 | 5 | 6 | 21 | 6 |
| Made a bad debt write-off in 1 of last 4 years | 26 | 23 | 8 | 26 | 23 | 8 |
| Neither of the above..... | 14 | ..... | ..... | 14 | ..... | ..... |
| Total | 46 | 43* | 13* | 46 | 44* | 14* |

* In several instances both a write-off and a reserve were used by oil and general supply associations.

Both methods were used sometimes when an association was faced with the need of writing off a larger amount of uncollectibles than was provided for by reserves.

Bad debt losses in the period 1950-

1953 were relatively light. The present high level of receivables along with a cost-price squeeze in agriculture indicates that reserves should be increased substantially.

Cost of Credit

Merchandise sales made on credit to good credit risks within the framework of a sound credit policy can be profitable. However, such sales involve added costs above the costs incurred in making cash sales. Some of these added costs of granting credit can be measured and some cannot. The more important of the measurable costs of credit are: (1) interest on the capital tied up in receivables, (2) additional managerial duties and accounting work associated with accounts, (3) additional office supplies used, (4) added travel and legal expense, and (5) the losses on uncollectible accounts.

One cost that cannot be measured involves the amount of patronage lost from those who are under pressure to pay their accounts. The measurable average credit costs per \$100 of total sales were found to be the highest in oil associations; all costs amounted to \$1.21 (table 28). The personnel expense in the oil associations was twice the amount experienced by either the grain or general supply associations.

Table 29 shows the credit costs per \$100 of credit sales for the same 85 associations. The measurable credit costs per \$100 of credit sales were \$2.08 in the oil associations in 1953. In a

Table 28. Average Measurable Credit Costs per \$100 of Total Sales in 85* Associations, 1953

| Credit cost items | Grain | Oil | Supply | All types |
|--------------------------------|---------|---------|---------|-----------|
| Personnel expense | \$0.247 | \$0.531 | \$0.270 | \$0.363 |
| Office supplies | .050 | .060 | .093 | .059 |
| Travel and legal expense | .017 | .031 | .032 | .024 |
| Bad debt losses | .085 | .111 | .276 | .116 |
| Interest @ 4.5 per cent† | .345 | .479 | .270 | .390 |
| Total cost | \$0.744 | \$1.212 | \$0.941 | \$0.952 |

* Two associations did not estimate costs.

† Interest at 4.5 per cent on the average monthly receivables.

Table 29. Average Measurable Credit Costs per \$100 of Credit Sales in 85 Associations, 1953

| Credit cost items | Grain | Oil | Supply | All types |
|--------------------------------|----------------|----------------|----------------|----------------|
| Personnel expense | \$0.617 | \$0.910 | \$0.535 | \$0.748 |
| Office supplies | .124 | .104 | .185 | .121 |
| Travel and legal expense | .043 | .053 | .064 | .050 |
| Bad debt losses | .213 | .190 | .547 | .222 |
| Interest @ 4.5 per cent | .861 | .819 | .536 | .805 |
| Total cost | \$1.858 | \$2.076 | \$1.867 | \$1.946 |

1940 study of 85 Minnesota oil associations it was found that the credit costs per \$100 of credit sales were \$3.41. From 1940 to 1953 total sales and credit sales volumes increased more than 300 per cent; this has had the effect of lowering the per unit cost of handling credit.

Also, over recent years favorable farm income has resulted in lower credit losses and less time was spent on credit. The prospects are that these costs will rise sharply in the period immediately ahead because a cost-price squeeze on farmers may give rise to higher credit losses. The higher volume of receivables held by these associations will mean that more time must be spent on credit work.

Managers, directors, and patrons should be fully aware of these added costs of credit sales so they appreciate the need for credit control. The difference in cost between serving a cash and credit customer indicates that a difference in prices for cash and credit sales is justified.

Two methods were used by 37 associations to try to equalize the cost difference between sales to cash or credit customers. A system of cash discounts was used by 26 associations; however, many of the discounts applied only to specific items. Large items such as bulk gasoline, feed, fertilizer, and machinery were the ones most generally sold on a cash discount basis.

A system of charging the credit customers more than those who paid cash was employed by 11 associations. However, in these 11 cases the price to cash and credit customers was the same at the time of sale. If the credit customer paid the account within 30 days the use of credit was free. After 30 days these 11 associations charged interest of 4 to 6 per cent on outstanding accounts. However, several managers indicated they were not always successful in collecting this interest charge.

A distribution of the 85 associations according to the percentage credit costs are of operating expense is presented in table 30. It was found that 21 out of the 32 oil associations had credit costs equal to 5 per cent or more of their

Table 30. Distribution of 85 Associations According to the Percentage Credit Costs Are of Total Operating Expenses, 1953

| Percentage credit cost is of operating expense | Grain | Oil | Supply | All types |
|--|------------------------|-----------|----------|-----------|
| | number of associations | | | |
| 0-.99 | 2 | 0 | 0 | 2 |
| 1.0-1.99 | 12 | 1 | 1 | 14 |
| 2.0-2.99 | 6 | 2 | 2 | 10 |
| 3.0-3.99 | 9 | 3 | 2 | 14 |
| 4.0-4.99 | 3 | 5 | 1 | 9 |
| 5.0-5.99 | 3 | 5 | 0 | 8 |
| 6.0-6.99 | 4 | 5 | 1 | 10 |
| 7.0 and more | 5 | 11 | 2 | 18 |
| Total | 44* | 32 | 9 | 85 |

* Two grain associations indicated that they were unable to estimate these costs.



Fig. 3. Granting credit involves additional accounting costs.

operating expense. In 18 out of the 85 associations credit costs were more than 7 per cent of total operating costs.

The total operating expenses averaged \$32,218 per association in the grain associations, \$46,283 in the oil cooperatives, and \$29,376 per association among the general supply cooperatives (table 31). The average measurable credit costs per association for these respective groups were \$2,063, \$3,631, and \$2,605. Credit costs averaged 6.4 per cent of the operating expense in the grain associations, 7.8 per cent in the oils, and 8.9 per cent in the general supply associations.

Average net margins have declined in the grain and oil associations in the last four years while net margins in the general supply associations have shown some gains. Net margins in

grain associations fell from \$14,404 in 1950 to \$7,961 in 1953. At the same time oil associations had a decrease in net margins from \$17,250 in 1950 to \$14,577 in 1953. Supply associations had net margins of \$7,331 in 1950 compared to \$9,537 in 1953.

It is noted that there were 29 grain associations with net margins equal to 2 per cent or more of sales in 1950, while in 1953 the number of associations with margins of this size declined to 12 (table 32). Among the oil associations, 22 had net margins equal to 5 per cent or more of sales in 1950, while only 11 had net margins this large in 1953.

The possibility of higher credit costs presents the danger that net margins may be reduced some more in the period ahead.

Table 31. Average Operating Statement of 87 Associations, 1953

| | Grain | | Oil | | General supply | |
|--|-----------|---------------------------------|-----------|---------------------------------|----------------|---------------------------------|
| | 1953 | Com- pon- ent per cent | 1953 | Com- pon- ent per cent | 1953 | Com- pon- ent per cent |
| Net sales | \$711,669 | 100.0 | \$311,974 | 100.0 | \$293,637 | 100.0 |
| Total cost of goods sold | 678,874 | 95.4 | 255,336 | 81.8 | 259,114 | 88.2 |
| Gross margin on sales | \$ 32,795 | 4.6 | \$ 56,638 | 18.2 | \$ 34,523 | 11.8 |
| Other operating income | 9,630 | 1.4 | 189 | .06 | 1,968 | .7 |
| Total gross margin | 42,425 | 6.0 | 56,827 | 18.2 | 36,491 | 12.4 |
| Total operating expense | 32,218 | 4.5 | 46,283 | 14.8 | 29,376 | 10.0 |
| Operating margin | \$ 10,207 | 1.5 | \$ 10,544 | 3.4 | \$ 7,115 | 2.4 |
| Nonoperating income | 1,462 | .2 | 6,642 | 2.1 | 3,310 | 1.127 |
| Nonoperating expense | 3,708 | .5 | 2,609 | .8 | 888 | .302 |
| Net nonoperating income and expense | 2,246 | .3 | 4,033 | 1.3 | 2,422 | .8 |
| Net margin | \$ 7,961 | 1.2 | \$ 14,577 | 4.7 | \$ 9,537 | 3.2 |
| TOTAL MEASURABLE CREDIT COSTS..... | \$ 2,063 | | \$ 3,631 | | \$ 2,605 | |

Table 32. Distribution of 87 Associations According to the Proportion Net Margins Are of Total Sales, 1950 and 1953

| Percentage net margins are of total sales | 1950 | | | 1953 | | |
|---|------------------------|-----|--------|-------|-----|--------|
| | Grain | Oil | Supply | Grain | Oil | Supply |
| | number of associations | | | | | |
| Loss | 6 | 0 | 1 | 11 | 1 | 1 |
| 0-.99 | 6 | 0 | 0 | 13 | 3 | 0 |
| 1.0-1.99 | 5 | 1 | 2 | 10 | 0 | 2 |
| 2.0-2.99 | 16 | 5 | 1 | 10 | 7 | 2 |
| 3.0-3.99 | 6 | 2 | 2 | 0 | 1 | 2 |
| 4.0-4.99 | 6 | 2 | 0 | 2 | 9 | 1 |
| 5.0-5.99 | 1 | 4 | 0 | 0 | 1 | 0 |
| 6.0-6.99 | 0 | 3 | 1 | 0 | 4 | 1 |
| 7 and more | 0 | 15 | 2 | 0 | 6 | 0 |
| Total | 46 | 32 | 9 | 46 | 32 | 9 |

Relationships of Receivables to Financing

The larger the amount of receivables that an association has the larger the amount of capital needed to finance operations. Operating efficiency is impaired when receivables account for a large proportion of the working capital. In such a case cash is usually short. In consequence the cooperative cannot take advantage of the discounts offered for cash payments for merchandise purchased. In addition limited cash

may retard an expansion of merchandise lines and services which may be rendered to patrons.

It was found that as the number of days' credit sales in receivables increases the proportion of working capital tied up in receivables increases. Table 33 shows that most of the associations with less than 40 days' credit sales in receivables had a lesser proportion of working capital tied up in

Table 33. Relationship Between the Percentage Receivables Are of Net Working Capital and Days' Credit Sales in Receivables in 87 Associations, 1953

| Days' credit sales in receivables | Percentage receivables are of net working capital | | | | | | Total | Average of the class |
|-----------------------------------|---|-----------|-----------|-----------|----------------|--------------------------|-------|----------------------|
| | Less than 25.0 | 25.0-49.9 | 50.0-74.9 | 75.0-99.9 | 100.0 and more | Negative working capital | | |
| | number of associations | | | | | | | per cent |
| Less than 20 | 2 | 2 | ..... | ..... | ..... | ..... | 4 | 26.0 |
| 20.0- 39.9 | 9 | 10 | 1 | ..... | 4 | 1 | 25 | 45.0 |
| 40.0- 59.9 | 2 | 10 | 8 | 2 | 2 | 1 | 25 | 60.9 |
| 60.0-119.9 | 2 | 8 | 2 | 2 | 3 | 4 | 21 | 78.9 |
| 120.0 and more | 1 | ..... | 2 | 1 | 4 | 4 | 12 | 148.9 |
| Total | 16 | 30 | 13 | 5 | 13 | 10* | 87 | |

* The average days' credit sales in receivables for the 10 associations with negative working capital is 140 days.

receivables than was true of associations with more than 60 days' credit sales in receivables. Eight of the 33 associations with over 60 days' credit sales in receivables had a negative working capital position. Associations with less than 20 days' credit sales in receivables had only 26 per cent of their working capital involved in receivables, while associations with 120 days' credit sales in receivables and more had receivables equal to approximately 149 per cent of working capital (table 33).

Another indication that receivables impair working capital is found in the relationship between current debts and receivable turnover. As the days' credit sales in receivables increase, the current debt position relative to total assets increases (table 34). The co-

operatives with less than 20 days' credit sales in receivables had an average current debt position equal to 8.1 per cent of their assets. Those associations with 120 days' credit sales and more had 16.8 per cent of their assets equaled by current debt.

The extent to which the current ratio (current assets divided by current liabilities) is affected by the accounts receivable position is shown in table 35. It is found that, generally, associations with slow turnover of receivables have lower current ratios. The 12 associations with 120 days' credit sales in receivables and more had a current ratio of only 1.23.

A poor credit program which allows receivables to rise relative to sales will ultimately cause increased costs and lower net margins. Large volumes of

Table 34. Relationship Between the Percentage Current Debts Are of Total Assets and the Days' Credit Sales in Receivables in 74 Associations, 1953

| Days' credit sales in receivables | Percentage current debts are of total assets | | | | | | Total | Average |
|-----------------------------------|--|---------|-----------|-----------|-----------|---------------|-------|----------|
| | Less than 5.0 | 5.0-9.9 | 10.0-14.9 | 15.0-19.9 | 20.0-24.9 | 25.0 and more | | |
| | number of associations | | | | | | | per cent |
| Less than 20 | 3 | 0 | 0 | 0 | 0 | 1 | 4 | 8.1 |
| 20.0- 39.9 | 10 | 2 | 5 | 1 | 0 | 4 | 22 | 10.5 |
| 40.0- 59.9 | 7 | 6 | 3 | 0 | 3 | 2 | 21 | 10.9 |
| 60.0-119.9 | 4 | 5 | 2 | 3 | 2 | 2 | 18 | 13.0 |
| 120 and more | 2 | 1 | 3 | 0 | 0 | 3 | 9 | 16.8 |
| Total | 26 | 14 | 13 | 4 | 5 | 12 | 74* | |

* Current debt information was available for only 74 of the 87 associations in the study.

Table 35. Relationship Between the Current Ratio and the Days' Credit Sales in Receivables in 87 Associations, 1953

| Days' credit sales in receivables | Current ratios | | | | | | | | Total | Average current ratio |
|-----------------------------------|----------------|----------|----------|----------|----------|----------|----------|--------------|-------|-----------------------|
| | Less than 1.0 | 1.0-1.49 | 1.5-1.99 | 2.0-2.99 | 3.0-3.99 | 4.0-4.99 | 5.0-5.99 | 6.0 and more | | |
| Less than 20.0 | | 1 | 1 | | 1 | | | 1 | 4 | 4.10 |
| 20.0- 39.9 | 2 | 4 | 6 | 3 | 3 | 1 | | 6 | 25 | 4.57 |
| 40.0- 59.9 | 1 | 5 | 2 | 4 | 4 | 4 | 1 | 4 | 25 | 4.14 |
| 60.0-119.9 | 3 | 8 | 4 | | 2 | 1 | 1 | 2 | 21 | 4.04 |
| 120 and more | 5 | 5 | 2 | | | | | | 12 | 1.23 |
| Total | 11 | 23 | 15 | 7 | 10 | 6 | 2 | 13 | 87 | |

receivables increase costs by increasing bad debt losses; also collection expense items rise. The tendency noted in table 36 is for net margin to decrease relative to sales as receivables rise relative to sales. The associations with receivables

equal to less than 3 per cent of sales had net margins equal to 5.26 per cent of sales. Those with 9 per cent and more of their sales in receivables had net margins equal to 4.58 per cent of sales (table 36).

Table 36. Relationship Between the Percentage Net Margins Are of Total Sales and the Percentage Receivables Are of Total Sales in 41 Oil and General Supply Associations, 1953

| Percentage receivables are of total sales | Percentage net margins are of total sales | | | | | | | | Average of the class | |
|---|---|---------------|------------------------|----------|----------|----------|---------------|-------|----------------------|----------|
| | Loss | Less than 2.0 | 2.0-3.99 | 4.0-5.99 | 6.0-7.99 | 8.0-9.99 | 10.0 and more | Total | | |
| | | | number of associations | | | | | | | per cent |
| Less than 3.0 | | | 1 | 1 | 1 | | | 3 | 5.26 | |
| 3.0-5.9 | 1 | 3 | 2 | 3 | 3 | 1 | 1 | 14 | 4.97 | |
| 6.0-8.9 | | 1 | 4 | 4 | | 1 | 1 | 11 | 4.66 | |
| 9.0 and more | 1 | 1 | 4 | 3 | 2 | 1 | 1 | 13 | 4.58 | |
| Total | 2 | 5 | 11 | 11 | 6 | 3 | 3 | 41 | | |

Credit Policies

Effective credit control has to start with a good credit policy. Credit policy is a very inclusive term. Generally it includes the rules necessary to select successfully credit applicants, extend credit, and collect outstanding accounts. These rules which are established by each association are influenced by the financial position of the organization and the degree of competition it faces. An association faced with little competition will find it advantageous from

the cost standpoint to sell on a cash basis or to extend smaller amounts of credit for shorter terms than they otherwise would.

In view of the factors that affect credit policy each association must tailor its own policy. A cooperative effort between directors and management is necessary to achieve and carry out a credit policy that will result in effective credit control.



Fig. 4. Boards of directors should formulate sound credit policies.

CREDIT EXTENSION

This portion of credit policy is concerned with developing credit terms, and establishing the procedure for selecting from among the applicants for credit.

Credit Terms

A wide variety of credit terms was offered in these 87 cooperatives. Most frequently the period for which credit was granted was stated as 30, 60, or 90 days after the first of the following month. In 59 of the 87 associations credit was granted to patrons on credit terms that were tailored to the individual (table 37). Some of those associations using the "individual basis" specified a limit on the time period and others applied a dollar limit.

Selecting Credit Applicants

Credit sales made to carefully selected credit applicants are more likely to be profitable. In almost all the associa-

Table 37. Distribution of 87 Associations According to the Credit Periods Offered, 1953

| Credit period | Number of associations |
|------------------------|------------------------|
| 30 days | 17 |
| 60 days | 6 |
| 90 days | 5 |
| Individual basis | 59 |
| Total | 87 |

tions included in this study it was the manager's responsibility to approve credit applicants. A few associations had a credit committee to advise the manager. This advisory function was performed by the full board of directors in some cases. One-third of the oil associations allowed bulk salesmen to extend credit within set limits.

Credit applicants were interviewed in 35 of the associations before credit was extended (table 38). Other methods employed to select credit applicants included an investigation of the individual's past performance in his



Fig. 5. Driver salesmen often explain credit policies to patrons.

use of retail and bank credit. Some associations reviewed the mortgaged financial obligations the applicant had. These are found in the county recorder's office.

There were 18 associations that did not make any attempt to screen credit applicants before granting credit.

Information concerning the credit applicant should be carefully checked before any large credit purchase is allowed. This can be done by an employee of the association or by local commercial credit investigators. Only three associations employed full time credit managers and all three of these associations also used commercial credit services. Fifty-six of the 87 associations used some type of commercial credit

Table 38. Distribution of 87 Associations According to the Most Frequently Used Methods of Screening Applicants, 1953

| Methods | Number of associations |
|--|------------------------|
| Interview applicant | 35 |
| Credit bureau investigation | 36 |
| Bank reference (used alone) | 29 |
| Other sources (county recorder, individual references, etc.) | 19 |
| None | 18 |
| Total | 137* |

* Several used more than one method.

service. Several of these 56 associations purchased only a bulletin service which included mainly the information from the county recorder's office.

Thirty-six of the associations in the study had memberships in local credit bureaus which offered complete individual credit reports. These credit reports included the following information on a credit applicant: (1) credit ratings by other merchants that had dealt with the applicant, (2) records of present financial obligations, (3) information on the size of the farm operation and estimated income, and (4) personal information gathered from newspapers, business associates, etc.

Through the cooperation of merchants in a trade area a credit bureau is established as a clearing house for credit information. Merchants report on their experiences with each of their accounts, and this along with such information as indebtedness and income is filed with the credit bureau. In a recent survey of credit bureaus it was found that local credit bureaus have credit files on most individuals doing credit business in their particular trade area. There are 48 credit bureaus in Minnesota. They are centrally located in all the major trade areas in the state. Credit bureaus cooperate with each other in order to make credit reports available on individuals that move from one trade area to another.

Local credit bureaus furnish credit investigating services at a relatively low cost. Table 39 shows the annual costs of credit bureau service found in the study.

Table 39. Distribution of 57 Associations According to the Annual Cost of Their Credit Bureau Service, 1953

| Annual cost | Number of associations |
|-------------------------|------------------------|
| Less than \$25.00 | 21 |
| \$25.00-34.99 | 14 |
| 35.00-44.99 | 13 |
| More than \$45.00 | 9 |
| Total | 57* |

* One association had membership in two bureaus.

Responsibility for Receivable Losses

Managers in 11 of these associations and a truck driver in one association were held financially responsible for losses on bad accounts. The extent of financial responsibility ranged from 10 to 100 per cent of the losses. Some associations made flat charges of the bad debt losses against salaries or commissions. Others withheld a percentage of salaries or commissions to build up a reserve to cover future bad debt losses. The reserves were maintained at a level of 33 to 100 per cent of the outstanding receivables. When accounts were considered uncollectible, they were charged off to the employee's reserve and the accounts became the property of the employee.

CREDIT COLLECTION

Thirty-three of the managers interviewed indicated that they made a conscientious effort to discuss the terms of credit with the patron at the time of sale. Several of them indicated that credit which had been granted with a thorough understanding of credit terms was the easiest to collect.

Collection Aids

All of the associations in the study sent statements of account to patrons as a collection device. The interval of time that elapsed between statements varied over a wide range. Monthly statements were used in most associations, while in some, statements were used only as an annual reminder. Statements should be used as a frequent verification and reminder of the patron's obligation. A system of monthly statements is considered most satisfactory except in cases where agreed terms are for longer periods.



Fig. 6. Adequate records must be kept of all credit sales.

Collection letters were used by 48 of the 87 associations. There was a wide range in the time interval that elapsed before collection letters were used (table 40). Managers mentioned that the cost of sending collection letters was high in terms of both time and materials. However, many indicated that collection letters produced gratifying results on the slower accounts.

Collecting accounts by making personal calls was reported to be quite successful. Sixty-five of the 87 associations in the study used this method for collections. Most of them stated that personal calls were more successful than collection letters on the old accounts. They gave the following as reasons for favoring personal calls: (1) It was possible to discuss the reason

for failure to pay. (2) Future payment arrangements could be made. (3) It was possible for the visitor to review the patron's financial position and estimate the time when future income could be applied toward payment of the account.

Table 40. Distribution of 48 Associations According to the Time Collection Letters Were Sent, 1953

| Time before collection letters are sent | Number of associations |
|---|------------------------|
| Account more than 60 days old | 6 |
| Account more than 90 days old | 5 |
| Account more than 4 months old | 2 |
| Account more than 6 months old | 5 |
| End of fiscal year | 5 |
| Individual basis | 25 |
| | — |
| Total | 48 |

The 22 managers who did not make personal calls indicated that they lacked the time or help needed. A few suggested the cost of such visits was prohibitive.

Specialized collection agencies were used by 55 of the 87 associations in making collections on difficult accounts. Most of the collection services used were furnished by local agencies. Some associations employed out-of-area and even out-of-state collectors.

The age of accounts turned over to collectors by these associations ranged from 60 days to 2 years. Collectors also played an important role in collecting accounts from people that had moved out of the area.

Professional collection services are expensive. Forty-seven associations re-

ported that collection fees paid to collection agencies varied from 25 to 50 per cent of the collected accounts. The range depended upon the size of the account, location of the debtor, and the necessity for legal action.

A few managers indicated that collections were not a problem because losses on accounts could be recovered by withholding patronage refunds. It was also pointed out that patrons have stock and other equities from which bad accounts may be recovered. This is not a desirable method as it represents a misunderstanding of the purpose of the patron's equity. The patron should have a better understanding of the need for his investment in the cooperative and also a better understanding of the use of the credit privilege.

Effect of Credit on Sales Volume

Managers indicated that the sales volume of some commodities would be affected more than others if account receivable credit were discontinued. Table 41 shows that bulk gasoline, feed, and fertilizer sales would suffer most from discontinuing credit according to the opinions of these managers.

Competition is a factor that affects the amount and terms of credit granted. Where a cooperative was in close competition with other business organizations handling similar products, it was generally necessary for the association to grant credit on terms similar to those of its competitors in order to maintain sales volume. Where competition is not a serious factor, less credit may be granted and credit costs reduced.

Table 41. Commodities Most in Need of Credit Selling to Maintain Volume in 87 Farm Supply Associations, 1953*

| Commodity | Number of associations handling | Number specifying need for credit sales† |
|------------------------------|---------------------------------|--|
| Bulk gasoline | 36 | 27 |
| Feed | 56 | 27 |
| Fertilizers | 39 | 10 |
| Seed | 52 | 3 |
| Machinery and appliances | 27 | 3 |
| Need credit on all items ... | 87 | 22 |
| | — | — |
| Total ..... | ..... | 92‡ |

* Based on managers' opinions.

† These estimates are concerned only with accounts receivable. Notes receivable, contracts, and chattel mortgages are not considered.

‡ Some associations designated more than one commodity.

Summary and Conclusions

Credit problems of farm supply associations in Minnesota have increased at a rapid rate in recent years. Credit sales averaged approximately 50 per cent of all supply sales for the 87 associations included in this study in 1953. In the oil associations, credit sales increased from 52.8 per cent of all sales in 1950 to 58.5 per cent of the total in 1953.

Between 1950 and 1953 accounts receivable increased 72, 49, and 34 per cent in grain, oil, and supply associations, respectively. In the corresponding period, sales of these organizations increased only 8 per cent.

The proportion of assets tied up in receivables increased from 7.4 to 9.5 per cent for grain associations, and 10.2 to 13.2 per cent for oil associations, while the general supply associations had a slight decrease over the four years.

Analysis of the receivables in 38 associations which aged their accounts according to three classes—less than 30 days, 30 days to 1 year, and more than 1 year—showed that an average of 9.3 per cent of their accounts were more than 1 year old. The accounts 1 year and older in oil associations averaged 11 per cent of their total receivables. A large volume of over-age receivables presents a danger signal since so many of these accounts prove to be uncollectible.

Another indicator of the rising credit problem among these cooperatives was the increase that has taken place in the days' sales outstanding in receivables. This measure increased from 15 days in 1950 for the oil associations to 20.5 days in 1953. It is a desirable goal to keep days' sales in receivables below 15 days.

Days' credit sales in receivables is a valuable measure because it includes

only the credit portion of sales which is the source of the problem. The magnitude of this ratio may be compared directly with the credit terms. When the ratio is less than the number of days granted in credit terms, the credit program is effective. In 1950, 24 of the 87 associations had less than 30 days' credit sales in receivables. By 1953 the number of associations with less than 30 days' credit sales declined to 14.

Many of these cooperatives failed to make adequate bad debt provisions to protect themselves from losses on uncollectible accounts. Only 33 of the 87 associations provided for bad debts by setting up reserves for this purpose. Fifty-seven associations wrote off uncollectible accounts in at least one of the four years. Fourteen associations did not provide a reserve for bad debts or make a write-off during the period.

Credit costs amounted to an average of \$1.95 per \$100 of credit sales. Total credit costs averaged 6.4 per cent of operating expense in the grain associations, 7.8 per cent in the oil, and 8.9 per cent in the general supply cooperatives. Credit costs could easily increase in view of the unusually large volume of receivables held by these cooperatives at this time.

It was found that associations with relatively large amounts of receivables tended to have a relatively poor working capital position. Associations with less than 20 days' credit sales in receivables had only 26 per cent of their working capital tied up in receivables, while those with 120 days' credit sales in receivables had receivables equal to 149 per cent of working capital. The cooperatives with 20 days' credit sales in receivables had 8.1 per cent of their assets equaled by current debt. In contrast, the associations with 120 days' credit sales in receivables had 16.8 per

cent of their assets matched by current debt.

Many of the cooperatives included in this study did not make the patron aware of credit terms at the time of sale or discuss credit limitations with him. Credit applicants were screened on the basis of interviews, credit bureau reports, bankers' reports, and by reviewing the applicant's financial obligations. Thirty-six associations used the services of local credit bureaus.

There is an urgent need for improvement and enforcement of credit policies in many of these cooperatives. Directors and managers should make a combined effort to strengthen their entire credit program. Lax credit programs are endangering the financial position of many of these organizations. The large volume of receivables held by these associations threatens to increase costs because bad debt losses and collection expenses could rise rapidly. Rising costs would cause net margins to shrink still further than is the case

at present. Credit can be controlled and costs can be held down if credit granting is put on a sound basis.

An improved credit program should begin with a good credit policy developed by the board of directors in cooperation with the manager. Patrons should be fully informed of the new credit policy and of their privileges and responsibilities to the association under this policy. Adequate records should be kept in order to effect better credit control and to facilitate checking the effectiveness of the new policy.

Patrons should be assisted in obtaining their seasonal credit needs from specialized lending institutions such as banks, production credit associations, credit unions, and others. New credit applicants should be thoroughly investigated before large amounts of credit are extended. Diligent enforcement of credit policies by the manager under the supervision of the board of directors will assure a successful credit operation.

Suggestions for Improving Your Credit Program

- 1 **Develop a well planned credit policy.** The board of directors and manager should cooperate to develop a credit policy they think will work. The manager should report progress under the new policy to the board of directors at regular intervals.
- 2 **Explain the new credit policy.** A printed explanation of all phases of the new credit policy should be sent to all patrons. The policy should also be discussed whenever credit patrons are contacted.
- 3 **Select new credit applicants carefully.** Question the applicant thoroughly and record the information on an application form. Check the applicant's credit references. Use credit investigating services.
- 4 **Follow the credit situation closely.** Carefully watch changes in the total amount of credit granted. Watch terms agreed on by individual patrons. Follow the aging of all accounts closely.
- 5 **Enforce the collection program vigorously.** Send monthly statements. Make use of a good series of collection letters. Establish a time limit after which collection agencies are brought into action or legal action is taken.
- 6 **Develop adequate records.** Start an age analysis report of receivables. Be prepared to report to the board of directors each month on over-aged accounts. Develop a system to record credit terms agreed on with individual patrons.
- 7 **Treat all patrons fairly.** Do not allow a well planned credit program to become bogged down with exceptions to the rules.
- 8 **Encourage seasonal borrowing from credit institutions.** Aid patrons in obtaining their major production credit from institutions such as banks, production credit associations, and credit unions.