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ANALYSIS OF CREDIT EXTENDED BY MINNESOTA FARM SUPPLY ASSOCIATIONS, 1950-53

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One of the most difficult management problems which farm supply associations face is that of successfully extending merchandise credit to their patrons. In recent years this problem again has become rather acute as credit sales and the volume of outstanding receivables in these cooperatives have increased at a rapid rate. Many cooperative leaders view this trend with much concern since in the past it has often resulted in slow collections, in heavy credit losses and some difficult financing problems.

It was the purpose of this study to determine the extent, current trends, and relative severity of the credit problems of Minnesota farm supply associations at this time. Another objective of the study was to determine what provisions, if any, these cooperatives are making for losses on bad accounts. This study is exploratory and preliminary. It is to be followed by a more comprehensive study of different methods of handling credit, credit policies, and the effect of credit extension on the general financial position of various types of farm supply associations. While this study is limited in its scope it is believed that the results obtained will be of interest and value to cooperative managers at this time.

For purposes of this study the detailed audits of 50 farm supply associations were selected at random from the files of cooperative auditors located in the Twin Cities. These auditors serve associations in nearly all parts of the state. While the sample was not drawn on a statistically designed basis it is believed, nevertheless, that it is quite representative of credit conditions in this type of association in the state.

In terms of area distribution 10 of the associations were located in the northwestern quarter of the state, 10 in the northeastern quarter, 14 in the southwestern and 16 in the southeastern.

The associations selected handled a wide range of farm supplies but petroleum sales predominated in most of them. In 30 of the 50 associations over 80 per cent of the sales were of petroleum products, in 15 associations from 50 to 80 per cent, and in 5 less than half the sales were petroleum. Since about 200 of the farm supply associations in Minnesota are of the petroleum and production supply (including feed, seed, fertilizer, hardware, lumber, machinery) types[1/], this sample includes about 25 per cent of the total.

1/ See Minn. Station Bulletin 421, "Minnesota Farm Supply Associations" by T. W. Manning and E. Fred Koller, page 4.

The size of the associations in the sample measured in terms of annual sales varied as follows: 18 had annual sales under $150,000, 17 had sales in the $150,000 to $300,000 range, and 15 had sales of more than $300,000. The average sales for all 50 associations in the fiscal year ending 1952-53 were $254,925. The 1951-52 sales of the identical associations averaged $248,389 and their 1949-50 sales $236,693 2/.

Credit Sales

All of the associations included in this study sold a large proportion of their merchandise on a credit basis. When improperly handled, credit sales give rise to many problems some of which are considered in this study. Information on the division of the sales between cash and credit was available in only 37 of the audits used in this study.

In the 37 associations in which credit sale information was available total sales for 1952-53 averaged $242,270. Credit sales averaged $143,473, or 59.2 per cent of all sales. In a study including a sample of 85 petroleum associations in the state in 1940 it was found that credit sales at that time averaged 54.5 per cent of all sales 3/.

The proportion of credit sales varied widely from association to association. Some restricted these sales rather severely and some made them quite freely. In 11 associations less than 50 per cent of all sales were on a credit basis and in 10 associations credit sales exceeded 70 per cent of the total (table 1). These variations very probably are attributable to differences in credit extension policies and to differences in the economic conditions affecting farmers in various areas.

Table 1. Proportion of Credit Sales to Total Sales in 37 Minnesota Farm Supply Associations, 1952-53

Per cent of credit sales	Number of associations	Per cent of associations
Less than 30	2	5.4
30.0 - 49.9	9	24.3
50.0 - 69.9	16	43.3
70.0 - 89.9	9	24.3
90.0 and above	1	2.7
Total	37	100.0

2/ To simplify presentation in the remainder of this report the fiscal period 1952-53 will frequently be referred to as 1953, the 1951-52 period as 1952 and the 1949-50 period as 1950.

3/ See "Credit Practices and Credit Costs of Cooperative Oil Associations", Minn. Farm Business Notes, Aug. 1941, p. 1.

Analysis of credit sales by areas of the state showed the largest proportion were made in the Northwest quarter where 71 per cent of all sales were on a credit basis. In contrast credit sales in the Southeast area averaged only 48.1 per cent of sales. The Southwest and Northeast areas had credit sales of 69.6 and 62.6 per cent respectively. These data show that credit sales were at the highest level in the areas with the largest proportion of cash crops and at the lowest level in the dairy and more diversified farming area of the Southeast.

Analysis of credit sales according to differences in volume of business showed no significant relationship. No significant difference could be found between the credit sales of associations which handled mainly petroleum products and those which handled a large volume of other farm supplies.

Rising Volume of Receivables

An indication of the growing credit problem among farm supply associations in Minnesota is that in the period 1950 to 1953 gross account receivable increased by 57.4 per cent while sales increased only 7.8 per cent (figure 1).

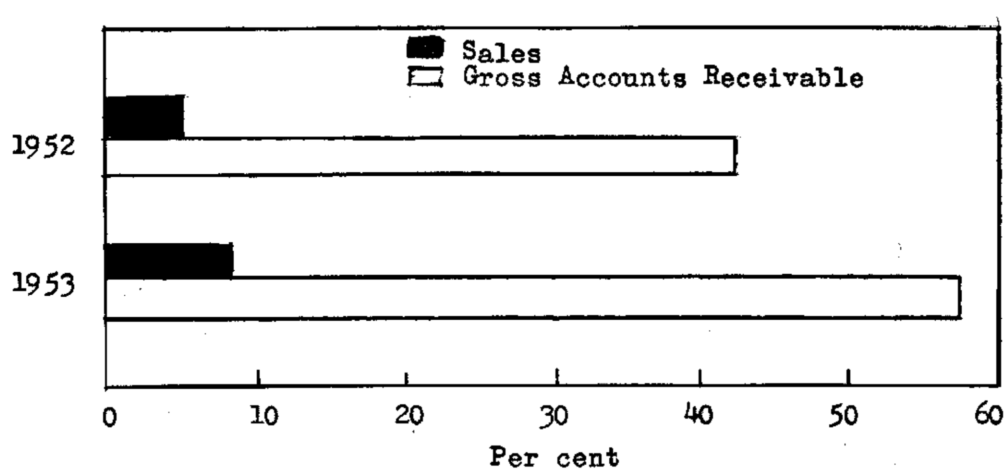

Figure 1. Percentage Increases in Gross Accounts Receivable and Sales in 1952 and 1953 Compared with 1950 in 50 Minnesota Farm Supply Associations

Gross accounts receivable in these 50 associations averaged $17,983 in 1953 as compared with $11,424 in the same associations in 1950 (table 2). The largest annual increases in receivables occurred between 1950 and 1952. The increase from 1952 to 1953 was somewhat slower as more associations recognized their rising credit problems and devised methods of counteracting them.

The increase in gross accounts receivable from 1950 to 1953 was largest among the smaller volume associations. Associations with annual sales under $150,000 showed an increase of 83.6 per cent in their receivables, while those with sales over $300,000 had an increase of only 46.4 per cent (table 2).

Table 2. Average Gross Accounts Receivable of 50 Minnesota Farm Supply Associations Grouped by Sales Volume, 1950 to 1953.

Sales volume (thousands)	1950	1952	1953	Per cent 1953 over 1950
		dollars		
Under $150	6,994	10,412	12,839	83.6
$150 - 300	9,726	14,177	15,183	56.1
Over $300	18,636	25,651	27,281	46.4
Average all groups	11,424	16,276	17,983	57.4

Larger associations tend to be more alert to credit dangers and tend to follow stricter credit policies.

Increases in receivables from 1950 to 1953 were largest in the Northwest area of the state which showed a 93 per cent increase. The increases in the other areas were as follows: Southwest 79.8 per cent, Northeast 50.5 per cent and Southeast 35.8 per cent.

Proportion of Assets in Receivables

Another aspect of the credit problem faced by these supply associations is that as receivables increase a larger and larger proportion of the assets are likely to be tied up in these receivables. Unless new funds are supplied a smaller proportion of the assets are available for other operations of the business. Likewise the ability of the association to meet its accounts payable, notes payable and other obligations may be impaired.

It will be observed in table 3 that in 1949-50 only 8 of the associations had 20 per cent or more of their total assets tied up in receivables. By the close of the 1952-53 fiscal year 17 of the associations had over 20 per cent of their assets so committed.

When receivables increase, the business actually is putting more of its funds into a lending operation. This is not a function of a farm supply association. Most of these associations are not well-prepared to handle credit business.

Table 3. Proportion Net Accounts Receivable 1/ are of Total Assets in 50 Minnesota Farm Supply Associations, 1950 to 1953

Per cent of total assets	1950	1952	1953
		Number of associations	
Less than 5.0	5	2	2
5.0 - 9.9	18	10	7
10.0 - 14.9	10	11	15
15.0 - 19.9	9	11	9
20.0 - 24.9	5	8	6
25.0 - 29.9	2	3	5
30.0 and over	1	5	6
Total	50	50	50

1/ Net accounts receivable equals gross accounts receivable less reserve for bad debts.

Aging of Accounts Receivable

If account receivable credit is granted it should be limited to a short period of time and the accounts should not be allowed to become "overdue". Various credit studies have shown that the longer the period for which an account is outstanding the greater is the probability of loss.

Thirty-six of the 50 associations had a record of the age of their accounts in each of the three years included in the analysis. Aging of accounts involves classifying the accounts into various groups according to the length of time they have been outstanding. This procedure is very desirable in that it enables the manager to determine more definitely which accounts are slipping into the problem category and, therefore, he may give them closer attention.

Aging of the outstanding accounts of these 36 associations showed that at the close of the fiscal year only 33 per cent of the accounts fell in the "less than 30 days" or distinctly current classification (table 4). The largest proportion of the accounts, 56 per cent, fell in the "30 days to one year" class.

Table 4. Distribution of the Value of Accounts Receivable According to Age in 36 Minnesota Farm Supply Associations, 1950 to 1953

Age of account	1950	1952	1953
		per cent	
Less than 30 days	36	32	33
30 days - 1 year	59	59	56
Over 1 year	5	9	11
Total all groups	100.0	100.0	100.0

It is of particular interest that the proportion of the accounts which fell in the "over one year old" or distinct problem category increased from 5 per cent of the total in 1950 to 11 per cent in 1952-53 (figure 2). This is clearly an undesirable change and one which can result in serious financial trouble in the associations where it is allowed to continue.

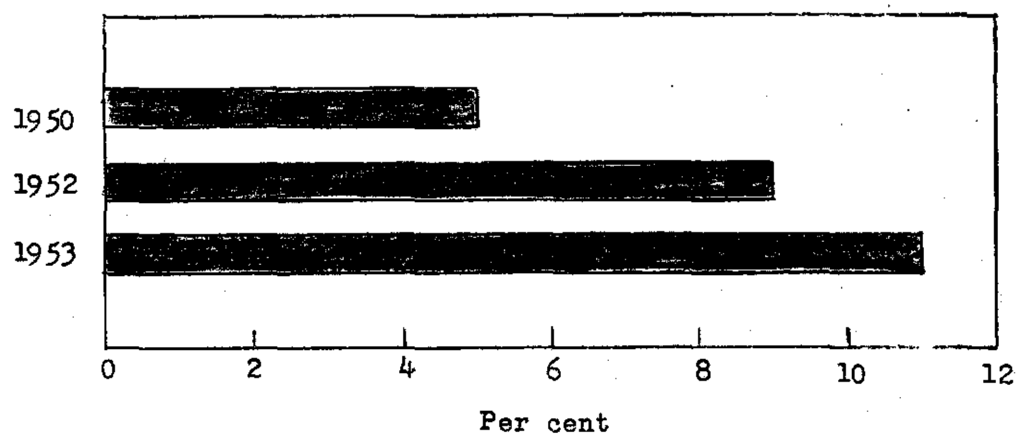

Figure 2. Proportion of Accounts Receivable Over One Year Old in 36 Minnesota Farm Supply Associations, 1950-53

Further analysis of the accounts by age classes showed that in 1950 only two of the associations had over 15 per cent of their accounts in the "over one year old" or problem category (table 5). By 1953 twelve of the associations, or one-third of the total, had over 15 per cent of their accounts in the oldest age class. This is another indication of the increasing seriousness of the receivable problem in these associations at this time.

Table 5. Proportion of Accounts Receivable Over One Year Old in 36 Minnesota Farm Supply Associations, 1950 to 1953

Per cent of accounts	1950	1952	1953
		Number of associations	
Less than 5.0	15	12	8
5.0 - 9.9	14	7	11
10.0 - 14.9	5	8	5
15.0 - 19.9	2	4	6
20.0 - 24.9	0	3	2
25.0 - 29.9	0	1	1
30 and over	0	1	3
Total	36	36	36

Days' Sales in Receivables

Another widely used method of determining the effectiveness of credit policies is to calculate the days of sales in receivables. This ratio is arrived at by dividing the receivables at the close of the fiscal period by the average daily sales. Average daily sales are total sales for the year divided by 300, which represents the approximate number of business days in a year. The larger the number of days' sales tied up in receivables the poorer the credit situation.

The days' sales in receivables in the 50 associations included in this study showed a very large increase from an average of 14.48 days in 1950 to 19.65 days in 1952 and 20.92 in 1953. The aim should be to keep days' sales in receivables in associations of this type below 15 days. The trend in recent years has been away from this desired goal.

In 1950 twenty-three, or nearly one-half, of the associations held their days' sales in receivables to less than 15 days (table 6). By 1953 only 12, or about one-fourth, held their accounts below this level. In 6 of the cooperatives, days' sales in receivables were 40 and over in 1953 which is a very slow rate of turnover.

Table 6. Distribution of Days' Sales in Receivables for 50 Minnesota Farm Supply Associations, 1950 to 1953

Days' sales in receivables	1950	1952	1953
		Number of associations	
Less than 10.0	13	3	2
10.0 - 14.9	10	9	10
15.0 - 19.9	12	8	8
20.0 - 24.9	9	9	8
25.0 - 29.9	2	9	8
30.0 - 34.9	2	6	5
35.0 - 39.9	0	3	3
40.0 and over	2	3	6
Total	50	50	50

Slow collections were a much more serious problem among the smaller associations. In 1950 only 16.7 per cent of the associations with annual sales under $150,000 had average days' sales in receivables of 30 days and over (table 7). By 1953 two-thirds of these smaller organizations had days' sales in the 30 days and over class. In contrast none of the largest cooperatives with annual sales exceeding $300,000 had days' sales in receivables of 30 or more in either 1950 or 1953. However, it may be observed in examining table 7 that a larger proportion of the associations in all size groups had a slower turnover of their receivables in 1952-53.

Provision for Losses on Accounts

Extension of credit almost inevitably involves some loss from uncollectible items. Provision for covering such losses should be made.

Table 7. Days' Sales in Receivables of 50 Minnesota Farm Supply Associations, Grouped by Sales Volume, 1950 and 1953

Days' sales in receivables	1950			1953		
	Volume in thousands of dollars					
	Under 150	150-300	Over 300	Under 150	150-300	Over 300
	per cent of associations					
Under 15	16.7	47.2	80.0	0	29.5	46.7
15.0 - 29.9	66.6	47.0	20.0	33.3	58.9	53.3
30 and over	16.7	5.8	0	66.7	11.6	0
Total	100.0	100.0	100.0	100.0	100.0	100.0

There are two widely used methods of taking care of these losses. Some organizations wait until an account is determined to be uncollectible and then charge it as an expense of operation in the year this occurs. Under this system the expense charges for losses on bad debts may fluctuate quite widely from year to year.

The largest proportion of business firms provide for losses on accounts in advance of their occurrence by setting up a reserve for bad debts or doubtful accounts and supplementing this reserve each year. The amount set aside in the reserve each year and charged to expense at that time is usually estimated on the basis of account receivable losses experienced in the past. The estimate may be based on (1) a percentage of the outstanding receivables, or (2) a percentage of the total sales, or (3) a percentage of the credit sales, or still other bases. Some organizations put a flat amount of $200, $400 or other amount into the reserve each year depending on needs determined by past experience.

An advantage of the reserve method is that the expense charges for losses on accounts fluctuate less from year to year. In consequence net margins will also fluctuate less. Also, by providing reserves for bad debts overstatement of the value of receivables on the balance sheet may be avoided.

The annual expense charge in providing for a reserve for bad debts is a deductible item for income tax purposes. However, caution should be exercised in holding the reserve to an amount considered reasonable by the Bureau of Internal Revenue. Excessive provisions for bad debts reserves may be disallowed by the Bureau.

While provision of a reserve for bad debts is generally considered to be desirable 16 out of the 50 supply associations included in this study, about one-third, had no reserve of this kind. In view of the sharp rise in credit sales and accounts receivable in recent years these associations are more vulnerable to financial losses in the period ahead.

In a relatively large number of additional organizations the reserve for bad debts was very small and appeared inadequate under present conditions. In 10 associations the reserve was less than four per cent of the gross accounts receivable in 1952-53 (table 8). In 1949-50 the reserves of only five of the associations were this small. Examination of table 7 shows that the size of bad debt reserves relative to the receivables was generally smaller in 1952-53 than in the earlier periods.

It is of interest that provisions for reserves for bad debts varied significantly by areas of the state. In the northeastern quarter of the state all of the supply associations included in the sample had set up a reserve of this kind. In contrast in the southwestern quarter only 46 per cent of the associations provided such a reserve. The proportion of associations with bad debt reserves in the northwestern and southeastern areas were 80 and 69 per cent respectively.

Table 8. Proportion Bad Debts Reserves Are of Accounts Receivable in 50 Minnesota Supply Associations, 1950 to 1953

Per cent reserve is of gross accounts receivable	1950	1952	1953
None	17	17	16
0 - 1.99	1	1	2
2.0 -3.99	4	6	8
4.0 -5.99	6	6	6
6.0 -7.99	6	7	8
8.0 -9.99	5	4	3
10.0-17.99	5	5	4
18.0 and over	6	4	3
Total	50	50	50

Net Margins

The net margins of these associations have declined in recent years from an average of $12,788 per association in 1949-50 to $9,930 in 1952-53. This was 5.4 and 3.9 per cent of sales in the respective years. The decrease in net margins reflects a situation of rising costs and somewhat smaller gross margins affecting many of these associations in recent years. Facing these tighter operating conditions these associations can ill afford to absorb potentially larger credit losses.

Indicative of the decline in net margins, in 1950 there were 28 associations with net equal to six per cent or more of their sales, but in 1952 only seven associations had a net of this size (table 9). In 1952-53 thirteen of these cooperatives had a net of six per cent and over.

Table 9. Per cent that Net Margins are of Sales in 50 Minnesota Farm Supply Associations, 1950 to 1953

Net margins as per cent of sales	1950	1952	1953
	number of associations		
Loss	3	2	1
Less than 2.0	3	10	13
2.0 - 3.9	8	19	10
4.0 - 5.9	8	12	13
6.0 - 7.9	12	3	8
8.0 - 9.9	13	2	2
10.0 and over	3	2	3
Total	50	50	50

Summary and Conclusions

This study shows that the accounts receivable credit problems of farm supply associations in Minnesota have increased at a rapid rate in recent years. Many cooperative leaders view these trends with concern since in the past an excessive volume of credit on the books often has resulted in financial embarrassment for these organizations.

In the period 1950 to 1953 the accounts receivable of the 50 supply cooperatives included in this study increased by 57.4 per cent while their total sales increased only 7.8 per cent. The receivables of the smaller associations with annual sales under $150,000 increased the most from 1950 to 1953 rising by 83.6 per cent while the receivables of associations with sales over $300,000 increased only 46.4 per cent. The larger organizations followed stricter credit policies and effected a better control of their receivables.

Analysis of the accounts receivable by age groups showed that the proportion which fell in the "one year and over", or distinct problem, category increased from 5 per cent of the total in 1950 to 11 per cent in 1952-53. This increasing proportion of over-age accounts presents a danger signal and demands special attention in the associations in which it occurs.

Another indication of the rising credit problem among these supply associations is that the days' sales outstanding in receivables increased from an average of 14.48 days in 1950 to 20.92 days in 1953. It is a desirable goal to keep days' sales in receivables of associations of this type below 15 days.

In view of the growing gravity of the credit problem, many of these associations have not made adequate provisions to protect themselves against losses from uncollectible accounts. In 16 out of the 50 associations included in the study no reserve for bad debts had been set up. In another 10 of the associations the reserves for bad debts were very small amounting to less than four per cent of the outstanding accounts.

It appears clear from this analysis that there is need for improvement in the credit policies and controls of many of these associations at this time. In planning an improved credit policy the following suggestions may be of value. At the outset patrons should receive a definite written statement of the policies to be followed in granting credit and in making collections. Likewise, patrons should be fully informed as to the needs and the advantages of a stricter credit policy so they may understand the situation and lend their support. The patrons, as well as the board of directors, should understand that it is not one of the functions of the supply association to take care of the farmers' seasonal or other credit needs. Patrons should be advised and assisted in obtaining the credit they need from specialized credit institutions such as banks, production credit associations, and credit unions. The accounting procedures of the associations should be improved and credit controls established so that the status of all outstanding credit may be checked at least at monthly intervals. A good credit policy requires close supervision by the management. The board of directors must assume the responsibility of seeing that the manager and employees follow up the policies which have been adopted. To this end the manager should be required to make a full report on credit conditions at all regular monthly meetings of the directors.