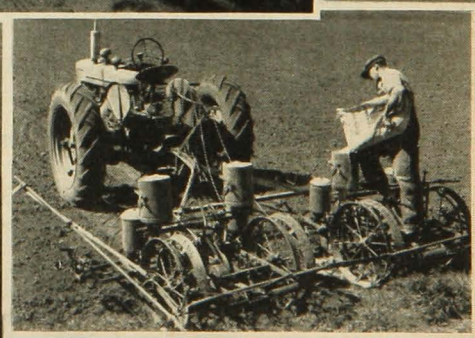
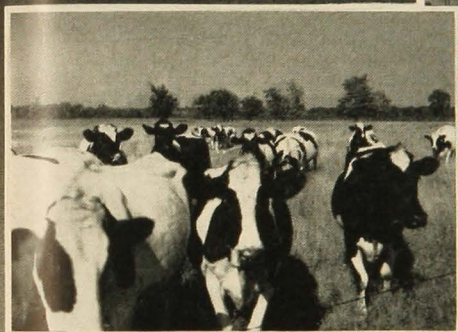


Loans OF PRODUCTION CREDIT ASSOCIATIONS to Minnesota Farmers



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Loans OF PRODUCTION CREDIT ASSOCIATIONS *To Minnesota Farmers*

Sherwood O. Berg, E. Fred Koller, and O. B. Jesness¹

THE AMOUNT OF CAPITAL required to operate a farm has increased greatly in the last half century. This has been especially true in recent years with rapid and far-reaching changes in technology and mechanization. Farmers today have large investments in power-driven machinery, improved livestock, and other equipment. Seeds, feeds, sprays, and fertilizers require additional operating capital. While these improvements increase returns, the outlays they involve often have to be made long before returns are realized.

Many farmers need more financial resources for operating their farms than they own. The role of farm production credit is to supply this need. Farmers in need of production credit are concerned with the amounts, terms, and costs of such credit available to them. Lenders are concerned with making sound loans and fitting them to the production requirements and repayment procedures peculiar to agriculture.

The Development of Production Credit Associations

The sharp break in prices in the early 1920's focused attention on the need of farmers for production credit for longer periods than the usual 60- or 90-day commercial loans. The Agricultural Credit Act of 1923 was intended to serve this need by providing for 12 intermediate credit banks organized to

discount agricultural loans for banks and other lenders. Partly as a result of the severe depression conditions of the early 1930's and the inadequacy of farm credit at that time, legislation creating the Farm Credit Administration was passed. The Farm Credit Act of 1933 included provisions for the establishment of a production credit corporation in each of the 12 farm credit districts and for the organization of production credit associations by farmers desiring to avail themselves of this source of loans. The 21 production credit associations (PCA's) included in this study are representative of these enterprises.

To help start the production credit associations the government provided the initial capital with the understanding that it would be retired as the farmer members acquired a sufficient amount of capital stock and the associations built up adequate reserves. The

¹ The authors acknowledge with appreciation the cooperation and assistance of Reynold P. Dahl of the Division of Agricultural Economics; George Susens, president of the Production Credit Corporation, St. Paul; secretaries of the production credit associations, and officers of the country banks surveyed.

associations are organized on a cooperative basis and are designed to become completely farmer-owned and farmer-controlled. Active membership is based on the purchase of stock at the rate of \$5 for each \$100 of money borrowed. This entitles a farmer to one vote only, regardless of the amount of stock owned. Annual dividends not to exceed 7 per cent may be paid on the stock. The associations may make patronage refunds of all returns over costs in proportion to the interest paid by borrowing members.

The principal purposes for which loans are made include the breeding, raising, and fattening of livestock and poultry; dairying; the growing, harvesting, and marketing of crops; the purchase and repair of farm machinery, refinancing short-term debts, and supplying other farm and family credit

needs. Terms of the loans vary with the operation financed and the repayment possibilities of the farm business.

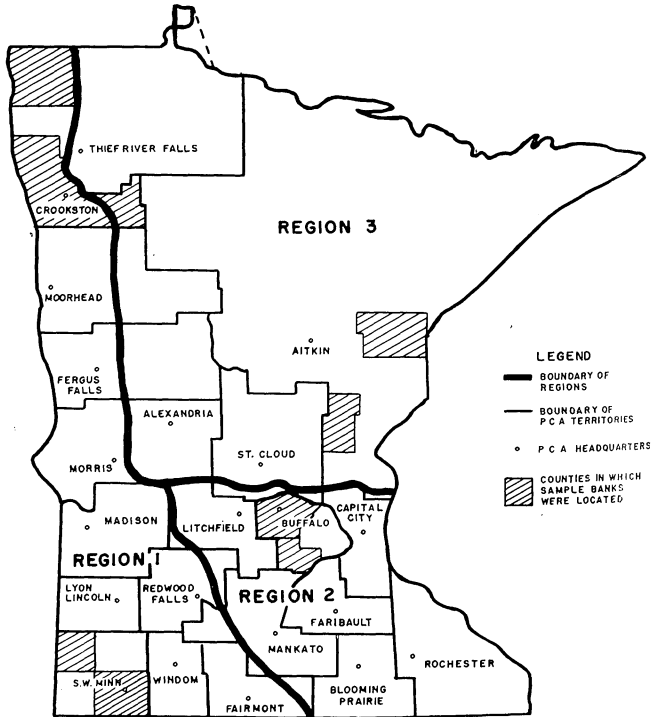
The 21 production credit associations in Minnesota loaned approximately 28.9 million dollars to 8,100 farmer members during 1950. The loans outstanding on January 1, 1951, totaled more than 13.5 million dollars.

The PCA's obtain their loan funds by endorsing and rediscounting their farmer borrowers' notes at the Federal Intermediate Credit Bank of the Farm Credit District in which they are located. The Federal Intermediate Credit Banks, in turn, obtain funds by selling their debentures in the investment market.

Purposes and Scope of Study

This bulletin is a report of a study of the operations of production credit

FIG. 1. Regions used in this study and the locations of PCA's and banks included are shown above. (The relatively small number of associations made it advisable to divide the state into three regions rather than the nine type-of-farming areas generally used.)



associations in Minnesota. The purpose of this study was to find out how the production credit associations have met the short-term agricultural production credit needs of Minnesota farmers. An analysis was made of a sample of PCA loans to determine their characteristics, adjustment to farmer needs, and liquidity. A similar analysis of a sample of commercial bank loans provided the base for ascertaining the nature and characteristics of lending policies and practices of these credit agencies (figure 1). Particular attention was given to types and amounts of loans; the effects of terms, methods of disbursement, and repayment on the ease of carrying loans; the security or collateral requirements; rapidity of liquidation; and to differences among regions in the state.

Representatives of the Division of Agricultural Economics of the University of Minnesota visited 21 PCA's in the state during 1949 to obtain in-

formation regarding their loans. A 10 per cent sample was randomly selected of all members who had borrowed from the association one or more times during the previous year. Information was sought not only on types of disbursement, amounts, purposes, terms, security requirements, and the like, but also on the disposition of each loan. In addition to the foregoing information, the farmer-borrowers' assets, liabilities, and net worth positions, their income and expense relationships and chattel commitments were recorded when such data were available.

A large share of the material used in the analysis was obtained by interviews with PCA secretary-treasurers and other officials of these associations. This information was supplemented by credit records at the Federal Intermediate Credit Bank, St. Paul, and by accounting and statistical reports made quarterly and annually to the Production Credit Corporation, St. Paul.

Characteristics of PCA Borrowers

THE SIZE of the farm business, the tenure status of the operator, the major type-of-farm enterprise, and the financial position of the operator are some of the major characteristics of borrowers and their business which affect the terms, arrangements, and cost of PCA loans.

Most Borrowers Operate 140- to 260-Acre Farms

There was a considerable range in the total acres operated by the 685 PCA borrowers in the sample. About one-half of the farms were from 140 to 259 acres in size. Twenty-three per cent of the farms were smaller than 140 acres; 28 per cent were 260 acres or larger (table 1).

Size of farm varied among regions in the state. In Region I, which com-

prises roughly the western part of the state, 10 per cent of the farms were under 140 acres in size. In Region II, in the southeastern part of Minnesota, more than one-third of the farms were less than 140 acres. Less than one-fourth of the farms were under 140 acres in Region III.

Tenure Status Varied by Regions

One-half of the PCA borrowers in this study were owners, one-fourth

Table 1. Size of Farm by Regions, 685 Minnesota PCA Loans, 1948

Acres operated	All assns.		Region I		Region II		Region III	
	No. of borrowers	Per cent	No. of borrowers	Per cent	No. of borrowers	Per cent	No. of borrowers	Per cent
0-139	158	22.7	22	9.9	80	35.9	56	23.3
140-259	342	49.2	113	50.9	107	48.0	122	50.8
260-499	157	22.6	65	29.3	29	13.0	53	22.1
500 and over	38	5.5	22	9.9	7	3.1	9	3.8
Totals	685	100.0	222	100.0	223	100.0	240	100.0

Table 2. Tenure Status of PCA Borrowers by Regions, Minnesota, 1948

Tenure	All assns.		Region I		Region II		Region III	
	No. of borrowers	Per cent	No. of borrowers	Per cent	No. of borrowers	Per cent	No. of borrowers	Per cent
Owner	342	50.0	90	40.5	108	48.4	144	60.0
Part owner	168	24.5	46	20.7	61	27.4	61	25.4
Tenant	175	25.5	86	38.8	54	24.2	35	14.6
Totals	685	100.0	222	100.0	223	100.0	240	100.0

were part owners, and another fourth were tenants (table 2). The percentage of full owners and tenants varied considerably among regions. Nearly two-fifths of the borrowers in Region I were tenants as compared with only one-seventh in Region III. These findings agree with the observations that tenancy in the state tends to be highest where land values are highest.

Diversified Farming Most Common

The majority of the borrowers represented in the sample were engaged in general farming (table 3). Farms for which the value of products from

any one source of income (that is, dairy, livestock, poultry, or small grain) did not exceed 50 per cent of the total value of all farm products sold were classified as *general* farms. The feeding of livestock was the major enterprise on approximately one-fourth of the farms and dairying on about one-fifth. Small grain farming and the raising of poultry were of minor importance and constituted the major enterprise on only 9 and 2 per cent, respectively, of the farms.

Aside from the general farms, feeding of market livestock and raising of small grain were the principal enterprises of the farmers located in the

Table 3. Distribution of Borrowers by Major Type of Farm Enterprise, 685 Minnesota PCA Loans, 1948

Major type of farm enterprise	All assns.		Region I		Region II		Region III	
	No. of borrowers	Per cent	No. of borrowers	Per cent	No. of borrowers	Per cent	No. of borrowers	Per cent
Dairy	121	17.7	5	2.2	58	26.0	58	24.2
Livestock	160	23.4	67	30.2	46	20.6	47	19.6
Poultry	16	2.3	4	1.8	8	3.6	4	1.7
Small grain	60	8.7	37	16.7	11	4.9	12	5.0
General	328	47.9	109	49.1	100	44.9	119	49.5
Totals	685	100.0	222	100.0	223	100.0	240	100.0

**Table 4. Statement of Financial Condition. Averages of Balance Sheet Items by Regions,
685 Minnesota PCA Borrowers, 1948**

Item	State		Region I		Region II		Region III	
	Average (dollars)	Per cent	Average (dollars)	Per cent	Average (dollars)	Per cent	Average (dollars)	Per cent
Current assets*	10,612	52.1	12,650	52.9	11,311	50.1	8,078	53.7
Fixed assets	9,763	47.9	11,277	47.1	11,260	49.9	6,972	46.3
Total assets	20,375	100.0	23,927	100.0	22,571	100.0	15,050	100.0
PCA debt	785	3.9	840	3.4	923	4.1	608	4.0
Other current liabilities	588	2.9	709	3.0	598	2.7	466	3.1
Total current liabilities	1,373	6.8	1,549	6.4	1,521	6.8	1,074	7.1
Fixed liabilities	2,577	12.6	2,396	10.0	3,664	16.2	1,745	11.6
Total liabilities	3,950	19.4	3,945	16.4	5,185	23.0	2,819	18.7
Net worth	16,425	80.6	19,982	83.6	17,386	77.0	12,231	81.3
Total liabilities and net worth	20,375	100.0	23,927	100.0	22,571	100.0	15,050	100.0
Number of borrowers	685		222		223		240	

* As used here current assets include all farm assets except land and improvements. In other words, the current assets include all the non-real estate assets such as livestock, machinery, motor vehicles, grain, and feed on hand, etc.

western part of the state. Dairying constituted the major enterprise on one-fourth and feeding livestock on one-fifth of the farms in both Region II and Region III. The high percentage of general farms in each region is indicative of the diversification found on many farms.

Financial Position of Borrowers Strong

The average farm operation had \$20,375 in total assets, of which \$16,425 represented owner equity and \$3,950 was debt (table 4). One-third of the latter amount was short-term obligations. The borrowers had a very high owner equity in their business, averaging around 80 per cent.

The average total assets ranged from \$23,927 in Region I to \$15,050 in Region III. While total assets varied among regions, the proportion of money that farmers had tied up in current assets compared with real estate showed very little variation. In all regions, the value

of the current, or non-real estate assets was slightly over 50 per cent of all farm assets. This emphasizes the relative importance of non-real estate capital in present-day farm organization. In pre-war years, farm record studies at the University of Minnesota showed a ratio of one to three between current and fixed assets. Since 1940, this ratio has been narrowed substantially. Similar studies in 1949 showed a ratio of one to 1.3.

This study revealed three distinct seasonal "peak" periods of borrowing. The demand for new loans was greatest in March-April, June-July, and October. In Regions I and III, the greatest needs for credit were not in the spring but in October (figure 2). The large volume of credit extended in the fall of the year was no doubt a reflection of the importance of livestock in the state economy. Although some of the PCA's were in areas that had certain specialties, nevertheless, the operations of most borrowers were widely diversified. This diversity led

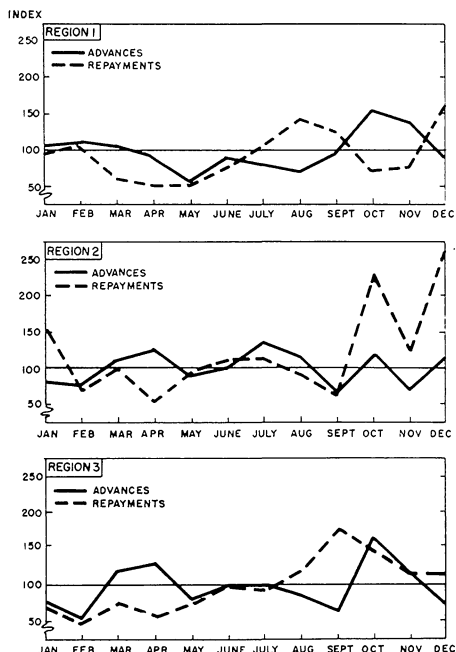


FIG. 2. Index of volume of new loans and repayment by regions, 21 PCA's, during 1948.

(Index: 100 = average of 12-month period.)

to a succession of credit needs and tended to distribute the demands for credit over the year.

Greatest Number of Loans Closed in Spring of Year

Most of the loan advances were made during the spring of the year (figure 3). The peak months of activity were in March and April in all regions of the state. However, this does not mean that most of the credit extended by the PCA's was used during those months. In fact, more farmers were extended credit in the spring than in the fall, but the total amount of credit advanced was greater in the fall than in the spring. This means that the average size of advances were sub-

stantially smaller for the users of credit early in the year. Many farmers were extended credit in the spring of the year for current production expenses. Usually such expenses are comparatively small. Fewer farmers were loaned funds in the fall, but their purposes, primarily the purchase of feeders, required far larger amounts per loan or advance.

Repayments Highest in Fall of Year

In general, the months of August through October were months in which farmers made their largest repayments. During this period farmers were moving much of their produce into the markets. The high percentage of repayments in August and September was the result of cash crop sales, sale of hogs, and long-fed cattle marketings. The sharp rise in December repayments resulted from the heavy marketing of spring hogs.

Operating Expenses, Machinery Purchases, and Renewals Important

For the state as a whole, about one-fifth of the total amount loaned was extended for each of the purposes of general operating expenses, machinery

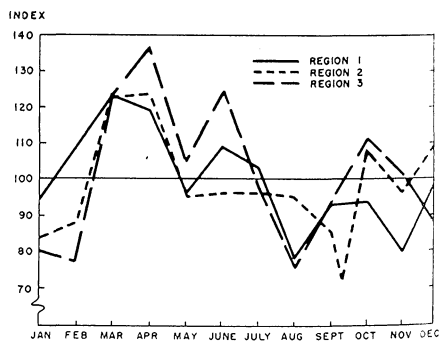


FIG. 3. Index of number of PCA loan disbursements by months and regions during 1948. (Index: 100 = average of 12 monthly totals.)

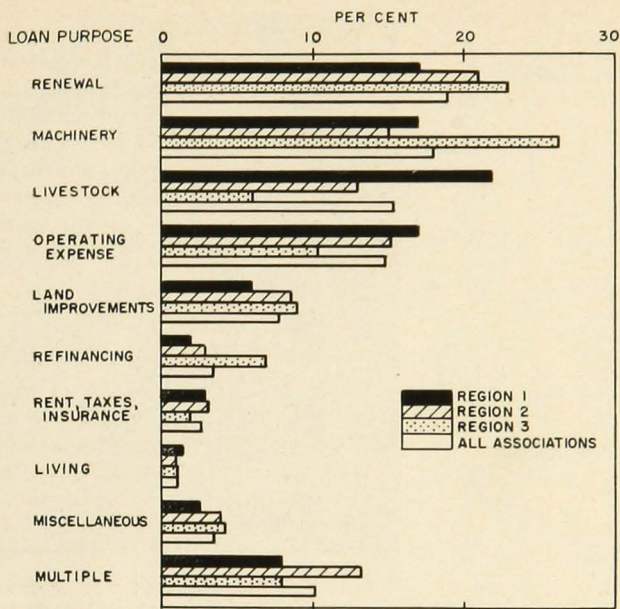


FIG. 4. Purpose of loans of PCA's during 1948 for the state and by regions based on 3,048 disbursements.

and equipment purchases, and renewals (figure 4). About one-sixth was for livestock purchases and farm improvements. The refinancing of old debts constituted about 4 per cent of total borrowings. Living expenses and miscellaneous expenses were relatively unimportant in the over-all loan volume of the PCA's. About one-tenth of the total disbursements were classed as multi-purpose loans. In such cases,

numerous loan purposes were lumped together and allocation could not be made to specific uses.

After the experience of shortage, obsolescence and wear and tear on farm equipment during the war years and with the appearance of improved equipment on the market, the demand for credit for the purposes of buying machinery and equipment to re-tool and modernize farms was great. The



FIG. 5. Machinery purchases accounted for nearly one-fifth of the total amount loaned.

PCA's and many other lending agencies during the period of this study, found their greatest single demand for new loans to be for the purchase of machinery and equipment.

The variation in the volume of renewals among regions was explained largely by (1) the differences in the proportion of credit extended for various purposes and (2) the price-cost relationship prevailing in the main types of farming of the region. The percentage of credit extended for renewal purposes ranged from 17 per cent in Region I to 24 per cent in Region III. A high proportion of renewals was common to Regions II and III where associations loaned relatively large amounts of money for land purchases and farm improvements, machinery and equipment purchases, and to refinance debts. On the other hand, the proportion of renewals tended to be low in Region I where loaning was primarily for operating expenses and livestock purchases.

Another factor accounting for the high volume of renewals and refinancing in Regions II and III was the less favorable price-cost relationships in dairy products in the latter part of 1948.

Livestock Purchases Resulted in Large Loans

The financing of livestock feeding operations resulted in large loans. The



FIG. 6. Livestock and feed accounted for 15 per cent of the amounts loaned.

price of feeder livestock at the time of this survey was high. Livestock and feed accounted for 15 per cent of all funds advanced on loans totaling less than \$4,000, 25 per cent of loans between \$4,000 and \$10,000, and 50 per cent on loans over \$10,000. The proportion of renewals was less among loans over \$10,000 than under this amount. The self-liquidating nature of the livestock feeding enterprise and the greater repayment ability of the larger-size business units resulted in a lower proportion of renewals.

Size of Loans

THE MAXIMUM SIZE of loan balances varied considerably. The average size of maximum loan balance for all farmers was \$2,450. The median size was \$1,574, meaning that 342 loans were larger than and 342 loans were smaller than this amount (table 5). Approximately 20 per cent of the accounts were for sums less than \$750; 20 per cent were for amounts greater than \$3,000.

**Table 5. Size of Maximum Loan Balance,
685 Minnesota PCA Borrowers, 1948-49**

Size of maximum loan balance	Borrowers	
	Number	Per cent
Under \$1,000	181	26.4
\$1,000-\$1,999	236	34.5
2,000- 2,999	127	18.5
3,000- 3,999	52	7.6
4,000- 9,999	69	10.1
10,000 and over	20	2.9
Total	685	100.0

Part Owners Had Largest Loans

Part owners, on the average, obtained larger loans than full owners or tenants (table 6). Part owners had larger farms or larger business units so had greater use for credit and their financial position made them eligible for larger loans. The ability of part owners to meet current debts was very high, for current assets (including all assets except land and improvements) were nine times as large as the short-term obligations. Tenants had the lowest ratio of current assets to current liabilities.

Owner equity, or net worth, plays an important role in the ability of farmers to borrow for productive purposes. If claims against the assets of the farm business are largely those of the operator, the ability of such business units to borrow are considerably greater than those in which outside or creditor

claimants have established substantial demands. In this study, tenants showed a higher relative equity than full owners or part owners.

Under present leasing arrangements and in view of recent farm prosperity, tenants may have accumulated considerable savings and may have made substantial investments in machinery and equipment. Under such conditions, many tenants have become relatively debt-free. They have added to their equipment and moved up their level of living, but have not been burdened with real estate obligations.

It does not necessarily follow that because tenants had a higher equity that they were regarded as better credit risks than owners or part owners. It already has been noted that tenants had less assets readily available to meet current obligations. Although credit institutions making production loans do not customarily use real estate as security, the ownership of real estate provides added protection in case of failure of payment from current income. This is particularly true if the real estate is unencumbered. If the scheduled repayments of a production loan prove excessive or if repayment ability slumps because of price or other contingencies, the existence of possibilities of shifting such loans from a short-term to a long-term basis, backed by real estate, improves a borrower's credit rating.

**Table 6. Size of Maximum Loan Balance, and Selected Financial Relationships by Tenure Status,
685 Minnesota PCA Borrowers, 1948-49**

Tenure status	No. of borrowers	Average size of maximum loan balance	Ratio of	
			Current assets to current liabilities*	Net worth to total assets
Full owner	342	\$2,388	7.6	per cent 78.5
Part owner	168	2,719	9.0	83.4
Tenant	175	2,312	6.6	84.5
Total	685	\$2,450	7.7	80.6

* Only the first figure of the ratio is given in each case. Thus, 7.6 means a ratio of 7.6 to 1, etc.

Poultry and Livestock Loans Large

Farmers specializing in turkey or other poultry had the largest maximum loan balances. Dairy farmers had the smallest loan balances (table 7). Although the average size of poultry loans was large, the aggregate volume of funds loaned to poultry producers was relatively small and the number of loans few. Poultry loans, particularly turkey loans, are attractive loans in that they are short-term, normally self-liquidating, and the funds are used to promote the growth of birds appreciating in value as they develop. However, the success of poultry enterprises is highly dependent upon the skill of management. As a result, loans usually are screened thoroughly to take on only those cases in which management is experienced and necessary facilities and equipment are available.

The high cost of feeders and feed was reflected in the large size of loans being made to farmers engaged in fattening livestock. The purchases of large quantities of machinery at inflated prices and higher operating costs tended to swell the size of loans on small-grain farms.

That loan balances on dairy farms did not average as large as on other types of farms does not necessarily mean that the former used less credit. Expenses on dairy farms are less seasonal in nature, and income more

evenly distributed throughout the year. The volume of indebtedness at any one point during the year is kept fairly low by frequent repayments. On other types of farms the indebtedness is more cumulative in nature, giving rise to larger maximum loan balances.

The highest aggregate ratio of current assets to current liabilities was found among poultry and grain farms. The economic well-being of the grain farmer arising out of increased war and post-war demands for cereals is reflected in the high per cent of equity (net worth to total assets) on such farms.

Size of Loan Increased with Size of Borrower's Net Worth

In general, the size of the maximum loan balance of the PCA members increased with an increase in size of net worth (table 8). Farmers with net worth up to \$5,000 held loans averaging \$1,295, while farmers with equities of more than \$50,000 had balances averaging \$10,550. It can be assumed that the farms with highest net worths had the largest volumes of business. It follows from the standpoint of size of business alone that large farms would employ larger amounts of credit in carrying out their production operations than small farms.

The current liquidity position was

Table 7. Size of Maximum Loan Balance and Selected Financial Relationships by Major Type of Farm Enterprise, 685 Minnesota PCA Borrowers, 1948-49

Major type of farm enterprise	No. of borrowers	Average size of maximum loan balance	Ratio of	
			Current assets to current liabilities	Net worth to total assets
Poultry	16	\$6,027	9.2	82.4
Livestock	160	3,640	7.1	81.0
Grain	60	2,712	9.0	85.0
General	328	1,906	8.2	79.2
Dairy	121	1,746	7.0	79.2
Total	685	\$2,450	7.7	80.6

Table 8. Size of Maximum Loan Balances and Selected Financial Relationships by Net Worth. 685 PCA Borrowers, 1948-49

Size of net worth	No. of borrowers	Average size of maximum loan balance	Ratio of	
			Current assets to current liabilities	Net worth to total assets
Under \$5,000	80	\$1,295	4.6	67.2
\$5,000-\$ 9,999	194	1,647	6.7	76.2
10,000- 14,999	156	1,797	8.3	78.0
15,000- 24,999	156	2,797	7.7	78.9
25,000- 49,999	78	4,061	8.5	83.6
50,000 and over	21	10,551	9.6	88.6
Total	685	\$2,450	7.7	80.6

poorest among farmers having smallest net worths. It was strongest among borrowers having large equities, although the relationship was not consistent for all equity groups. The proportion of operator claims against total assets (net worth to total assets) increased with an increase in size of equities in dollars.

It is often said that lending agencies tend to lend a relatively larger amount of money to operators with large net worth than small. PCA maximum loan

balances were found to be, on the average, a substantially higher proportion of net worth among borrowers having small net worth than large net worth. Among borrowers having average net worth of \$3,600, the average maximum loan balance was \$1,295, or 36 per cent of the net worth. However, among farmers who averaged \$34,600 and \$91,000 in equity, the maximum loan balances were only 11.7 per cent and 11.6 per cent respectively of net worth (figure 7).

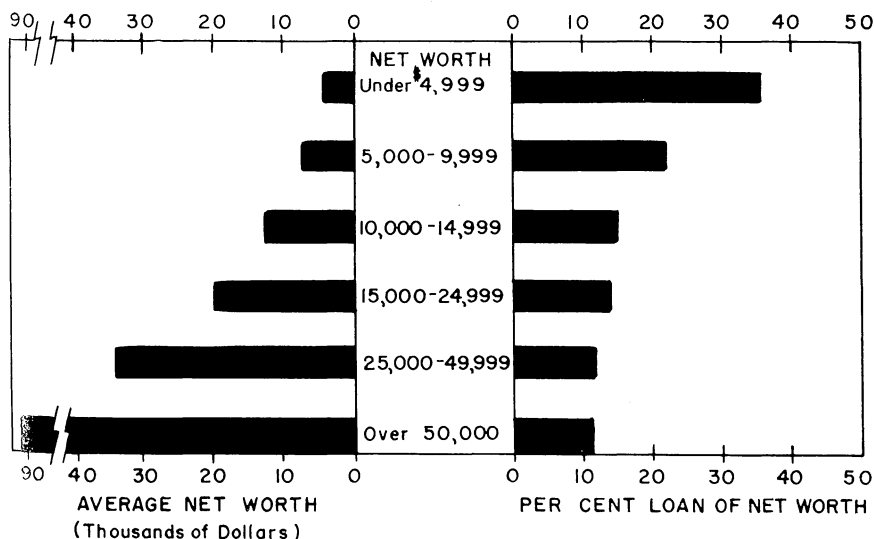


FIG. 7. Maximum loan balances in percentages of average net worth, 685 Minnesota PCA borrowers, 1948-49.

Table 9. Average Size of Maximum Loan Balance and Selected Financial Relationships by Size of Estimated Net Income, 434 Minnesota PCA Borrowers, 1948-49

Size of estimated net income	No. of borrowers	Average size of maximum loan balance	Ratio of	
			Current assets to current liabilities	Net worth to total assets
				per cent
Under \$1,000	59	\$1,236	8.2	83.6
\$1,000-\$1,999	130	1,565	6.1	76.2
2,000- 2,999	104	2,433	5.8	76.8
3,000- 3,999	66	2,978	6.2	76.6
4,000- 4,999	29	3,286	5.6	73.4
5,000 and over	46	5,464	5.1	73.6
Total	434	\$2,471	5.9	76.2

Loans Large with Respect to Estimated Income Among Small-Income Farmers

In the final analysis, the returns from a farm business in relation to fixed and operating costs determine its success or failure. It is this relationship also, of course, that determines the success or failure in the repayment of any borrowed funds used for operating expenses or capital investment purposes. The ability which a farm business has in repaying a loan is termed its *repayment capacity*. Repayment capacity usually is expressed in terms of net income. It is the purpose here to explore how estimated net income is related to loan size.

Information regarding expected income, expenses, and funds for debt retirement was available for 434 of the 685 accounts. The size of maximum loan balances increased as size of estimated net income increased (table 9). Farmers with an annual estimated net income of less than \$1,000 had loan balances averaging \$1,236, while farmers with incomes of more than \$5,000 had balances averaging \$5,464.

The ratio of current assets to current liabilities and that of net worth to total assets declined as size of estimated net income increased. However, the proportion which loan balances were of

the estimated net income was far greater among low income groups than high (figure 8). Loan balances of those in the lowest income groups averaged nearly twice the amount of income available for debt retirement. In the highest income group they averaged only 60 per cent of the net income.

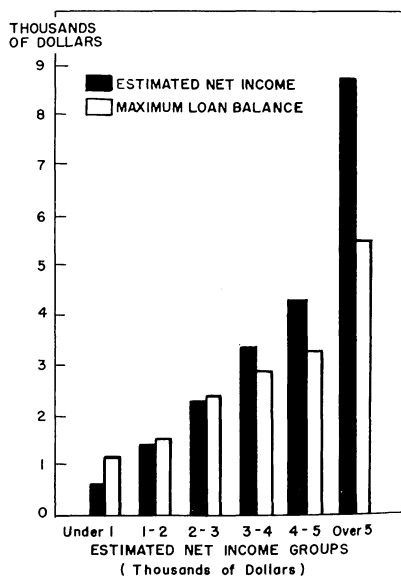


FIG. 8. Relationship of estimated net income to maximum loan balances, 434 PCA loans, 1948-49.

Number of Advances and Repayments

THE 685 BORROWERS signed 3,048 individual promissory notes in obtaining PCA funds, an average of 4.5 advances per borrower. In repaying the loans, the borrowers made a total of 3,349 payments, an average of 4.9 per borrower.

The "Additional Advance" the Most Common Type of PCA Disbursement

The disbursements made by PCA's to the borrowers can be classified into three groups: initial advances, budget advances, and additional advances. An initial advance is the first disbursement made to a borrower upon closing the loan. This type of advance may be the first disbursement in a new loan or it may renew the principal of an old loan. Budget advances are made on an installment basis with provisions for the time and amount of disbursement having been determined at the time of loan application. Additional advances represent new cash advances to borrowers, exclusive of initial or budget advances. Additional advances are not scheduled for disbursement as are the budget advances. Upon closing of the loan, there usually is an understanding between the PCA and the borrower that the association, within limits, will take care of the farmers' added requests for credit on the additional advance basis.

In fact, additional advances served as the principal means of disbursing PCA funds. On the average, 2.9 out of 4.5 advances per borrower were additional advances (table 10). These were 65 per cent of all disbursements. Only 11 per cent of all disbursements were budget advances. The rapid shifts in cost-price relationships of this period may have lowered the accuracy of budgeting and tended to discourage the practice. Also the general drop in farm income is believed to have resulted in more additional advances than would have occurred in a period of more stable prices.

There was no appreciable difference in the number of advances and repayments per borrower among tenure groups. The principal factors which give rise to variation in advances and repayments are type and size of loan.

Livestock Farmers Had Most Advances

Livestock farmers averaged the greatest number of advances, 5.4 (table 11). The frequent outlays for feed and

Table 10. Average Number of Advances and Repayments per Borrower by Type of Tenure, 685 Minnesota PCA Borrowers, 1948

Tenure status	Advances per borrower				Repayments per borrower
	Initial	Budget	Additional	Total	
Full owner	1.1	0.6	2.7	4.4	5.0
Part owner	1.1	0.5	2.6	4.2	4.6
Tenant	1.0	0.4	3.4	4.8	5.0
Total	1.1	0.5	2.9	4.5	4.9

Table 11. Average Number of Advances and Repayments per Borrower by Major Type of Farm Enterprise, 685 Minnesota PCA Borrowers, 1948

Major type of farm enterprise	Advances	Repayments
Livestock	5.4	4.3
General	4.4	4.6
Grain	3.9	3.4
Dairy	3.7	7.4
Poultry	3.6	3.0
Total	4.5	4.9

Table 12. Average Number of Advances and Repayments per Borrower by Size of Maximum Loan Balance, 685 PCA Borrowers, 1948

Size of maximum loan balance	Advances	Repayments
Under \$1,000	2.2	3.2
\$1,000-1,999	3.7	5.2
2,000- 2,999	5.4	5.2
3,000- 3,999	6.9	5.9
4,000- 9,999	8.0	6.6
10,000 and over	9.3	6.0
All loans	4.5	4.9

operating expenses and the large size of the loan led to the use of many advances.

There were marked differences in the average number of advances and repayments associated with each type

of loan. In dairying, the number of repayments was twice the number of disbursements, probably a result of the practice of using a certain amount from each milk or cream check for this purpose. On general farms, for the state as a whole, the average number of advances and repayments were about equal. However, on general farms in the southeastern and northeastern dairy regions, repayments exceeded advances in number. This reflected the heavy weighting of the dairy enterprise in the organization of the general farms in these areas.

Advances and Repayments Increase with Size of Loan

The number of advances increased with size of loans, the average for loans under \$1,000 being 2.2 and for those of \$10,000 and over, 9.3 (table 12). The smaller loans usually covered some minor, timely operating expense or provided the means of purchasing a single piece of equipment. The larger loans not only provided funds for purchasing more goods of a working capital nature but also for meeting expenses on various operations at different times during the year.

Length of Time Loans Were Outstanding

THREE-FOURTHS of the PCA loans were outstanding for a period from 11 to 13 months. Fewer than 20 per cent were in force for less than seven months (table 13).

A consistent relationship existed between tenure groups and the time which loans were outstanding. For the state as a whole and in all three regions, tenants held loans for the longest period of time. The contract term on most loans was 12 months. Tenants found it necessary to make use of vir-

tually all the time permitted them under the contract terms.

Poultry and Grain Loans Outstanding for Short Periods

The number of months the loans were outstanding was influenced by

Table 13. Number of Months Loans Outstanding by Tenure Status, 633 Minnesota PCA Loans, 1948-49*

Tenure status	No. of loans	Number of months loans outstanding					Total
		Under 5	5-7	8-10	11-13	Over 13	
				per cent			
Full owner	321	6.9	15.0	5.0	72.2	0.9	100.0
Part owner	158	6.3	15.2	1.9	76.0	0.6	100.0
Tenant	154	4.5	6.5	3.9	84.4	0.7	100.0
All loans	633	6.2	13.0	3.9	76.1	0.8	100.0

* Loans still open at time of study were not included in above study.

the type of farming of the borrower. Eighty per cent of the dairy and general farm loans were outstanding for approximately 12 months. This was true of about 70 per cent of the livestock loans and only 60 per cent of the poultry and crop loans (table 14). Considerable variation in time the loan was outstanding was common to all types of enterprises. This means that the needs or uses of credit on all types of farms vary greatly. To a large extent, the differences in the patterns of loan time outstanding are dependent upon the biological nature of the enterprises.

The average time outstanding among loans by type of enterprise ranged from 9.6 months for crop loans to 11.2 months for dairy loans. For all types of loans the most typical term was from 11 to 13 months. Only 16 per cent of the loans in the entire study ran for a period of six months or less.

This suggests that lending agencies

to serve adequately the needs of farmers for production credit must be prepared to make loans for longer periods than six, or even nine months. Shorter-term loans in many instances will require renewals if they are to serve the purpose. A desirable arrangement is that of fitting the period of the loans so that repayment will coincide with receipt of income by borrowers.

Larger Loans Outstanding for Longer Periods

More than four-fifths of the loans over \$2,000 were outstanding for about a year. Only two-fifths of loans under \$500 were outstanding for this length of time. Approximately 60 per cent of the group of smallest loans were outstanding for a period of less than seven months while this was true of only 10 per cent of the larger loans (table 15).

Many small loans were for minor expenses. Often they were used to tide over farmers for short periods await-

Table 14. Number of Months Loans Outstanding by Major Type of Farm Enterprise, 633 Minnesota PCA Loans, 1948-49

Tenure status	No. of loans	Number of months loans outstanding					Total
		Under 5	5-7	8-10	11-13	Over 13	
				per cent			
Dairy	114	0.9	14.0	.....	83.3	1.8	100.0
General	303	6.6	11.2	2.0	79.5	0.7	100.0
Livestock	142	7.7	12.7	6.4	72.5	0.7	100.0
Grain	58	10.3	20.7	10.3	58.7	.....	100.0
Poultry	16	6.3	12.5	25.0	56.2	.....	100.0
All loans	633	6.2	13.0	13.0	76.1	0.8	100.0

Table 15. Number of Months Loans Outstanding by Size of Maximum Loan Balance, 633 Minnesota PCA Loans, 1948-49

Size of maximum loan balance	No. of loans	Number of months loans outstanding					Total
		Under 5	5-7	8-10	11-13	Over 13	
				per cent			
Under \$499	60	20.0	38.3	1.7	40.0	.....	100.0
\$ 500-\$ 999	106	4.7	18.9	6.6	68.9	0.9	100.0
1,000- 1,999	218	5.0	10.6	1.8	82.1	0.5	100.0
2,000- 2,999	119	5.1	6.7	4.2	84.0	.....	100.0
3,000- 3,999	45	4.4	2.2	6.7	84.4	2.3	100.0
4,000- 9,999	68	2.9	7.4	2.9	86.8	.....	100.0
10,000 and over	17	5.9	11.8	17.6	52.9	11.8	100.0
All loans	633	6.2	13.0	3.9	76.1	0.8	100.0

ing receipts from marketings. The liquidity positions of farmers holding small loans, as reflected in their current assets to current liabilities ratio, also was very good (20:1). Under such conditions, early retirement of debt would be expected.

In the large loans, the financing presumably was for more items of a durable capital goods nature. Buildings, other farm improvements, motor vehicles, machinery, and tractors usually

do not pay for themselves in one season. It was apparent that large loans would run for longer periods of time. Both lender and borrower had in mind renewing the loan at the end of the customary one-year contract term. A relatively shorter period of time characterized the loans over \$10,000. Here the major portion of the funds was used to finance large feeding operations in which liquidity and early payments were reasonably assured.

Budgeting of Loans

THE APPLICATIONS for the loans included in the study were examined to note the number of cases for which there was evidence of budgeting² at the time the application was made (figure 9). Customarily the repayment program with data and source of repayment was set up at the same time. The repayment program was considered a part of the budget of income and expenses and was found in the PCA field representatives' report. Three out of every 10 PCA borrowers made full provision for the budgeting of disbursements and repayments at the time they applied for their loans.

² *Budgeting* as used in this discussion refers to listing on the application form the dates and purposes of future disbursements. The inclusion of such information in the application indicates a conscious effort to fit advances to the needs of the borrower. However, this does not mean a single-advance loan may not also have been budgeted in the sense of being adapted to the needs of a particular situation.

Tenants Led in Budgeted Loans

The highest proportion of budgeted loans was found among the tenant group (table 16).

The differences indicated rather

APPLICATION FOR AGRICULTURAL LOAN

SAMPLE PRODUCTION CREDIT ASSOCIATION OF SAMPLE, MINNESOTA

1. The undersigned hereby makes application to the above association for a loan for 12 months as follows:

2. PURPOSE AND AMOUNT OF LOAN: (For immediate disbursal) (4-2-51)		AMOUNT
Refinance tractor debt \$1,050.00 - interest \$75.00		\$ 1,125.00
\$300 to pay lumber bill and feed account - seed oats \$200 - seed corn \$60 - hog and dairy feed \$200		760.00
"B" Stock Investment \$ 125.00 Loan Service Fees \$ 13.00 Filing and Abstract Fees \$ 2.00		140.00
Date and Purpose (For future disbursal)	Total Immediate Needs	\$ 2,025.00
June 1951, feed and concentrates		250.00
August 1951, harvest expenses - gas and oil		200.00
Total Amount Requested		\$ 2,475.00

3. If loan is granted I will give a chattel mortgage on _____ and all proceeds from _____

FIG. 9. Budget section of application for agricultural loan used by PCA's.

clearly a tendency to plan more closely the extension of credit to tenants than to part owners. Because of larger size of business, the repayment ability of part owners may have been greater than tenants'. In view of the smaller income prospects of tenants, more prior planning may have been brought to bear on their cases. Part owners had, on the average, the strongest ratio of current assets to current liabilities among the tenure groups; tenants, the weakest. It is also likely that PCA officials, in view of the possibility of

less experience among tenants, may have considered closer analysis of the tenant loans advisable.

Type of Farm Enterprise Played Small Role in Use of Budgeting

The type of farm enterprise in which farmer-borrowers specialized appeared to play a minor role in determining whether or not the loans were budgeted (table 17).

If it is assumed that there were differences in credit risks inherent in the various types of farming, the PCA's evidently relied on means other than budgeting to control the actions of the borrower or to minimize the chances of financial loss.

Budgeting Important on Large Loans

As the loans increased in size, the association officials made greater use of the loan budgeting technique (table 18). Only about one-tenth of the loans under \$500 were budgeted. One-fourth of the loans between \$500 and \$3,000 were placed on a system of planned disbursements and repayments, while one-half of all loans above \$3,000 were treated in this manner.

The advantages of budgeting were greater for farmers using large amounts of credit than small. The use of large sums usually meant that there

Table 16. Loans Budgeted by Tenure Status, 685 Minnesota PCA Borrowers, 1948-49

Tenure status	Per cent of loans budgeted
Full owner	28.1
Part owner	24.4
Tenant	35.4
All loans	29.1

Table 17. Loans Budgeted by Major Type of Farm Enterprise, 685 Minnesota PCA Borrowers, 1948-49

Major type of farm enterprise	Per cent of loans budgeted
Livestock	31.3
Poultry	31.3
General	30.5
Grain	26.7
Dairy	23.1
All loans	29.1

Table 18. Loans Budgeted by Size of Maximum Loan Balance, 685 Minnesota PCA Borrowers, 1948-49

Size of maximum loan balance	Per cent of loans budgeted
Under \$499	10.6
\$ 500-\$ 999	25.2
1,000- 1,999	28.8
2,000- 2,999	26.0
3,000- 3,999	30.8
4,000- 9,999	47.8
10,000 and over	60.0
All loans	29.1

Table 19. Loans Budgeted by Size of Net Worth, 685 Minnesota PCA Borrowers, 1948-49

Size of net worth	Per cent of loans budgeted
Under \$4,999	28.7
\$5,000-\$9,999	29.9
10,000-14,999	34.0
15,000-24,999	23.7
25,000-49,999	28.2
50,000 and over	28.6
All loans	29.1

were demands for credit at many times during the year. Timeliness was assured by budgeting. The funds were available to meet necessary farm expenses as the season progressed without further consideration of the loan at the time of disbursing scheduled budget advances. In case of requests for large unanticipated additional advances, the association officials probably reconsidered the entire loan. The latter procedure often involves considerable delay.

Table 20. Loans Budgeted by Size of Net Income, 434 Minnesota PCA Borrowers, 1948-49

Size of net income	Per cent of loans budgeted
Under \$999	39.0
\$1,000-\$1,999	33.8
2,000- 2,999	26.9
3,000- 3,999	36.4
4,000- 4,999	37.9
5,000 and over	37.0
All loans	33.9

The one-or-two-advance loan serves some credit needs adequately. The farmer who needs to borrow for some specific outlay rather than for use to cover a series of expenditures may find a straight loan suitable. In the case of PCA loans, provisions are made for repayments at any time with interest charged only on the unpaid balance. This permits the borrower to economize in the use of borrowed funds.

Little Relationship between Size of Net Worth or Net Income and Budgeting

No relationship was found between budgeting and the size of net worth or the size of net income (table 19). Prospects for income, including uncertainty, may carry more weight in budgeting than net worth. While budgeting may appear more important in case of borrowers of small income, the returns on smaller loans limit the amount of time and effort which the lender can afford to give them (table 20).

Security for Loans

EIGHTY-SEVEN PER CENT of the loans included were secured by collateral. A rather general practice among PCA's in most Farm Credit Districts is to take individual chattel mortgages on all machinery, equipment, and livestock.

On grain farms, crop liens are taken on growing crops. Other lending agencies which employ chattel mortgages often apply them only to selected equipment or livestock.

There are several reasons advanced for employing the all-inclusive mortgages. One is that it adds to the quality of the loans and aids the Intermediate Credit Banks in selling their debentures at favorable rates. Another is that the farm business needs to be viewed as a whole and that this method avoids having other creditors foreclose on equipment or livestock necessary to maintain the earning capacity of the farm. PCA's also point out that it is their purpose to handle all of the production credit of its members and complete coverage of chattels facilitates the extension of additional credit where appropriate.

Ninety-five Per Cent of Tenant Loans Secured

The loans studied showed that PCA's required a higher proportion of tenants to furnish security than of part owners. The percentage for the latter was slightly greater than for full owners (table 21). Not all tenants have had an opportunity to establish a credit rating. Other factors may include their relatively lower liquidity

Table 21. Loans Secured by Tenure Status, 685 Minnesota PCA Borrowers, 1948-49

Tenure status	Per cent of loans secured
Full owner	84.2
Part owner	86.3
Tenants	93.7
All loans	87.2

Table 22. Loans Secured by Major Type of Farm Enterprise, 685 Minnesota PCA Borrowers, 1948-49

Major type of farm enterprise	Per cent of loans secured
Grain	76.7
Livestock	86.3
General	88.1
Dairy	89.3
Poultry	100.0
All loans	87.2

status, more limited farming experience, and the like.

Fewer Grain Loans Backed by Collateral

The proportion of loans secured was very similar for farms of different enterprises except for grain and poultry (table 22). Grain farms had the lowest proportion secured with about three-fourths while the loans of specialized poultry producers were all secured.

Repayment of Loans

BORROWING for production purposes implies that the loan is to be paid from current farm production. A short-term loan which is renewed repeatedly may become a loan for fixed capital needs rather than current production.

Two measures of liquidity were used in this study. The first was to view the individual farmer-borrower's *accounts* for the year 1948 in terms of months

which the borrower remained indebted to the PCA's. The second method involved tracing the history of the *loans* until they matured and noting whether

or not the volume of debt of the borrower was increased or decreased during the period of the loan. The former method referred to the liquidity of the accounts; the latter method referred to the disposition of the loans.

The liquidity of a borrower's account plays an important role in the analysis of the financial progress of the individual farmer-borrower. It is particularly important for a lending agency in the short-term credit field to strive for a periodic "clean up" of the borrower's account. Such a procedure permits the lending agency to review the progress of its borrowers and to evaluate the desirability of granting further credit in individual cases.

For the purposes of determining credit liquidity, the accounts were classified into four groups:

- (1) Group A: Those accounts in which loans were originated within the year 1948 and were repaid by the end of the year.
- (2) Group B: Those accounts in which loans were originated in the previous year (1947) and repaid by the end of 1948.
- (3) Group C: Those accounts in which the loans were originated within the year 1948, but were not repaid by the end of the year.
- (4) Group D: Those accounts in which the borrowers were indebted to the PCA's for the entire 12 months of 1948.

The loans classified in Group A were considered highly liquid. They were the type of loan that was taken out at the beginning of a seasonal production period and liquidated at the end of that period. On the other hand, loan accounts in which the borrower was indebted to the PCA for the entire 12 months were considered to be characterized by a high degree of non-liquidity.

Disposition of a loan was defined as

the ultimate action taken with respect to the particular loan under consideration; that is, was the loan (1) paid off in full, (2) renewed at a greater amount than the principal of the loan it replaced, or (3) renewed at a lesser amount than the principal of the loan it replaced? This measure of liquidity also was indicative of the trend in the volume of indebtedness among PCA borrowers.

The methodology adopted in this study was to take the borrower's last loan during 1948 and follow through on its disposition. This meant that if a borrower had negotiated two or more loans in 1948, only the most recent loan entered into the analysis. It also meant, in certain cases, that the "last loan during 1948" was a loan originated in 1947. This type of loan was of the type found in Group B above, for such loans were originated in 1947 but were paid off in 1948. For loans which were renewed, it was possible in many instances to determine the relative increase or decrease in the amount of the renewal loan in comparison with the loan that it replaced.

Repayment of Loans Showed Little Variation among Tenure Groups

Four out of every 10 borrower accounts fell into the non-liquid category. In only 11.5 per cent of the accounts were loans taken out and repaid within the same calendar year; 8.3 per cent of the loans fell into Group B; and 41.0 per cent into Group C, loans which were originated in 1948 but not repaid within that year. No significant relationship was found between liquidity and type of tenure. The slight differences which existed could have resulted from chance errors in the sampling process (table 23).

For the state as a whole, 43.4 per cent of the loans of 685 borrowers were paid in full, 47.4 per cent were re-

Table 23. Liquidity of Borrowers' Accounts by Tenure Status, 685 Minnesota PCA Borrowers, 1948

Tenure status	Liquidity of borrowers' accounts					Total
	Group A	Group B	Group C	Group D	Unclassified	
			per cent			
Full owners	12.6	8.5	40.9	37.7	0.3	100.0
Part owners	11.3	5.4	43.4	39.9	.....	100.0
Tenant	9.7	10.8	38.9	40.8	0.6	100.0
All loans	11.5	8.3	41.0	38.8	0.4	100.0

newed, and 9.2 per cent were "unclassified." Of all loans, 26.1 per cent were renewed at an amount greater than the original amount of the loan they replaced, and 21.3 per cent were renewed at an amount less than the original amount of the loan replaced. At the time of the field survey, certain of the loans originated in 1948 were still outstanding. In such cases, the disposition of the loans was indeterminate and they were listed as "unclassified." No significant differences were found in the relation between tenure status and the disposition of the loans (table 24).

Dairy Loans Were "Slow" Loans

There was a great deal of variation in the liquidity of the accounts among

major types of farm enterprise. Nearly one-half of the dairy accounts were indebted to the PCA's for the entire 12 months of 1948. This was true of 40 per cent of the general and 38 per cent of the livestock accounts. Crop and poultry accounts, on the other hand, were most liquid (table 25).

Liquidity, in the sense here used, was associated closely with the seasonality of the major farm products produced. Grain and poultry loans were highly seasonal and were relatively liquid. The income situation in the various enterprises also may influence the liquidity. Among dairy, general, and livestock farms, it was apparent that a large number of members were depending on the associations for capital of an intermediate nature rather

Table 24. Disposition of Loans at Maturity by Tenure Status, 685 Minnesota PCA Loans, 1948-49

Tenure status	Disposition of loans at maturity				Total
	Paid in full	Increased	Decreased	Unclassified	
			per cent		
Full owner	42.1	28.1	20.7	9.1	100.0
Part owner	42.9	23.9	23.9	9.3	100.0
Tenant	46.3	24.6	20.0	9.1	100.0
All loans	43.4	26.1	21.3	9.2	100.0

Table 25. Liquidity of Borrowers' Accounts by Major Type of Farm Enterprise, 685 Minnesota PCA Borrowers, 1948

Major type of farm enterprise	Liquidity of borrowers' accounts					Total
	Group A	Group B	Group C	Group D	Unclassified	
			per cent			
Poultry	37.5	12.5	43.7	6.3	.....	100.0
Grain	21.7	3.3	48.3	26.7	.....	100.0
Livestock	7.5	10.0	45.0	37.5	.....	100.0
General	11.6	7.9	40.9	39.6	.....	100.0
Dairy	8.3	9.1	32.2	48.8	1.6	100.0
All loans	11.6	8.3	41.0	38.8	0.3	100.0

Table 26. Disposition of Loans at Maturity by Major Type of Farm Enterprise, 685 Minnesota PCA Loans, 1948-49

Major type of farm enterprise	Disposition of loans at maturity				Total
	Paid in full	Increased	Decreased	Unclassified	
			per cent		
Dairy	33.9	26.4	27.3	12.4	100.0
General	41.8	26.8	23.2	8.2	100.0
Livestock	43.8	31.2	12.4	8.1	100.0
Grain	63.4	13.3	11.6	11.7	100.0
Poultry	68.8	6.2	18.7	6.3	100.0
All loans	43.4	26.1	21.3	9.2	100.0

than for merely seasonal or peak-load requirements of greater liquidity.

The findings with regard to the disposition of the loans correspond quite closely with the liquidity of the accounts during 1948. Two-thirds of the poultry and grain loans were repaid fully upon maturity. Complete repayment was made on slightly more than two-fifths of all livestock and general loans, but on only one-third of the dairy loans (table 26).

As an indication of the trend in the volume of indebtedness, 31 per cent of the livestock loans were renewed at an amount greater than the loan they replaced. Among dairy and general farms, 27 per cent of the loans also were increased upon renewal. Increases in loans were experienced among only 13 per cent and 6 per cent of grain and poultry loans, respectively.

The slow repayment record of dairy loans during the period of this study has been mentioned earlier. In a typical year, butterfat and milk prices usually rise as production falls off during the autumn months and remain above the annual average until the following spring. However, the opposite movements in butterfat and milk prices occurred in 1948. These prices declined 25 to 33 per cent beginning in August of that year. As a result of this substantial decline, many dairy farmers obtained renewals. In many cases these renewals involved use of additional funds as well.

Small Loans Were Paid Off Quickly

The larger the size of the farmers' PCA accounts, the higher the proportion of farmers who were indebted to the association for the entire 12 months of 1948. About 30 per cent of the small accounts were highly liquid in nature in that they were made and paid off within a year. Accounts ranging from \$4,000 to \$9,999 were at the other end of the liquidity scale, for only one borrower out of 60 repaid the loan within the year (table 27).

Likewise, the smaller the amount of the farmers' accounts up to \$10,000, the higher was the proportion of loans repaid by loan maturity date. Two-thirds of the loans under \$500 were fully repaid by maturity, but this was true of only one-third of the loans between \$4,000 and \$9,999 (table 28).

Small loans often were made to help meet previous commitments and debt installments, or to tide over the borrower between the time of a miscellaneous expense and receipts from marketing. When the loan was negotiated, it was viewed as an interim proposition. The repayments usually were geared to the sale of some commodity to be marketed at an early date.

The loan accounts from \$1,000 to \$10,000 included some farmers who were relying on the associations for a great deal of their working capital. In many cases, the proceeds of the loans

Table 27. Liquidity of Borrowers' Accounts by Size of Maximum Loan Balance,
685 Minnesota PCA Borrowers, 1948

Size of maximum loan balance	Liquidity of borrowers' accounts					Total
	Group A	Group B	Group C	Group D	Unclassified	
	per cent					
Under \$499	28.8	4.5	40.9	25.8	.....	100.0
\$ 500-\$ 999	20.0	10.4	41.7	27.0	0.9	100.0
1,000- 1,999	8.5	9.7	43.2	38.1	0.5	100.0
2,000- 2,999	8.7	8.7	40.4	41.7	.....	100.0
3,000- 3,999	5.8	7.7	34.6	51.9	.....	100.0
4,000- 9,999	1.5	4.3	36.2	58.0	.....	100.0
10,000 and over	10.0	5.0	45.0	40.0	.....	100.0
All loans	11.6	8.3	41.0	38.8	0.3	100.0

Table 28. Disposition of Loans at Maturity by Size of Maximum Loan Balance,
685 Minnesota PCA Loans, 1948-49

Size of maximum loan balance	Disposition of loans at maturity				Total
	Paid in full	Increased	Decreased	Unclassified	
	per cent				
Under \$499	65.2	13.7	9.0	12.1	100.0
\$ 500-\$ 999	51.3	20.9	13.9	13.9	100.0
1,000- 1,999	41.1	28.4	22.5	8.0	100.0
2,000- 2,999	37.8	29.1	26.0	7.1	100.0
3,000- 3,999	34.6	57.7	28.9	7.7	100.0
4,000- 9,999	33.3	33.3	24.7	8.7	100.0
10,000 and over	45.0	20.0	30.0	5.0	100.0
All loans	43.4	26.1	21.3	9.2	100.0

were applied toward the purchase of articles of a durable nature. These loans could not be repaid from one year's earnings. In a few cases, some farmers who always seemed short of cash were borrowing as much as they could for farming operations and living expenses. Such farmers experienced difficulty in paying off their loans. In many situations, particularly as the size of the loan increased, a renewal of the loan was anticipated at the time the funds were initially granted to the farmer.

Special attention was given the loans over \$10,000. This group of loans frequently showed a departure from general tendencies associated with size of loan. The borrowers had a larger equity in working capital than borrowers of small amounts of money. The loans were outstanding for a relatively short period of time. The liquid-

ity of the accounts was better than the group of loans from \$1,000 to \$10,000, and the repayment record also was higher. Because of the amount involved, the large loans undoubtedly were screened very carefully by association officials. For extremely large loans, approval of the Production Credit Corporation of St. Paul is required. The size of the operations usually meant that the farms had large capacities to repay. As many of the large loans were for feeding operations, the liquidity was reasonably assured.

Farmers with Largest and Smallest Net Worth Had Best Repayment Records

The liquidity of the PCA accounts showed very little variation among farmers grouped by size of net worth

**Table 29. Liquidity of Borrowers' Accounts by Size of Net Worth,
685 Minnesota PCA Borrowers, 1948**

Size of net worth	Liquidity of borrowers' accounts					Total
	Group A	Group B	Group C	Group D	Unclassified	
	per cent					
Under \$5,000	10.0	11.3	45.0	32.5	1.2	100.0
\$5,000-\$9,999	10.3	9.3	36.1	44.3	.....	100.0
10,000-14,999	9.0	9.0	44.9	37.2	.....	100.0
15,000-24,999	12.8	5.8	38.5	42.3	0.6	100.0
25,000-49,999	16.7	9.0	43.6	30.7	.....	100.0
50,000 and over	19.0	.....	52.4	28.6	.....	100.0
All loans	11.6	8.3	41.0	38.8	0.3	100.0

**Table 30. Disposition of Loans at Maturity by Size of Net Worth,
685 Minnesota PCA Loans, 1948-49**

Size of net worth	Disposition of loans at maturity				Total
	Paid in full	Increased	Decreased	Unclassified	
	per cent				
Under \$5,000	47.5	21.3	23.7	7.5	100.0
\$5,000-\$9,999	39.2	26.8	25.2	8.8	100.0
10,000-14,999	39.7	31.4	19.9	8.9	100.0
15,000-24,999	40.4	27.6	22.4	9.6	100.0
25,000-49,999	56.4	20.5	11.6	11.5	100.0
50,000 and over	66.7	9.6	14.2	9.5	100.0
All loans	43.4	26.1	21.3	9.2	100.0

**Table 31. Disposition of Loans at Maturity by Size of Estimated Net Income,
434 Minnesota PCA Loans, 1948-49**

Size of estimated net income	Disposition of loans at maturity				Total
	Paid in full	Increased	Decreased	Unclassified	
	per cent				
Under \$1,000	37.3	30.5	20.3	11.9	100.0
\$1,000-\$1,999	33.8	34.6	23.9	7.7	100.0
2,000- 2,999	35.5	27.9	30.8	5.8	100.0
3,000- 3,999	34.9	30.3	22.7	12.1	100.0
4,000- 4,999	20.7	31.1	31.0	3.4	100.0
5,000 and over	45.7	17.4	26.0	10.9	100.0
All loans	35.2	29.7	26.6	8.5	100.0

(table 29). This indicates that the amount of net worth a borrower possessed did not govern the rapidity or frequency with which he "cleared up" his account within as short a period as a calendar year. Such things are determined more by the purpose for which the loan is made and the size of the loan.

While the picture of the activity

within the accounts for a period of a year failed to reveal any important differences in liquidity by equity groups, the nature of the final action taken with respect to individual loans differed widely by equity groups. Farmers with the smallest and the largest net worth paid off the highest percentage of loans upon maturity of the loan (table 30).

Few Differences among Income Groups

No significant differences were found in the over-all relation of size of estimated net income to the liquidity of the borrowers' accounts or to the final disposition of the loans (table 31).

The findings indicate that small loans are used more often for current oper-

ating or consumption purposes rather than for capital expenditures. The latter normally require a longer period than one year and usually involve loan "carry-over." Associations knowing the limited income possibilities on small units, also may have given special attention to keep loans to small farmers on a relatively liquid basis.

Agricultural Production Loans of Banks

A SURVEY of the short-term lending of eight selected country banks was made to obtain data for some comparisons between loans of banks and of PCA's. The sample included 40 loan cases from each of the eight state banks, or a total of 320.

Four of the banks included were in Region I and there were two banks in each of Regions II and III (see figure 1). In Region I, two were in the southwestern livestock-cash crop area and two in the Red River Valley area. The sample is too small to provide an adequate basis for detailed comparisons. However, it is believed that the following preliminary observations may be of interest.³

PCA's Average Larger Loans

The loans made by the PCA's averaged substantially larger than those included in the sample study of banks, the maximum loan balances averaging \$2,450 and \$1,664, respectively (table 32). Fifty per cent of the bank loans were below \$750, compared with only 20 per cent of the PCA loans below this amount.

Several considerations are involved in this difference. PCA's make mainly production loans. Banks in addition

make many *convenience* loans. These usually are comparatively small and reduce the average materially. PCA's seek to handle all of the production financing of its members while banks commonly do not insist on this arrangement. Average size of loans at times may be reduced by arrangements under which borrowers employ *split* lines of credit. Certain fixed charges on PCA loans for searching records, recording chattel mortgages, and making inspections add relatively more to the costs

Table 32. Size of Maximum Loan Balances, Commercial Bank and PCA Loans, Minnesota, 1948-49

Size of loan	Commercial banks PCA's	
	per cent	
Under \$250	22.2	2.5
\$ 250-\$ 499	15.3	7.2
500- 750	13.8	9.3
750- 1,499	17.8	27.3
1,500- 2,999	17.8	33.1
3,000- 4,999	6.2	12.1
5,000 and over	6.9	8.5
Total	100.0	100.0
Average size	\$1,664	\$2,450
Median size	550	1,574
Number of borrowers	320	685

³The study of lending by country banks is being continued and additional information is being obtained from a larger number of banks.

Table 33. Average Number of Advances and Repayments per Borrower, Commercial Bank and PCA Farm Production Loans, Minnesota, 1948

Lender	Advances	Repayments
Bank	3.4	4.1
PCA	4.5	4.9

of small loans than large loans. The PCA's are restricted by law from making loans smaller than \$50 while state banks ordinarily cannot lend an individual borrower more than 15 per cent of the bank's capital and surplus. These limitations probably do not affect a sufficient number of cases to alter averages greatly.

More Advances and Repayments Among PCA Borrowers

The average number of advances and repayments per loan was somewhat greater for the PCA's than for the banks studied (table 33). This is to be expected with loans of larger amounts. A larger number of advances and repayments suggests that these are geared more closely to the credit requirements of the borrowers. It also tends to reduce interest expense to farmers by holding down the number of dollar-days for which interest must be paid. The sample of banks was too small and the differences not sufficiently striking to warrant drawing definite conclusions on this score. The loans of both PCA's and banks showed greater numbers of advances and repayments in livestock-cash grain areas than in dairy regions.

Loans Made for Different Time Periods

PCA loans were outstanding for an average of 10.6 months while bank loans averaged 3.3 months. About 60 per cent of the PCA loans were in force for 10 to 12 months while about the same percentage of bank notes were for less than four months (table 34). One important reason for this arose from differences in the method of handling loans. In the case of PCA loans, the maturity date for the initial advance became the maturity date for the subsequent advances. Commercial banks set a maturity date for each disbursement or note.

Higher Proportion of PCA Loans Secured

The loans to about one-half of the bank borrowers were secured, usually by chattel mortgage but sometimes by certificates of deposit, conditional sales contracts, and cream or milk assignments. This compares with about 90 per cent of PCA loans secured by chattel mortgages (table 35). Here again it is well to bear in mind that a considerable proportion of the bank loans were small.

Generalizations on this score cannot be drawn from the bank loans studied because of the considerable variations found among banks in security requirements. Of the banks included, those in the Red River Valley and the northeastern dairy area required security more generally than those in

Table 34. Number of Months Loans Outstanding, Commercial Bank and PCA Farm Production Loans, 1948-49

Lender	Number	Number of months loans outstanding						Total
		Under 4	4-6	7-9	10-12	Over 12	Unclassified	
					per cent			
Bank	1,094 notes	59.1	28.2	5.6	2.2	0.5	4.4	100.0
PCA	685 loans	4.4	10.5	4.8	62.3	10.4	7.6	100.0

Table 35. Per Cent of Accounts Secured by Region, Commercial Bank and PCA Farm Production Loans, Minnesota, 1948-49

Lender	Number of borrowers	Region I	Region II	Region III	All loans
		per cent			
Bank	317	53.8	38.0	71.2	54.2
PCA	685	83.8	86.5	87.2	87.2

the livestock and more diversified crop areas of southern Minnesota, the percentage of secured loans being 70 and 40, respectively.

Interest Rates Vary

Differences in interest rates are important in comparing different sources of credit. Specific comparisons are not made here because the number of banks included was insufficient for this purpose and because of the considerable variations in interest rates and terms. Moreover, such a comparison involves more than the contract rates. Differences in fees and other charges for inspection, filing, abstracting, and other services must be included in comparing effective interest rates. The obligation to purchase stock by PCA borrowers may or may not represent an addition to cost depending on whether dividends are paid on such stock and at what rates.

The contract rate is uniform for PCA loans, but service fees and purchase of stock help determine the effective rate. Because the fees usually do not increase proportionately with the size of the loan, the effective rate tends to be somewhat lower on the larger loans. In the case of loans by banks there was some tendency for contract rates to decline as the size of the loan increased, in recognition of the differences in costs of servicing. Contract rates also indicated some tendency for rates to vary among type-of-farming areas. The higher rates were in the northeastern dairy and the Red River Valley areas, with lower rates in the

southwestern livestock and central dairy areas.

Bank Loans More Liquid

Because of differences in methods of operation, attempts to compare the liquidity of farm loans of commercial banks with PCA loans may not be too significant. When the proportion of borrowers continuously indebted to the lender during the period of the study is used as an indicator of liquidity, banks loans are more liquid because a larger proportion of them are made for shorter terms. When the extent to which borrowers meet their obligations in full at maturity is used as a measure of liquidity, some differences between the two were found. Sixty per cent of the bank notes were liquid in the sense of being paid at maturity. Slightly less than 50 per cent of the PCA loans were paid off in full at maturity. It should be noted that about half of the PCA loans were for machinery, livestock, feed for livestock, and land improvements. Moreover, the bank loans on the average were smaller and, in general, the smaller the amount, the greater the proportion paid at maturity.

Banks Make Shorter Loans, More Renewals

Renewals were three times as numerous for the bank loans studied as for PCA loans. Renewals constituted 32 per cent of total advances for these banks during the period reviewed and 11 per cent for the PCA loans. An im-

portant reason for this is that the relatively short periods common for bank loans are not sufficiently long to meet many of the credit needs of farmers. Where renewals do not involve added costs and do not create uncertainties about the availability of funds for the full period no particular difficulties arise. Sound financing from the farmer's point of view calls for adapting the maturity dates to the time of anticipated income or receipts.

PCA's Make More Use of Financial Statements

The financial statements and income and expense statements of prospective borrowers supply information regarding the earning capacity of the farm business and the sale value of the assets. This is information of use to the lender in deciding upon whether or not a loan is to be made and for what amount. PCA's commonly obtain financial statements with applications for loans. The commercial banks surveyed obtained financial statements from four

out of every ten borrowers, although the practice varies considerably among banks and in different regions. The use of income and expense statements was confined to the PCA's (figure 10). Only two of the eight banks maintained a credit file for each borrower.

Various factors account for these differences. Banks may have access to a greater variety of sources of information regarding the financial situation of their patrons and be better acquainted with them than is true in the case of PCA's. The fact that many bank loans are for smaller amounts also is a consideration. Financial statements are required more generally in the case of loans over \$500. The banks studied dispensed with financial statements in the case of secured loans. The practices of the banks studied suggest that commercial banks may not be following too closely the suggestions of the American Bankers Association and others that financial statements be obtained and credit files be maintained for farmer borrowers.

SALES AND INCOME						STATEMENT OF INCOME, COST AND OUTLAY			
Past Year	Source	Current Year	REPAYMENT PROGRAM			Past Year	Purpose	Date of Outlay	Current Year
			Date	Source	Amount				
'50-'51		'51-'52	3-1-52	2 Strs.	\$ 500	\$ -0-	Chh/Hgh P.P. Tax	\$ 76	
	Cattle	\$ 500				100	Interest H/H Chat.	100	
	Veal					100	Income Tax	100	
	Sheep					100	Taxes Chh/H R.E.	100	
	Wool					200	Insurance (All kinds)	200	
						1,000	Feed - Chh/Hgh/Hgh Seed	800	
						-0-	Fertilizer - Seed - Spray	-0-	
						150	Vtbl/Hgh/Chh/Hgh Msc. Suppl.	100	
\$2,400	Hogs	3,035	12-1-51	30 Hogs	1,350	100	Repairs H/H/Hgh/Hgh/Hgh/Hgh Paint	150	
			4-1-52	15 Hogs	720	-0-	Repairs (Machinery - Equipment)	50	
						300	Gas and Oil (Car - Truck - Tractor)	300	
1,500	Dairy	1,800				-0-	Livestock Expense (Vot - Breed fees)	-0-	
300	Poultry	300				1,200	Family Exp. (Ed. - Med. - Fuel)	1,400	
						3,250	TOTAL OPERATING COSTS	3,376	
							LIST OTHER COSTS AND OUTLAY		
	Crop on hand						R.E. Principal payments - (due)	-0-	
	Crop to grow						Reduction of Debts on Financial Statement		
	AAA						Tractor debt	1,125	
							Feed and Lumber bills	300	
\$4,200	TOTALS	\$5,635			\$2,570*	\$3,250	TOTALS	\$4,801	
	Less Pledged Income	2,570			(Repayment)		Less portion provided in Loan	2,475	
	Balance Income	\$3,065			*Includes Est. Int. Cost		Balance Costs (from free income)	\$2,326	

7. State clearly your conclusions relative to above operating data and any unusual items of income (custom work - salary - ...) and outlay.

FIG. 10. Form used by PCA's to budget income and expenses.

Summary and Conclusions

Size of Loans

The average size of PCA loans was \$2,450. The most typical size of loans was \$1,574 for one-half of the loans were greater and one-half were less than this amount. Poultry and livestock loans were largest in size; dairy loans, smallest. Loans to part owners were larger than those to full owners or tenants. The size of loan increased with size of net worth and size of estimated net income of borrowers.

Purpose of Loans

Of the funds loaned by the PCA's in 1948-49, the principal purposes were for operating expenses, machinery and equipment, and renewals. Each of these purposes accounted for 20 per cent of the funds disbursed. Livestock purchases represented 15 per cent of the total funds, and land and improvements constituted 10 per cent. Other purposes were for refinancing old debts, living expenses, and miscellaneous expenses.

Advances and Repayments

The average number of advances per borrower was 4.5 during 1948, while the number of repayments averaged 4.9 per account. However, there was a great deal of variation in number of advances and repayments, particularly with respect to size of loan. Accounts with maximum loan balance less than \$500 averaged 1.7 advances and 2.5 repayments; accounts over \$10,000, 9.3 advances, and 6.0 repayments. Livestock farms had the highest number of advances. Dairy farms had the highest number of repayments.

Time Outstanding

Three-fourths of the PCA loans were outstanding for approximately one

year, but there were some significant variations. Small loans were outstanding for shorter periods than large loans. Dairy loans were outstanding for longer periods of time than poultry or crop loans. Loans made to tenants were carried, on the average, for a longer period than loans to part owners or full owners.

Budgeting of Loans

Three out of every 10 loans were budgeted. Budgeted loans were planned at the time the member applied for credit so that the entire loan was advanced in installments as needed and repaid when the products financed were sold. Large loans were budgeted more closely than small. A higher proportion of tenant loans was budgeted than owner loans. No significant differences in budgeting requirements were found in relation to major type of farm enterprise, size of borrower net worth, or size of borrower net income.

Security

Eighty-seven per cent of all PCA loans were secured by chattel mortgage. The proportion of loans secured increased with size of loan. A higher proportion of tenant loans were secured than part owner loans and part owner than full owner loans. As net worth of the borrowers increased, the proportion of loans on which security was required decreased. Security requirements showed very small differences among borrowers grouped by major type of farm enterprise or by various estimated net income groups.

Repayment of Loans

One criterion of success in lending operations is the final liquidation of the loan. In this study it was found that small loans were paid off more

readily than large loans. Poultry and crop loans possessed a higher degree of liquidity than livestock, general, or dairy loans. No significant differences in liquidity were ascribed to accounts or loans in relation to tenure status, size of borrower net worth, or size of borrower estimated net income.

Commercial Bank and PCA Loans

PCA loans were typically three times the size of bank loans. The median PCA loan was \$1,574; the bank loans, \$550. The pattern of advances and repayments of both agencies was similar in the various type-of-farming regions. However, the average number of advances and repayments of PCA loans tended to exceed those of commercial bank loans. This was attributed to the larger size of PCA loans.

A marked difference existed in the period of time the loans were outstanding. PCA loans were outstanding for a period of about 10.6 months; commercial bank notes for 3.3 months. The short term of the bank notes led to a high proportion of renewals. Approximately one-third of the bank notes were renewals, whereas only one-tenth of the total advances of the PCA's involved a renewal. In spite of frequent renewals, the liquidity of the bank borrowers was high. Approximately only one-fifth of the bank borrowers and two-fifths of the PCA borrowers were continuously indebted to the banks during 1948. Sixty per cent of the bank notes and slightly less than 50 per cent of the PCA loans were paid off in full at maturity date. Security was required from 54 per cent of the bank borrowers and from 87 per cent of the PCA borrowers.

The methods used by the PCA's and commercial banks in examining their loans differed widely. The commercial banks included in the survey sample collected financial statements from only four out of every ten borrowers.

They made no attempt to formalize an income and expense statement for their borrowers, relying primarily on their knowledge of the borrower for such information. The PCA's obtained financial statements from all their borrowers and prepared income and expense statements for approximately two-thirds of their loans.

Need for Improvement in Net Income Analysis

In many cases, PCA's loaned amounts greater than one year's estimated income. In the final analysis, most of these loans possessed a high degree of liquidity and were completely paid off within one season. The result was that the relationship between estimated net income and final disposition of the loans was highly unrealistic. Many loans made to farmers could not have been justified on the basis of estimated net income figures alone. Although repayment ability is stressed by PCA's, the present method of income analysis needs considerable refinement before this tool can be used effectively in credit analysis.

Improvement in Bank Practices

The short maturity of the notes taken by the commercial banks and the high proportion of renewals of these notes indicate that the banks did not gear the term of their notes closely to farmers' credit needs. The disadvantages to the farmer of frequent renewals are those of cost, of uncertainty regarding renewals, difficulty of long-range farm planning, and the possibility that premature liquidation of assets may be required. It is believed a more thorough pre-examination of loans would lead to sounder financing. This requires detailed knowledge of the purpose of the loan, borrower's financial status, his income prospects, and a record of his financial progress through the years.