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FINANCING FARM EQUIPMENT BY MINNESOTA COUNTRY BANKS

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INTRODUCTION

The capital requirements of farming have increased greatly in the last half century. This has been especially true in recent years with rapid changes in technology and mechanization. Farmers today have large investments in machinery and equipment. As of January 1, 1953, the value of farm machinery and motor vehicles on farms in the United States totalled $17.2 billion. This is more than five times the 1940 value of $3.1 billion. Even after allowance for the rise in prices the investment in machinery and motor vehicles is nearly 2½ times that of 1940. [2]

Farm mechanization has proceeded at a rapid pace, particularly since the end of World War II. During this period, much of the farm machinery and equipment acquired by farmers was purchased with the aid of credit.

There are two principal lending agencies which supply farmers with farm machinery loans, namely, commercial banks and production credit associations.

The Department of Agricultural Economics of the University of Minnesota conducted a survey last summer of the short-term agricultural lending activity of country banks in the state with particular reference to farm machinery finance. This is a report of that study.

PURPOSES AND SCOPE OF STUDY

The purposes of the study were to determine the volume and characteristics of both direct and indirect farm machinery loans; to compare the two types with respect to such points as down payment requirements, interest rates, and repayment provisions; and to obtain views of bankers regarding trends in the demand for equipment loans in their respective areas.

Direct machinery loans are those which the farmer obtains directly from the bank to purchase equipment. Indirect loans originate through machinery dealers. Such loans are usually secured by a conditional sales contract. If acceptable, this obligation is subsequently sold by assignment to a bank.

A 10 per cent random sample of all country banks outside of type-of-farming area 8 was selected. The banks in the Twin Cities and suburbs were

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1/ The authors acknowledge with appreciation the assistance of Dr. E. Fred Koller who was leader of the project. Appreciation is also expressed to the country bankers for their generous cooperation in supplying the basic data.

2/ The Balance Sheet of Agriculture 1953, United States Department of Agriculture, Bureau of Agricultural Economics, Washington, D. C.

also excluded. The term country bank in this study refers to banks outside of Minneapolis and St. Paul, even though some of our out-state banks are large banks located in sizable urban communities. Nevertheless, farm business is an important segment of the total in most of these banks.

The counties and type-of-farming areas in which the 57 sample banks are located are shown in figure 1.

A representative of the Department of Agricultural Economics visited these banks in the summer of 1953. The information was obtained by interviews with bankers and from call reports and other records.

Generalizations with respect to methods of handling farm equipment loans and the characteristics of these loans are difficult. Each bank is an institution in itself. The individual banker has considerable latitude in conducting his business. In addition, each loan case is an entity in itself. No two borrowers are precisely alike as to such items as character and capacity. Therefore, bankers cannot follow a set of hard and fast rules in making loans.

TRENDS IN DEPOSITS AND LOANS OF COUNTRY BANKS

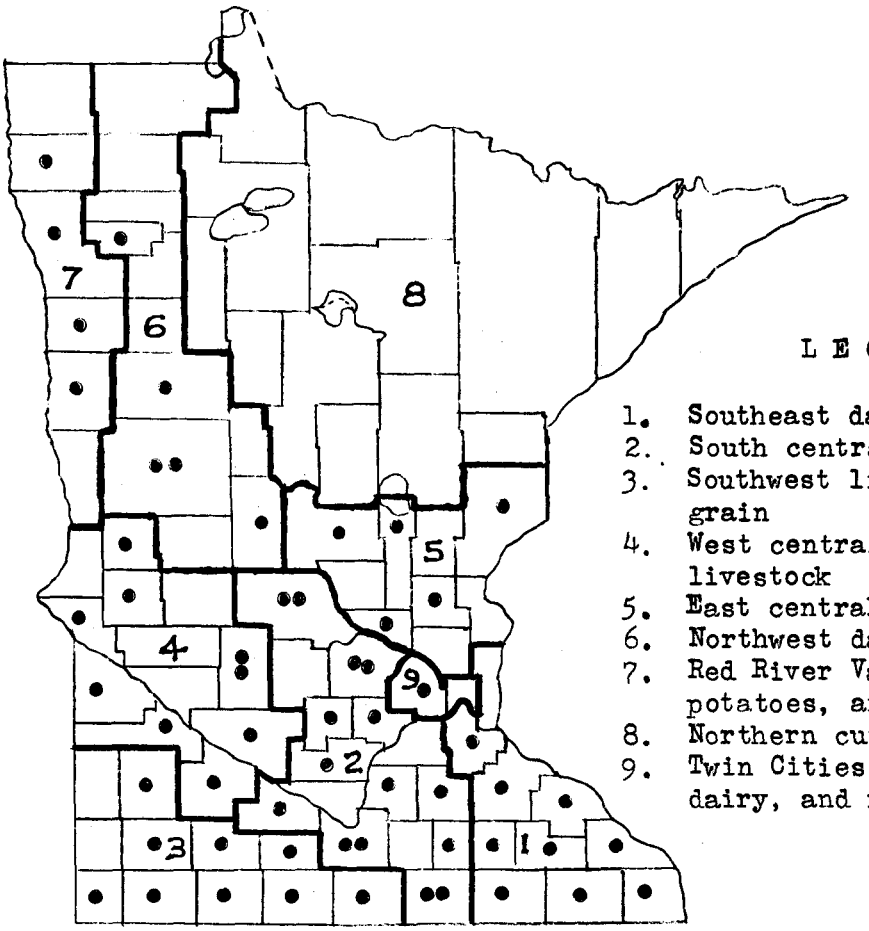
Midyear call reports of the banks studied were drawn upon for some selected balance sheet comparisons. The average deposits of these banks on June 30, 1953 were $2,230,541, or somewhat above the average of $2,105,366 on June 30, 1952, increases being shown by 45 of the 57 banks (table 1). Average total loans and discounts were $959,081 on June 30, 1953, compared with $885,201 a year earlier. Average non-real estate farm loans decreased from $289,034 to $286,927. Decreases were shown by 27 of the 57 banks. These comparisons suggest conservatism on the part of farmers in borrowing to buy machinery and equipment in a period of lowered farm incomes. Another factor affecting the total non-real estate farm loans is the drop in cattle prices. Costs of livestock replacements and feeder cattle were lower. All 9 of the survey banks in type-of-farming area 3 - the Southwest livestock area, showed decreases in non-real estate farm loans.

Table 1. Averages of Selected Balance Sheet Items, 57 Minnesota Country Banks, June 30, 1952 and June 30, 1953.

	June 30, 1952	June 30, 1953
Total loans and discounts	$ 885,201	$ 959,081
Total non-real estate loans to farmers	288,034	286,927
Total government bonds	820,419	876,611
Total assets	2,281,950	2,422,052
Total deposits	2,105,366	2,230,541

Short-term farm loans are important in the loan portfolio of country banks. As of June 30, 1953, the average for all 57 banks indicated that 30 per cent of the total loans and discounts consisted of short-term farm loans.

Figure 1. Type-of-Farming Areas in Minnesota and Location of the Participating Banks



LEGEND

1. Southeast dairy and livestock
2. South central dairy
3. Southwest livestock and cash grain
4. West central cash grain and livestock
5. East central dairy
6. Northwest dairy and livestock
7. Red River Valley small grain, potatoes, and livestock
8. Northern cut over dairy
9. Twin Cities suburban truck, dairy, and fruit

BANKERS' COMMENTS ON TRENDS IN DEMAND FOR EQUIPMENT LOANS

Forty-four banks, about three-fourths of those surveyed, reported decreased demand for farm equipment loans during the past year. Nine banks reported an increase while four banks reported the demand to be unchanged.

Lower farm income was the reason most often cited by bankers for the decline in the demand for machinery loans. Other bankers indicated that farmers are well equipped, consequently, do not need as much machinery credit. These bankers pointed out that future machinery purchases by many farmers would be confined to those made necessary because of depreciation and obsolescence.

The nine bankers who reported an increase in the demand for farm equipment loans cited various contributing factors each applicable to the specific locale. In the main, these reasons centered about the increased desire and need of farmers for specialized types of crop equipment such as combines, hay bailers, and forage choppers.

FARM EQUIPMENT LOANS OF BANKS

As of June 30, 1953, the average bank in the study held $286,927 in non-real estate farm loans. Bankers estimated that $106,126 or 37 per cent, of this amount, represented loans for the purchase of farm equipment. Bankers also estimated that $32,931, or 31 per cent of the total machinery loans, represented contracts purchased from dealers. The remaining $73,195 were direct machinery loans.

These figures are bankers' estimates of their equipment loans. The amounts of indirect loans are more readily arrived at from the banks' records. Estimates of direct loans are more difficult. Some unsecured loans may be used for equipment purchases and parts of chattel loans may be so used without the banker having specific information.

DIRECT LOANS ON FARM EQUIPMENT

All 57 banks in this survey made direct loans to farmers for purposes of financing machinery purchases. A complete description of these direct machinery loans is difficult because of variations, but some of the more common loan standards and loan characteristics can be observed.

Down payment Requirements

Where the equipment purchased is the only collateral put up as security for the loan, banks commonly require the borrower to make a down payment to establish an equity in the machine. Twenty-three banks reported that they required a down payment of one-third of the purchase price in such loan cases. Eleven banks required a down payment of one-fourth. All banks, however, reported that the down payment requirements varied from borrower to borrower depending upon character, farming ability, financial statement, and credit rating.

A considerable number of bankers indicated a preference for including assets such as livestock, in addition to the purchased equipment as collateral in chattel mortgages for equipment loans. In such cases, the loan may cover the full purchase price of the machine. Such loans, consequently, often become intermingled with and become a part of an over-all chattel loan covering a wider range of farm production needs.

Some established customers with a good credit rating may be granted loans for equipment purchases on their signatures.

Loan Charges

The banks reported 6 per cent as the most common interest rate on direct machinery loans. Twenty banks reported this rate. Sixteen banks indicated that they charged 7 per cent. As shown in table 2, a number of banks re-

Table 2. Interest Rate Charges on Direct Farm Equipment Loans, 57 Minnesota Country Banks, 1953.

Interest rate	Number of banks
6%	20
6½%	2
7%	16
8%	5
6% and 7%	7
6% to 8%	3
5% to 7%	1
7% and 8%	3
	57

ported that the interest rate varied. Previous studies of farm production loans of Minnesota country banks have shown that banks commonly charge different interest rates to different borrowers depending upon such factors as the size of loan, collateral security, and the ability to repay. Undoubtedly more of the banks in this survey varied their interest rate charges on farm equipment loans than are indicated in table 2. In many cases, the rate reported by the banker was the most common rate charged.

The contract interest rate, however, is not an exact measure of the effective rate when there are other charges such as minimum interest charges, service charges, or filing and abstracting fees connected with the loan. Such charges in connection with bank farm production loans are nominal and raise the contract rate appreciably only on the small loans.

These direct farm equipment loans are invariably made on a simple interest basis. Prepayments are allowed and the farmer pays interest only on the outstanding balance of his loan.

Length of Loans and Repayment Provisions

Farm equipment financing frequently becomes a matter of intermediate credit. This is particularly true in the case of large loans for the purchase of major equipment such as tractors, combines, corn pickers, field choppers and the like where the amounts involved require more than one crop year for repayment.

Thirteen of the survey banks reported that they made farm equipment loans with terms of from one to two years. Twenty-two banks reported that they would make machinery loans with terms of up to one year but not longer. Nineteen banks indicated that they restricted the time period of these loans to six months. Included in this latter category are several banks which made all of their equipment loans mature in the fall of the year regardless of when the loan was made during the year.

In many farm equipment loans terms of 6 months or even one year are not sufficiently long for full liquidation. In most cases, however, there is an understanding that an extension will be granted if needed. Banks that make

all of their loans due in the fall expect some liquidation from fall marketings with the intention of renewing the balance.

Although farm equipment loans may be renewed at maturity, sound lending policy requires that these loans be regarded as a fixed commitment to be repaid within their stated maturity. Loans can be repaid within the maturity period only to the extent the original terms are geared to the farm income stream and the over-all income capacity of the farm business.

A thorough analysis of repayment provisions should be made before each loan is closed. As a rule, farm incomes are somewhat seasonal and repayment schedules can conveniently be arranged to conform to this seasonal flow. Provision can be made on this schedule for repayment of the loan out of estimated receipts from marketings at various dates.

Advantages accrue to both the lender and the borrower when a repayment schedule geared to fit the borrower's income is worked out in advance. The borrower will know definitely when and how much he is expected to repay on his loan. He will not have to rely on a renewal unless some unforeseen contingency arises and the lender can cut down on the costly operation of making renewals. Finally, the bank will have a truer picture of the real liquidity of its loans.

INDIRECT LOANS TO FINANCE FARM EQUIPMENT

This method of farm machinery finance has become increasingly important since the end of World War II. Before the war it was a common practice for farm machinery manufacturers to carry farmers' notes turned over to them by dealers. While this service is still being offered by machinery manufacturers, most of the farmers' obligations are now sold by assignment to commercial banks.

It will be recalled that, on the average, about 30 per cent of the machinery loans of the banks in this study represented contracts purchased from machinery dealers.

Forty-six of the 57 banks reported that they purchased such contracts. Of the 11 banks which did not purchase machinery contracts, 9 did not do so as a matter of bank policy. The remaining 2 banks indicated that they would purchase contracts if they were offered them.

Methods Used in Purchasing Dealer Contracts

One of several forms of endorsement may be used in dealer assignments. These include three main categories, namely, endorsement with full-recourse, limited-recourse, or non-recourse. Banks use a variety of agreements with dealers to purchase contracts which define the dealer's liability, provide for holdback reserves, etc. A summary of the arrangements that Minnesota country banks have with dealers follows.

The most common method of purchasing contracts used by the survey banks was the full-recourse plan. Under this plan, the dealer is fully liable to the bank for payment of the obligation in the event of default by the purchaser. Twenty-six of the 57 survey banks indicated that this was

the only way that they purchased dealer contracts. Several of these bankers were careful to point out, however, that they regarded the character and capacity of the borrower to be of foremost importance. Few bankers will take all contracts offered them even with the dealer's endorsement in full. This is as it should be because each loan should stand on its own merits, regardless of the dealer's endorsement.

Five banks used a holdback reserve in conjunction with the full-endorsement plan. In this case the bank retains about 5 per cent of the proceeds of each contract in a reserve for the dealer. Such retains are made until the reserve totals about 10 per cent of aggregate balance of contracts outstanding. This reserve is then charged in the event of a loss on a contract in default. Several of these banks pointed out that they used this plan for several of their "weaker" dealers. It should be noted that the liability of the dealer is not limited to the amount in the reserve under this arrangement.

Three banks used a profit-sharing reserve in conjunction with the full-endorsement of the contracts. In this case a certain percentage of the finance charge is set aside in a reserve account for the dealer. For example, one bank wanted its installment contracts made on a 6 per cent discount basis. Then one-fourth of the interest charge was set aside in a reserve account for the dealer leaving the bank with a net of about 8 per cent simple interest on the contract.

One limitation of the full-recourse plan is that a bank is limited as to the amount of paper it can buy from one dealer with full-recourse. Minnesota state banks, for example, cannot purchase fully endorsed contracts (trade paper) from any one dealer which totals more than 15 per cent of bank capital and surplus. However, if the dealer does not have a direct line with the bank, the bank can purchase fully endorsed contracts for an additional 15 per cent of its capital and surplus.

The second general method of purchasing contracts is the limited-recourse plan. This plan is commonly applied through a reserve created by retaining a certain percentage of the proceeds of each contract purchased. This reserve is accumulated until it is equal to about 10 per cent of the aggregate balances on any dealer's contracts. The reserve account protects the bank and the liability of the dealer is restricted to the amount in the reserve. Five of the survey banks used such a limited-recourse arrangement for certain dealers.

Banks may also purchase conditional sales contracts with no recourse on the dealer. Twelve of the survey banks purchased some contracts without recourse. Several of these banks indicated that they purchased contracts on such a basis after their legal limit on full-recourse paper had been reached, but only if they involved select credit risks. Other of these banks pointed out that the type of endorsement required of the dealer depended entirely on the credit standing of the borrower. If the man's character, capacity, and credit standing were excellent, these banks purchased such contracts without recourse on the dealer. In the case of "weaker" borrowers, they required the dealer's full endorsement.

The conditional sales contract needs to be used with discretion lest it lead to split-lines and over-extension of credit. Unless careful investi-

gation of sales contracts is made by bankers before purchase, they may involve loans which would be unacceptable if they were applied for as direct loans.

The same sound banking principles which apply in making direct loans on farm equipment, namely, a thorough analysis of the borrower's character, repayment capacity, and financial condition should be applied in purchasing conditional sales contracts from dealers. This should be the case even though the paper is endorsed with full-recourse by the dealer.

Down payment Requirements

When purchasing farm equipment on contract, the borrower is expected to make a down payment. Banks commonly instruct machinery dealers to require a down payment on each contract before they will purchase it. Twenty banks wanted a down payment of one-third of the purchase-price and twelve banks required a down payment of one-fourth. In many cases, the farmer has old equipment to trade in on the new machine and this may take care of at least part of the down payment. If the contract is on used equipment, the down payment requirements are higher.

Some banks require their dealers to complete a work sheet in connection with each conditional sales contract. Such information as the total selling price of the machine, trade-in allowance, cash down payment, and full description of the machine is recorded on this work sheet. In addition, there is space for the borrower's financial statement and other pertinent credit information. One banker indicated that he was very strict with dealers in requiring all of the above information in connection with each contract. The banker analyzed this information carefully before purchasing each contract.

Interest Rates and Finance Charges

It will be recalled that the most common interest rates on direct machinery loans were 6 and 7 per cent simple interest. Minnesota banking law permits a bank to charge 6 per cent discount on installment loans, however, most Minnesota country banks do not take advantage of this in making direct machinery loans. Invariably, simple interest is charged.

In the case of contracts purchased from dealers, however, the practice of charging interest on a discount basis is more common. Thus, on contracts, the interest charges often are calculated in advance and added to the amount being financed. About one-third of the banks that purchased dealer contracts made the interest charge on this basis. The discount rates varied from 4½ to 7 per cent with 6 per cent being the most common. This rate, however, is a poor measure of the effective rate paid by the borrower if the contract involves repayment by installments. The effective interest rate on a monthly installment contract is nearly twice that of the discount interest rate.

The other two-thirds of the banks carried dealer contracts on a basis of simple interest. These interest rates varied from 6 to 8 per cent with the 6 and 7 per cent rates being the most common.

Length of Contracts and Repayment Provisions

As in making direct machinery loans, a thorough analysis of repayment provisions should be made at the time of each contract sale. After a reasonable down payment has been made, installment payments should be scheduled to mature at periods when the purchaser has income. No attempt should be made to set up a standardized monthly repayment plan as in financing time sales of automobiles. With the exception of dairy farming where incomes accrue monthly, farm incomes are distinctly seasonal and installments should be scheduled to conform to this seasonal flow. It is a good idea for bankers to discuss this method of scheduling repayments with dealers so that installments will be made to fall due when the purchaser has income available.

The length of the contract varies with the type of equipment and whether it is new or used. Many bankers reported that contracts that involved major equipment such as tractors, combines, field choppers, etc. were made over two crop years. In such cases, common terms were a down payment of one-third of the purchase price with an installment of one-third coming due the first fall and the remaining one-third due in the spring or fall of the second year.

MACHINERY COSTS - AN AID IN LENDING 1/

Records kept by farmers provide information on machinery investments and costs which is useful to bankers in analyzing applications for machinery loans. Each farmer is different and must be considered separately, but some averages are helpful.

What is a typical investment in machinery? Records from 300 successful southern Minnesota farmers in 1952 showed present book values of:

	Total	Per acre of tillable land
Crop machinery	$4000	$20
Tractors, trucks, farm share of auto	$3500	$18

On 26 Red River Valley farms in 1951, the investment in tractors and crop machinery was about $25 per acre for farms under one section and $20 for farms of a section or more.

Original cost would have been about twice the present book value for these farmers. Most of these farmers were well established and had higher than average earnings; it is likely that they have invested about as much in machinery as we could justify.

What is the annual cost of this machinery? We have such figures for 33 southern Minnesota farmers for 1951 and 1952. The farms averaged 222

1/ This section was prepared by Dr. S. A. Engene of the Department of Agricultural Economics.

acres, with about three-fourths of it tillable. The average costs per farm were:

	Tractors	Crop Machinery
Depreciation	$253	$ 478
Interest	80	162
Repairs and upkeep	174	165
Servicing (value of own labor)	32	138
Fuel and oil	434	9
Shelter	16	94
Total	$989	$1046

Note the nature of these costs. For tractors, 65 per cent are costs directly connected with operation - fuel, oil, servicing, and repairs. Skillful operation and careful planning of work can help to hold these down. For crop machinery, however, the fixed costs are the most important. Depreciation and interest make up 61 per cent. To hold costs down, <u>think</u> and plan <u>before</u> buying. Careful use, good lubrication, and timely, adequate repairing will also help.

Are some types of machines more expensive than others? Yes. Half of the costs is for harvesting machinery. Here is the breakdown:

Hauling and general machinery	$ 213
Tillage machinery	160
Planting and cultivating machinery	121
Harvesting machinery	530
Crop sprayer	22
Total	$1046

Many of the harvesting machines are expensive, and take expensive supplementary equipment. It is easy for a farmer to over-invest in this machinery. When he does, it is serious. To illustrate, for the farmers who have these bigger machines, this is the annual cost per farm:

Field choppers	$344
Combines - 4-6 foot	211
Combines - 12 foot	349
Corn pickers - 1 row	156
Corn pickers - 2 row	231

Is there some simple rule for figuring machinery costs? Yes, as an approximate rule, the annual cost is about 20 per cent of the original cost. For some of the simpler, cheaper machines this may drop down to 15-18 per cent. As an example, for a 6-foot swather and combine costing $1500, the annual cost would be about $300. This will vary a little with the amount of use and kind of care given.

How can you know if this cost is justified? Unfortunately, we have found no simple rule; you have to figure for each farmer. How much can he earn with the machine, and how much will it save in other costs? As a rough, first approximation, compare the costs with custom rates. For example, take the combine, adjusting costs somewhat for different acreages (this does not include hauling).

Total machine cost	Acres to harvest	Machine cost per acre	Man and tractor per acre	Total cost per acre
$275	25	$11.00	$2.25	$13.25
290	50	5.80	2.10	7.90
310	100	3.10	2.00	5.10
325	200	1.62	2.00	3.62

Custom rates would be about $5.00 an acre. The man with the small acreage should consider (a) hiring the work done, (b) buying in cooperation with neighbors, (c) buying a second-hand machine, (d) doing custom work, or (e)harvesting with other equipment.

Machinery is necessary in modern farming. But the farmer must think before he buys if he wants the machinery to be a servant instead of a master.

SUMMARY

This study of the farm machinery loans of 57 Minnesota country banks revealed that, on the average, 37 per cent of the short-term farm loans of these banks represented loans for the purchase of farm equipment. About two-thirds of these machinery loans were direct loans. The remaining one-third represented conditional sales contracts purchased from dealers.

Three-fourths of the survey banks reported that the demand for equipment loans had decreased. Bankers cited lower farm incomes and the fact that many farmers are well equipped as reasons for the decrease in demand for machinery credit.

In the case of direct machinery loans where the equipment purchased is the only security for the loan, banks commonly loan about two-thirds of the purchase price. A considerable number of bankers indicated a preference for including assets such as livestock, in addition to the purchased equipment as collateral for equipment loans. In such cases, the loan may cover the full purchase price of the machine. Such loans usually become a part of an over-all chattel loan covering a wider range of farm production needs.

Interest rates of 6 and 7 per cent were the most common on direct machinery loans. These loans are invariably made on a simple interest basis.

Terms of one year or less were the most common for direct loans with the understanding of renewing the balance, if necessary, at maturity. These terms are not long enough for large loans that require more than one crop year for repayment. Careful consideration should be given to repayment schedules before such loans are closed. Repayments can be scheduled to conform to the seasonal flow of farm income. The borrower will then definitely know when and how much he is expected to repay on his loan. In addition the costs of renewals can be reduced.

Forty-six of the 57 banks reported that they purchased conditional sales contracts from machinery dealers. Banks use a variety of agreements with dealers to purchase contracts which define the dealer's liability, provide for holdback reserves, etc.

The most common method of purchasing contracts was the full-recourse plan. Under this plan, the dealer is fully liable to the bank for payment of the obligation in the event of default by the purchaser. Several banks used a holdback reserve in conjunction with the full-recourse plan. Others used a profit-sharing reserve in connection with this plan. The limited recourse plan, usually applied through a holdback reserve, was not as common. Twelve of the banks purchased some contracts without recourse on the dealer. Such contracts involved select credit risks.

The same sound banking principles that apply in making direct loans should be applied in purchasing dealer contracts. If not, contracts may become vehicles that lead to over-extension of credit through split-lines.

Down payment requirements on contracts usually range from one-fourth to one-third of the purchase price. Banks commonly require such down payments before contracts are purchased.

About one-third of the banks reported that interest charges on contracts were made on a discount basis. The discount rate varied from $4\frac{1}{2}$ to 7 per cent with 6 per cent being the most common. The other two-thirds of the banks carried dealer contracts at simple interest rates of from 6 to 8 per cent.

Terms of contracts were somewhat longer than for direct loans. Many bankers reported that contracts that involved major equipment were made over two crop years. As in the case of direct equipment loans, it is advisable to schedule installments to conform to the seasonal flow of farm income.

Farmers will continue to call on banks for large amounts of machinery credit because of the continuing trend in farm mechanization. The interests of both the lender and the borrower can be served best when such credit is geared to the earning capacity of the farm business.