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NORTH CENTRAL REGIONAL EXTENSION
PUBLICATION NO. 4

Credit as a tool for the AGRICULTURAL PRODUCER

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AGRICULTURE COOPERATING, W. V. Lambert, Director

Agricultural Extension Services of Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota and Wisconsin; the Farm Foundation and the Extension Service, U. S. Department of Agriculture, Cooperating.

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FOREWORD

Publication of this report is sponsored by the North Central Farm Management Extension Committee and by the Farm Foundation of Chicago. It was prepared at the request of the Subcommittee on Farm Credit. Copies of this publication may be obtained from the cooperating state extension services.

The following are members of the North Central Farm Management Extension Committee:

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Except for the cover page and foreword, this publication is the same as *"Credit as a Tool for the Agricultural Producer"* sponsored by the Great Plains Agricultural Council. The outline for these publications grew out of work with the Great Plains Committee on Tenure, Credit, and Land Values, and the North Central Farm Management

Extension Committee. The credit subcommittees of these two regional committees that gave special attention to this work consisted of:

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Credit as a Tool for the Agricultural Producer

AARON G. NELSON[1]

CREDIT IS A TOOL, the same as power equipment, electricity, fertilizer, sprays, and newer feeding methods. Like many other tools, the credit tool can cut two ways. Properly used, it can contribute to a larger income, greater security, and the attainment of individual and family goals. Used unwisely, credit can be a liability rather than an asset and a threat to the financial future of the user. Where a man used to "earn his bread by the sweat of his brow," he now earns a living largely by the use of tools, including financial tools as well as mechanical tools.

In modern farming,[2] as in other businesses, the key to a satisfactory money income is the proper combination of productive assets—land, livestock, machinery, etc.—with available labor and managerial ability. Borrowed funds are used by most successful farmers and other businessmen as a means or tool for achieving this proper combination or balance. Credit may be used to help buy a farm or add acreage to the present unit; to build, improve, or renovate buildings; to buy livestock and machinery, or to cover operating expenses.

Sometimes credit helps provide funds for family needs, such as sickness and education of children. By using credit for these purposes the family may be able to avoid drawing funds from the business which might disrupt an established balance in the operation.

The purpose of this bulletin is to give information that will help farm families use credit more effectively in organizing and operating their farm business. A procedure is outlined to aid in judging whether or not the farm business can be improved by borrowing funds, and, if so, how much should be borrowed. The different types of loans available to farmers, and how to figure the costs and other terms of these loans, are discussed. Some suggestions are made about selecting a lender. The important sources of farm credit are listed and the terms upon which they ordinarily make loans are briefly described. Examples are added to show how credit is used to achieve certain objectives and to illustrate some of the points discussed in the manuscript.

HOW MUCH SHOULD YOU BORROW?

This question confronts almost every farmer who assembles productive resources—land, machinery, livestock, operating funds, and the like—and organizes a business unit with which he can work or

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[1] Director of research and in charge of educational work, Farm Credit District of Omaha.

[2] For simplicity of wording, throughout most of this publication "farm" is used to denote either farm or ranch.

operate. Relatively few farmers have enough funds of their own to acquire control of a sufficiently large unit to balance the management of the operator. Many farmers lease part or all the land they operate. Some, particularly younger operators, work out family arrangements to provide part of the productive items they need to work with. Many farmers use borrowed funds to help round out their units and fill gaps which may develop.

Should You Borrow?

If you wish to operate a larger unit than you can provide with your own funds, the first thing to consider is whether borrowing is the best way to obtain additional assets. Renting, family arrangements, and other available methods should be compared with borrowing from the viewpoint of cost, assurance of being able to use the assets for the necessary period of time, and the risk involved with each method. Profits or benefits that can be realized by using borrowed funds should be considered. You should also determine whether you have the financial strength to assume the added risks involved in using credit. These considerations are basic in determining how much you should borrow.

Will It Pay to Borrow?

Will you be better off by using borrowed funds than by getting along without them, considering both long- and short-term effects on the business? The process of determining the amount it will pay to borrow involves a consideration of balance in the farm business. The concept of balance is involved in many phases of farm operation. Soil samples are analyzed to determine what fertilizer is needed to balance soil nutrients. The amount of various nutrients that can profitably be added depends upon their relative cost and the returns to be obtained from additional production resulting from their use. Likewise, protein supplements are fed to livestock to balance the feed ration. Here, again, the amount of supplements it will pay to add will depend upon relative costs of feed and supplements, and upon the value of the additional product produced. Thus, the balance one strives to attain as illustrated by these examples changes from time to time as relative prices and costs change. By striving to achieve the most economical balance, net income usually can be increased.

In a similar manner, maximum net income is obtained when the whole farm business is in balance, and in balance with the managerial ability of the operator. A farmer uses his financial assets to obtain land and buildings, livestock, machinery and feed, and to pay operating expenses and family living costs. Many farmers use part of their assets in their cooperatives to provide buildings and equipment, and operating funds for the part of their business conducted off the farm. These alternative uses compete with each other for the financial assets of the farm family.

On your own farm, you and your family decide how much of your assets are to be allotted to each use. The goal is to balance the farm business by increasing or decreasing the investment in various productive items. To obtain the greatest income you naturally will use your assets where they will yield the greatest net return. Maximum net farm income is obtained when the resources being used, including management, cannot be used in any other combination and give a greater net income.

Thus, if borrowing funds will enable you to achieve better balance in your business and so increase your *net* income, it will pay to borrow. Risk involved should be fully recognized, of course. Diversification helps reduce risk and often contributes to more efficient use of machinery, equipment, and available labor, but may reduce income if carried too far. All these factors should be considered in working toward a balance in your farm business.

Some paper work will be worth while in estimating how much credit can be profitably employed in your farm business. The process is known as budgeting. Budget forms usually can be obtained from your county agent, the production credit association, or the local banks. The objective in working out a budget is to *project your business into the future.* Use prices, costs, and production rates that can be expected in the repayment period rather than those that have prevailed in the past. The following outline may be helpful in indicating how to proceed.

Try to project your budget into the future.

(1) Estimate annual total production with your present operation. Use average yields or production you expect to obtain for each crop and each class of livestock during the period you will be using the borrowed funds. These averages should be close to what you have obtained over a period of years unless you have good reason for using different rates.

(2) Estimate the prices you will receive over the period. It is good practice to make these a little conservative as a means of insuring against overestimating income.

(3) Compute your estimated annual gross income by multiplying prices times production.

(4) Estimate total farm operating costs per year for the period with your present operation. The costs estimated might well be on the high side to insure against error, and because costs may gradually rise in the years ahead.

(5) Compute net *cash* income by deducting cash expenses from gross income.

(6) Compute net farm income by adjusting net **cash** income for changes in inventory during the period. Don't forget depreciation on buildings and machinery, if replacements and repairs have not been adequate to maintain value. Net income figures are a result of production, prices, and costs used; if these have been high or unrealistic, income estimates will provide an unreliable basis for judgment. Use reliable data, such as your farm record books, and reports and outlook information from your agricultural college and the United States Department of Agriculture as a basis for judgment.

Now go through this same process, assuming the borrowed funds have been used to expand your business. If net farm income is increased, use of borrowed funds would appear to be profitable. The process should be repeated, using different amounts of borrowed funds as an aid in judging how much it will pay to borrow. Difference in efficiency of the business as it changes in size should be recognized. The budgeting process can also be applied to each of the enterprises individually as an aid in judging where borrowed funds can be most profitably employed.

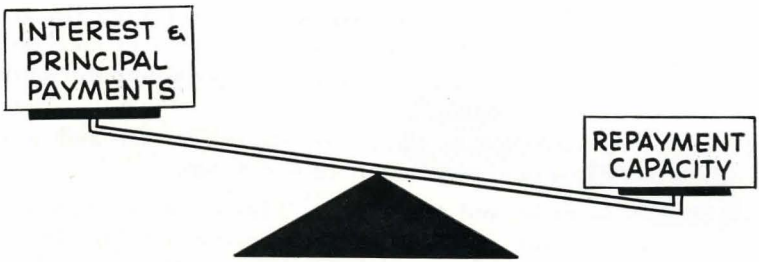
This budgeting process of projecting the business into the future will provide an indication of whether it will pay to borrow, and, if so, the amount of borrowed funds that can be profitably utilized in each of the various enterprises.

Repayment Capacity

The fifth step of the budget process outlined in the preceding section gives the anticipated net cash income—the amount available for living expenses, income tax, loan payments, etc. By deducting estimated living expenses and income taxes, you get an indication of the amount you can use to repay borrowed funds during the year or period covered by the budget. A comparison of this amount with total principal payments to be made during the period will indicate whether or not repayment capacity is adequate.

In analyzing repayment of loans, lenders consider it good business practice to repay from current income any borrowed funds used to cover operating and living expenses. "Feeder loans" should be repaid when the livestock are sold. Repayment of loans for purchase of assets with a longer productive life, such as machinery and breeding livestock, usually can extend beyond one year. Since the amount of depreciation on these assets is not the same each year and varies from farm to farm, lenders generally schedule payments to retire the loan somewhat faster than the item depreciates. This practice may provide a safety margin for some extension or deferment of payments in case of hard times or unforeseen losses, but since such assets do depreciate, the business-type lender is very limited in granting extensions of loan payments. In analyzing repayment capacity, the ability to meet loan payments as scheduled is very important.

The term or period of loan repayment affects the amount of debt that can be carried. Generally, the longer the term of loan the smaller the annual principal payments. Therefore, if your repayment capacity is not adequate to carry the amount of debt you can profitably utilize, as determined in the preceding section, arrange for as long a loan period as possible within good business practice, particularly for real estate loans. As the length of loan is extended, a greater margin of safety should be allowed to cover errors of estimate, and risk and uncertainty.



Repayment capacity should be adequate to fully balance interest and principal payments.

The type of assets purchased with borrowed funds influences the amount of indebtedness that can be carried. Assuming a profitable relationship between prices received and paid by farmers, funds used for operating expenses usually are recouped as a part of gross cash income when farm produce is sold. The original capital investment of items which gradually depreciate, such as machinery and breeding livestock, is returned to the operator as part of gross income. On the other hand, funds used to buy things that do not depreciate, such as good land, continue to be tied up until the asset is sold. The original capital investment is not returned as part of gross income. Borrowed funds used to buy things that do not depreciate must be repaid from net income. Owner-equity in such assets can only be increased from net income. Thus, principal repayments on loans cannot exceed the amount of net income available for debt repayment.

Living expenses, including income and social security taxes, must also come from net income. Thus, the amount spent for living expenses directly affects repayment capacity. Each family must decide how much net income is to be used for living expenses and how much for the farm business.

How Much Debt Will Your Financial Strength Support?

This consideration goes further than either of the two preceding —net income and repayment capacity. Those considerations are based upon *average* conditions, prices, costs, and yields expected over a period of years. Consideration of and need for financial strength

arises from the possibility of reduced income because of drought, unusual livestock losses, falling prices, sickness, etc.—the risks and uncertainties involved in farming and family living.

Considering how much one should borrow from the financial strength viewpoint might be likened to loading a truck. One would be foolish to load a truck to the point where an axle would break if a wheel hit a chuck hole in the road. A farm family would be equally unwise to take on a credit load to the point where they would go "broke" if adversity hit. Just as some highways have more holes than others, some areas and types of farming involve greater hazards and risk than others. Farmers in high risk areas or with high risk enterprises should take on a lighter debt load in relation to their equity than those in stable areas or in a type of farming where fluctuations in income are relatively small.

Financial strength means ability to stand unusual and unpredictable losses. It is made up mainly of five things:

(1) **Ability to make and save money.** This point is important to financial strength since it is one of the cornerstones for obtaining credit. An operator who can make money can soon recover from a bad year or unexpected loss. The savings ability is important because a good income adds little to financial strength if it is all spent on family living.

(2) **Stability and reliability of income.** If income were the same every year and could be counted on to continue there would be no need for financial strength *except* to meet unusual family expenses, such as sickness. Since farm income fluctuates, financial strength, in addition to that needed to cover unusual family expenses, is needed to enable the farm business to withstand unexpected expenses or a drop in income. The amount of financial strength needed will vary with the size of fluctuations in income and characteristics of the family. Farmers located in high risk areas or in high risk types of farming need greater financial strength than those in stable areas with a stable type of operation.

(3) **Ability to borrow in both good and poor times.** This is determined by the credit rating of the operator and the ability and willingness of the lender to stay with the borrower. A credit rating is built over a period of years. Its value tends to be greatest with the lender you have been doing business with. Other lenders may recognize and value your good credit rating but may not be able or inclined to take on new borrowers when the going gets rough. Thus, you will improve your financial strength by choosing and building a strong rating with a lender who can stay with you in poor times as well as in good times.

(4) **Ability to reduce operating and living expenses in poor periods.** This point is closely related to stability and reliability of income. In-

come available for loan payments will be much more stable if operating and living expenses can be reduced in low-income periods. Reducing operating expenses depends both on ability of the operator and whether or not the expenses are "fixed," i.e., must be paid every year regardless of income.

(5) **Owner equity—the backbone of financial strength.** Since financial strength means ability to meet unusual expenses or loss of income and keep operating, at least part of the owner's equity must be available for that purpose, or to contribute to a basis for credit. Owner equity spread thinly or otherwise tied up adds little to financial strength.

How can you develop a basis for judging the size of loan that can be supported with your financial strength? Probably the best way is to project your present business into the future, as has been outlined previously. In making the projection, assume you have losses such as occur irregularly in your area or type of farming—and assume also some illness in the family or other unexpected expense. You may want to start by assuming you have a bad livestock loss; or a drought, if you are in an area subject to drought. Cattle feeders can assume a cattle-feeding loss.

Financial strength is needed to meet risks and uncertainties.

Estimate how much your net income would be reduced if each of the assumed conditions occurred separately; include an allowance for unexpected family expenses and consider the possibility that more than one emergency may strike in a short period. Now repeat the process with the borrowed funds added—or without borrowed funds if you already have a loan. The difference in financial strength needed will help you judge whether you can support the loan.

The financial strength needed will often increase as the loan is increased, but that may not always be true. Borrowing for an irrigation well in an area subject to drought may reduce the financial strength needed. Often the proceeds of a loan will enable the operator to develop a more efficient enterprise and a better balanced unit which will be more profitable. In such a case the loan may increase the financial strength, perhaps more than would be needed to support the additional loan.

Ratios of borrowed funds to collateral are not adequate indicators of how much one should borrow. As has been pointed out, the amount

one should borrow—if borrowing is the best alternative—depends upon how much borrowed funds can be profitably employed, repayment capacity, and financial strength. Since these things vary between farm families, a uniform ratio of borrowed funds to collateral would contribute to some farmers borrowing more and others borrowing less than they should.

WHAT YOU SHOULD KNOW ABOUT CREDIT

Credit properly used can help a farm family achieve greater income and a more satisfactory life; improperly used, it can lead to financial ruin. Adequate information about credit will increase the efficiency and safety of its use in the farm business.

Types of Loans

The three major groups of loans for farm financing are: real estate mortgage loans; chattel mortgage loans; and unsecured loans. Terms and costs vary with each.

The type of loan you use will depend largely upon the purpose for which you are borrowing the funds. Selection of the right type will contribute to sound financial planning and wise credit use—having loan payments come due when you can pay them, having payments the size you can meet, and obtaining the lowest possible interest cost.

Real estate mortgage loans for long-term credit. Real estate mortgage loans provide credit secured by a note and mortgage on real estate. Such loans are ordinarily used to finance the purchase of land, construction of buildings, to make improvements on land and buildings, and to refinance existing long- or short-term debts. They are also used to provide funds for other purposes including the purchase of livestock and equipment, and payment of operating expenses.

Most real estate loans are based on "first" mortgages, but a considerable amount of credit is secured by second or junior mortgages. The most common situation is the taking of a second mortgage by the seller of a farm for the portion of the purchase price above the amount the buyer can pay down and obtain from a conventional lender. A second mortgage may also be taken to provide additional security and for other loan purposes.

Real estate loans are often called long-term credit because most mortgages are taken to secure notes that run five years or more. A large proportion of these loans are made for periods of 10 to 30 years while 30- to 40-year loans are made by some major lending agencies. The length of term depends upon the type of farming and the stability of income, the character of the borrower, and the policies of the lender.

Chattel mortgage loans for short- and intermediate-term credit. Chattel mortgage loans are those secured by a lien or mortgage on non-real estate or readily movable property, such as livestock, machinery,

and crops. Loans for operating and living expenses are usually secured by chattel mortgages and made for periods of one year or less. Most loans for the purchase of machinery, breeding stock, and other items which produce for several years are included in this category. While loans for these items may be for an "intermediate" term, they are usually handled on an "annual renewal" basis. The note and mortgage are written on an annual basis with the understanding that part or all of the loan can be renewed, provided that the business continues to be operated on a sound basis and the operator continues in good faith. Some lenders make such loans for more than one year and, if necessary or desirable, also provide for renewal options on part of the principal.

Loans for purchase of feeder cattle and lambs are mostly of the chattel mortgage type. Security included in the chattel mortgage varies but the feed, as well as the feeder livestock, may be included. Repayment is usually made when the livestock is marketed.

Installment loans are used by many farmers to purchase farm machinery, equipment, automobiles, and household appliances. Some installment loans are secured with a note and chattel mortgage on the item purchased. Many installment purchases are made on conditional sales contracts which a financial institution purchases from the seller of the merchandise. In such cases, the title remains with the seller or financial institution until the balance due is paid in full. In case of inability to pay, the merchandise can be repossessed in some instances without legal action, and the buyer usually loses the installments he has paid.

Some special purpose loans also fall in this group, such as commercial bank and government loans on stored grain.

Unsecured loans. Unsecured loans are those obtained without giving a mortgage or conditional sales contract on any property. Often referred to as "signature loans," they are obtained on a note signed by the borrower. Such loans are usually available only to individuals with good credit ratings. If such a credit rating has not been fully established by a borrower, the lender may require a co-signer or co-maker. It might be kept in mind that while these loans are not secured by a mortgage, the individual signing, co-signing, or co-making the note in effect pledges all his property as security.

Computing the Cost of a Loan

The entire cost of using borrowed funds, including interest and all other charges, is the second thing a farmer should know about credit. He should also know how to compute the *actual* interest costs for he may encounter some unusual names, charges, and methods in his business dealings. In order to compare the cost of loans from different lenders, he must know how to add up all the charges.

Interest. A universal charge for borrowing money is interest, but the rate quoted is not always the basis for a proper comparison and analysis of credit costs. There are several common ways or procedures of applying the interest charge. Even though the nominal interest rate quoted by different lenders may be the same, the actual or true interest rate may vary widely. Three of the most common procedures are:

(1) Annual interest on the *unpaid* balance.

(2) Annual interest on the *original* or *face* amount.

(3) Interest paid in advance—a *discounted* loan.

An example will illustrate the difference. Assume you arrange for a $1,200 loan at 6 per cent interest to be paid in 12 equal monthly installments. With procedure "1" the interest charge would decrease from $6 the first month to 50 cents the twelfth month and total $39. The average amount of loan used monthly would be $650. The actual interest charge ($39 divided by $650) is 6 per cent, the same as stated, so the nominal and the actual rates of interest are identical.

With procedure "2" the interest paid would be $6 for each of the 12 months and would total $72. The average amount of loan used monthly would still be $650. The actual interest charge in this case ($72 divided by $650) is 11.08 per cent—*nearly double the rate shown on the note.*

With procedure "3," assuming the loan was discounted for 12 months, interest would total $72, the same as with procedure "2," except that it would be payable in advance. You could pay it in cash in advance, add it to the amount borrowed, or, as is most common, have it deducted from the amount you actually receive from the loan. If the interest is deducted from the amount of the loan, the actual rate is increased to about 11.78 per cent—about 0.7 per cent above the actual rate with procedure "2." Not all loans are discounted for the full term of the loan as in this example. The actual interest rate decreases as the discount period decreases, but the actual rate on a discounted loan is always higher than for a nondiscounted loan calling for the same rate of interest.

Interest charges by personal finance or "small loan" companies deserve some attention. Some farmers use such loans even though the rates charged are often quite high. Here is an example of what might occur. Assume you trade cars and finance the balance due of $960 with a small loan company (financing such a large amount with a small loan company may not be possible in all states because of legal limitations, but the same principle applies with smaller amounts). You sign a 12-month note calling for monthly payments of $89.51. How much interest are you paying?

$89.51 × 12 =	$1,074.12 – total amount paid
Principal amount financed	960.00
Int. charge	$ 114.12

Average amount outstanding during year—$520.

$114.12 ÷ $520 = 21.95 per cent interest

When the monthly payment plan or any other plan calling for equal and evenly spaced payments is used, a convenient way of computing the actual rate of interest charged is to use the following formula:

$$\frac{\text{Total of finance charges}}{\text{½ original loan}} \times \frac{\text{Number of payments}}{\text{No. of years}} \times \frac{1}{\text{No. of payments} + 1} = \text{Actual annual rate of interest}$$

Substituting figures from the last example –

$$\frac{114.12}{480.00} \times \frac{12}{1} \times \frac{1}{13} = \frac{1369.44}{6240.00} = 21.95 \text{ per cent}$$

If the $960 can be borrowed from a conventional lender at 6 per cent interest on the unpaid balance the cost would be about $31.20 or $82.92 less than the $114.12 charged by the small loan company.

Carrying charges. Instead of interest as such, some time payment plans involve carrying charges which are added to the balance due. Carrying charges are often called by other names, such as "time differential" payments and credit or finance charges. In some cases, inspection fees and sales commissions include some carrying charges. The carrying charge may take the form of a smaller discount, or an addition to the purchase price. If a percentage rate is used, it will be applied to the face amount of the loan rather than to the unpaid balance. Where carrying charges are involved, the cost of credit is almost always greater than where a loan is secured from a commercial bank, production credit association, or other conventional lender.

A carrying charge might well be considered a red flag calling for careful consideration and study of costs involved. An example will illustrate the cost of such credit. Assume you are going to trade your old tractor on a new one costing $2,250. The allowance on the old tractor is $1,000, leaving $1,250. A carrying charge of $125 is added, making a balance due of $1,375. Principal payments of $687.50 are due at the end of 6 months and of 12 months.

Substituting these figures in the formula gives

$$\frac{125}{625} \times \frac{2}{1} \times \frac{1}{3} = \frac{250}{1875} = 13.3 \text{ per cent}$$

as the actual annual rate of interest.

Occasionally, interest is charged in addition to the carrying charge. In such cases, interest usually is charged on the face amount of the loan plus the carrying charge, with the result that the actual interest charge is very high.

Other loan costs. Expenses for bringing abstracts up to date are involved with real estate loans. Abstractors' charges often vary, so it might pay to get an estimate from more than one. Fees for recording or filing will be charged in the case of both real estate and chattel mortgage loans. Such fees usually are a fixed amount. Since these charges occur only once in the life of a loan, the longer the term the smaller the expense per unit of time the loan is outstanding.

Planning for Repayment

Payments on loans should be planned so they will come due when you have income to make the payments. This may seem elementary but it causes borrowers a lot of trouble. In difficult times, due dates in the hands of unsympathetic lenders, or lenders who themselves have prior obligations they must meet, can be hard taskmasters. The late Albert A. Goss, former Master of the National Grange, related this personal experience: "When I was a kid I got chased by a turkey and was nearly scared to death; and I have been chased by a bull. But if you ever want to get a real case of being chased by something that's tough, it's being chased by a due date."

Short-term loan repayments should be scheduled to coincide with the month or time of year when sales of farm products are expected to provide enough income to meet them. Crop production loans for items such as fertilizer, seed, and tractor fuel are usually made in the winter or spring and should be paid in the fall when crops are sold. If regular income is available from dairy or poultry product sales, monthly payments may be desirable. Livestock production loans should be scheduled to come due when cattle, hogs, or sheep are customarily sold. In planning these repayments, an understanding between the lender and borrower regarding renewal terms in the event of drought or other unavoidable drop in farm income is desirable and contributes to stability of the farm business.

Long-term loan repayments should be arranged to come due when income is expected to be adequate to meet them. Since long-term loans extend over a number of years, considerable flexibility in repayment plans is possible. The two most common are: (1) the amortization plan, and (2) the lump-sum plan.

The amortization plan provides that a specified amount be paid annually or semiannually for a number of years until the loan is repaid. Payments cover both interest and principal. Size of the payment depends upon the size of loan, and the number of years provided for repayment. The amortization method is a "pay-as-you-go" plan for repaying a farm real estate loan.

Two types of amortization payment plans are in common use today. With the "even payment" plan, payments are for the same amount throughout the life of the loan. The principal part of the payment increases as the interest part decreases. With the "decreasing payment" plan, payments decrease throughout the life of the loan. The principal part of the payment remains the same and the interest part decreases as the loan is paid down. Compared with the even payment plan, decreasing payment plan payments are somewhat larger during the first part of the period and somewhat smaller in the latter part of the period. Total interest paid is somewhat smaller with the decreasing payment plan.

Bring a plan along.

The variable payment plan is one type of amortization plan. Anual or semiannual payments are provided for but these payments are adjusted to farm income. In good years larger payments are made and in poor years payments are reduced. Compared with the amortized loan, described above, such a plan offers a further safeguard in cases of low income but it also is more complicated.

Some lenders use various methods in conjunction with the amortization principle to accomplish the objectives of the variable payment plan. Some have a future payment fund where borrowers may accumulate funds to meet future installments, if needed. These funds draw interest—which may be at the rate being paid by borrowers. Some lenders also have various plans for deferring payment of delinquent accounts when warranted by circumstances and the borrower's situation. Under extreme conditions payments may be reduced to equal the annual crop share rental income.

The lump sum payment plan, sometimes called the straight-end plan, provides that interest be paid only during the life of the loan and that the entire amount of the principal is to be paid on the due date. These loans are written for fairly short periods, usually five years.

The lump sum payment plan has two important disadvantages: (1) many borrowers are unable to save a large sum over a period to meet the lump sum payment unless they make regular payments as income is received; and (2) in periods of drought or low prices, accumu-

lating money to meet the lump sum payment is difficult and sometimes impossible. During such periods, the value of the farm may also decline so the lender may refuse to renew the loan, or will renew it only for a smaller amount. The times when it is most difficult to save money for lump sum payments prove to be the periods when it is most urgent that savings be accumulated if the farm or ranch is to be saved.

A modification of the lump sum payment plan is sometimes referred to as the partial-payment plan. About the only difference is that some principal payments are made during the period of the loan. These payments reduce the debt and help to protect the borrower and lender in the event of a price decline.

SHOPPING FOR A LENDER

Once you have proved to your own satisfaction that you should borrow and know the essentials about credit, you will be in a position to discuss the possibility of a loan with a lending agency. The lender will ask for considerable information about you and your business. His questions are likely to cover four factors: the purpose for which the money is to be used; the productive capacity of the farm; your experience and ability; and the security you can provide.

An expenditure that is reasonably sure to increase your income or reduce your costs in running your farm business gains an attentive ear from a lender. For a family living luxury, even though it is an accepted item in the area, he will probably suspend judgment or may even respond negatively until shown ample capacity to repay.

From facts you present or from previous information, he will obtain an estimate of the capacity of your farm. A carefully prepared budget based upon good farm records is one of your best tools for convincing your lender, as well as for guiding yourself in reaching your own decision. Always for a long-term mortgage loan, and usually for a short-term operating loan, on a place he has not seen, a lender will want to make an inspection or an appraisal of the farm.

Compare them before you decide.

The clarity and completeness of your application will strongly influence his estimate of your personal ability to manage the farm business and profit from the loan. He may already know your history or he may have to investigate through the references you have given and through other channels. In considering the loan, he needs to know your experience in farming, particularly with the type of business you plan to finance with the credit. The record you have made for prompt repayment of loans in the past will carry a lot of weight with him. If you have been making progress, have been getting ahead in your net worth from year to year, it will help to get this information before him. Finally, the reputation of your family for keeping their spending in line with the family income has an influence. Are you and they willing to make sacrifices in order to meet your promise to pay if income is less than expected?

It is standard business practice to give a real estate mortgage for the purchase of land and usually for land improvements and construction of buildings. Likewise it is the usual thing to give a chattel mortgage for credit used for other capital goods and operating and living expenses. In either case, the lender usually expects the sale value of the mortgaged property to be greater than the amount of the loan. No respected lender has any desire to foreclose, or intention of selling the property to obtain his money except as a last resort. If unforeseen problems arise, the mortgage protects both lender and borrower from seizure of the property by others while they work out a new program for repayment. Where the borrower has some reserve financial strength, a satisfactory solution can usually be worked out. Your net worth statement is an important means of showing your ability to carry through.

Points to Consider in Selecting a Lender

Selection of the lender is one of the most important decisions in obtaining financing. Your success in getting and using credit in your business and in working out any unexpected difficulties may very well depend upon what lender you select. So you, the borrower, will want to investigate the source of your credit just as thoroughly as the lender has looked over you and your farm.

As a general rule, you should contact more than one lender before deciding where to obtain your credit. You will then be in a position to compare the lenders on the following points and make an intelligent decision as to which can most satisfactorily serve your credit needs.

(1) **Character.** Has the lender an established reputation for honesty and fairness?

(2) **Knowledge of and experience with farming.** Can and will the lender spend time helping work out a budget or projection of your business to determine whether it will pay you to borrow, and, if so, when loan funds will be needed and when they can be repaid? The lender must have an understanding of your business in order to help

work out a sound financing program that recognizes the possibility of unfavorable weather and price conditions, and other factors over which you have no control.

(3) **Lending policies.** How has he treated other borrowers? Has he adapted his credit terms to the special needs of modern agriculture? Has the lender been interested enough in the welfare of his borrowers to carry loans during temporary periods of low income? What are his interest charges and other fees? Does the lender permit prepayments and accumulation of an interest bearing "future" or "reserve" payment fund?

(4) **Permanence and dependability.** Will the lender be able to stay with you in poor as well as in good times? Does the lender have a dependable source from which to obtain loan funds, or does the amount of his loan funds decline in poor periods? The lender can't stay with you in poor times if he doesn't have the funds.

Sources of Credit and Their Terms

Considerable variation occurs among lenders in the same general group so terms outlined here should be considered only as a general statement. Specific information can be obtained from individual lenders serving your area.

Short- and intermediate-term loans. These loans generally are secured by a chattel mortgage. Some are made on the signature of the borrower. The amount of the loan depends upon repayment capacity, credit rating, collateral available, financial strength, and the position and policy of the individual lender.

(1) *Banks*—Commercial banks are located in communities in all parts of the country. They are a major source of credit in the area they serve.

(a) Where to apply—At the bank or banks serving your area.

(b) Collateral required—Except for unsecured loans, borrowers usually pledge livestock, crops, and other personal property.

(c) Time required to obtain a loan—From a few minutes for unsecured loans to several days for chattel loans where the security must be inspected and a chattel mortgage prepared.

(d) Interest rates—Vary widely, but for loans of moderate size or larger that are well secured or made to individuals with good credit ratings, rates are usually 5 to 7 per cent. For small loans or those with higher risk, rates of 7 per cent or more are not uncommon.

(e) Length of loan—Usually not to exceed one year. Some intermediate-term loans are made for more than one year. Loans can be renewed if the situation warrants.

(f) Repayment plan—Payments are planned to come due when income is available to meet them, with final settlement or renewal at maturity. Installment loans call for monthly or periodic payments.

(g) Source of loan funds—Deposits, bank reserves generated by monetary authorities, capital and surplus.

(2) *Production credit associations*—These associations are cooperatives formed and operated by farmers and ranchers. Each production credit association has a certain area which it serves and together the associations make credit available to farmers in all parts of the United States.

(a) Where to apply—At the production credit association office or field office serving your area.

(b) Collateral required—Except for unsecured loans, borrowers usually pledge livestock, crops, and other personal property.

(c) Time required to obtain a loan—From a few minutes to several days for chattel loans where a review of the farm operation is desired.

(d) Interest rate—Usually from 5 to 6 per cent on the unpaid balance, depending upon the cost of running the association and how much the association must pay for money. The same rate is charged all borrowers in an association. Some associations add a small charge to cover costs of chattel abstracts, filing, etc. Many associations make savings which are returned to borrowers, thus reducing the cost of their loans.

(e) Length of loan—Most loans are made for one year. Some intermediate-term loans are made for more than one year. Loans can be renewed if justified by conditions.

(f) Repayment plan—Payments are planned to come due when income is available to meet them, with final settlement or renewal at maturity.

(g) Source of funds—Mostly by discounting notes of borrowers with a Federal intermediate credit bank, which obtains its funds primarily through the sales of securities, called debentures, in the investment markets.

(h) Special—Borrowers from a production credit association must become members of and own stock in the association equal to 5 per cent of their loan. Some associations provide loan insurance at cost which pays the loan within certain limits in the event of the borrower's death.

(3) *Farmers Home Administration*—This agency provides loans to individuals who cannot obtain needed credit from other lenders. Usually the FHA borrower has farm training and experience to enable him to farm successfully but has too little collateral because he is just getting started, or has suffered unusually heavy losses from causes beyond his control.

FHA loans are made through local offices which serve specified areas throughout the nation. Funds for direct loans are obtained by an annual appropriation from the U. S. Congress. Funds for soil and

water conservation loans are provided by private investors and the loans are insured by the Government.

There are four types of short- and intermediate-term loans. The first two discussed below are available over the entire country and are intended to meet requirements under usual or customary conditions. The other two are emergency-type loans.

Production and subsistence loans are made for operating expenses including purchase of livestock, feed, seed, and equipment; for refinancing debts; and for living expenses. The part of these loans advanced for annually recurring operating expenses is repayable in one year and the balance may be extended over a period up to five years, and in some cases, up to seven years. The rate of interest is 5 per cent. A mortgage is taken on property purchased with the funds and on other property as necessary to secure the loan. These loans are closely supervised by FHA. The first payment may be deferred until the end of the second crop year in certain justifiable cases.

Soil and water conservation loans are made to pay the cash cost of improvements directly related to soil conservation; water development, conservation, and use; forestation, drainage of farmland, and related measures. These are 4½-per cent loans and may be amortized for a period of up to 20 years. Loans with a maturity of less than seven years may be secured by a first lien on chattels only, while those running for a longer period are secured by the best lien available on real estate. First payment on principal may be deferred to the end of the second crop year; however, an interest payment must be made every year. These usually are non-supervised loans.

Special livestock loans are made to provide emergency credit to established producers and feeders of cattle and sheep for operating expenses, including the purchase of livestock for replacement purposes, where the borrower is unable, temporarily, to obtain credit from other sources. These loans are not available to operators of commercial feedlots. The loans bear interest of 5 per cent and may be amortized over a period of up to three years, depending upon the purposes for which funds are advanced. The best lien obtainable on the crops and chattels, and, when necessary, on the real estate, is taken as security. These loans will not be made after July 13, 1957 unless another extension is granted.

Emergency loans can be made only in areas designated by the Secretary of Agriculture as eligible because of losses due to natural disasters or the inability of other sources of credit to meet the credit needs of farmers and ranchers. These emergency loans can be made for farm operating and living expenses and for building renovation and land reclamation necessitated by natural disaster. Funds advanced for annual operating expenses are generally scheduled for repayment when the principal income from the year's operations normally will be received. Advances for purposes other than annual operating expenses

may be scheduled over longer periods, depending on the repayment ability of an applicant and the purposes for which such advances are made. A mortgage is taken on crops, chattels, or real estate, depending on the purpose of the loan.

In designated counties in the Great Plains area, the Farmers Home Administration has a special credit program designed to help farmers and ranchers make the best use of their land resources. In these counties the emergency loan authorities are being used to supplement the regular loan programs in financing necessary adjustments in farm and ranch operations.

(4) *Merchants and dealers* provide considerable credit by making sales on time payment or on sales contracts. In many cases the charges are considerably higher than if the customer could obtain the money from a conventional lender and pay cash. Moreover, the sales contract may be sold to a conventional lender and thus the customer may end up with a lender he had no part in choosing.

Charges for credit extended by merchants and dealers usually are not stated as so much interest. Where trade-ins are involved, cash customers may be allowed a higher trade-in allowance. Cash customers may be granted a price discount or a larger price discount than the non-cash customer. Occasionally, merchants and dealers have two prices—one for cash and the other for non-cash customers. See page 13 for an explanation of how to compute the cost of loans.

Merchants and dealers usually are more liberal in the amount of credit they will extend than are conventional lenders, but you should keep two things in mind: (1) Too much credit may hurt rather than help. A responsible conventional lender will help you guard against buying too much on credit. (2) Some purchases on time amount to conditional sales contracts and in some cases of default the purchased item can be repossessed without legal action.

(5) *Individuals* make a substantial volume of loans to farmers and ranchers. The borrower and lender often are personally acquainted. An attorney sometimes serves as a go-between. Terms of such loans are arrived at by mutual agreement. It is a good practice to put the terms in writing to avoid later misunderstandings. It is also desirable to have an understanding as to terms of a renewal, if such is contemplated, or in case conditions beyond control of the borrower should make repayment of the loan, as planned, impossible.

(6) *Rural credit unions* are cooperative credit associations owned and operated by members for their mutual benefit. They are a source of agricultural credit in some areas. Small loans may be obtained on the signature of the borrower. A co-maker or collateral generally is required for larger loans. Interest charged usually varies from 6 to 9 per cent. In case of installment loans, the rate usually is 1 per cent per month on the unpaid balance. Many rural credit unions provide,

without extra cost, up to $10,000 insurance against the death or total and permanent disability of the borrower.

(7) *Personal or small loan companies* make a few agricultural loans. The cost usually is high. Farmers and ranchers with a good credit rating usually can obtain credit elsewhere at lower cost.

Long-term loans. These loans generally are secured by a real estate mortgage—usually a first mortgage but a second or junior mortgage may also be used.

(1) *Insurance companies* make loans in many parts of the country.

(a) Where to apply—Insurance company loans may be obtained through some banks, real estate brokers, lawyers, loan companies, and the like, that serve as loan correspondents. Some insurance companies have field men or offices that will accept applications.

(b) Loan amounts—The size of the loan depends upon the appraised value of the collateral as determined by the company, and the loan policy of the company. The maximum loan usually is from one-half to two-thirds of this appraised value.

(c) Time required to obtain a loan—About one week or less if there are no complications.

(d) Interest rate—Usually from 4½ to 5½ per cent.

(e) Length of loan—Usually 5 to 30 years, and in some cases, as long as 40 years.

(f) Repayment plan—Amortized payments generally are made on a quarterly, semiannual or annual basis. Prepayment privileges vary from none to full prepayment at any time when the funds used are income from the collateral. Some companies have a future payment fund plan which permits borrowers, in effect, to make prepayments that can be used later, if needed, to cover current payments.

(g) Source of funds—Primarily premiums paid by policyholders.

(2) *Federal land bank* loans are made through national farm loan associations, which are local credit cooperatives owned and operated by member borrowers. The national farm loan associations own the Federal land banks. Each national farm loan association has a certain area which it serves and together the associations cover the entire country.

(a) Where to apply—At the national farm loan association office serving your area.

(b) Loan amounts—Up to 65 per cent of the appraised normal agricultural value of the farm or ranch, with a maximum of $200,000.

(c) Time required to obtain a loan—Generally it takes from a few days to three weeks, depending upon circumstances in each case. For established borrowers, or in rush cases, the loan can be closed in less than a week.

(d) Interest rate—4½ or 5 per cent. Savings returned to borrowers as dividends reduces this rate.

(e) Length of loan—From 5 to 40 years.

(f) Repayment plan—Amortized payments are made on a semiannual or annual basis. Either the even or decreasing payment plan may be used (see page 17). Prepayments may be applied either directly on the loan or placed in a future payment fund which may be used to meet future payments in case of difficulty.

(g) Source of funds—Sale of consolidated Federal land bank bonds in the investment market.

(h) Special—Federal land bank borrowers must buy stock in their local national farm loan associations equal to 5 per cent of the amount of their loan. By these purchases the borrowers own the NFLA.

(3) *Banks* make some loans on real estate. Some of these loans may be sold to an insurance company after a year or so. Some banks act as a loan correspondent for one or more insurance companies. Banks may also know of individuals who have money to loan on real estate. Since loans by insurance companies and others which may be made by banks are discussed elsewhere, only loans with the bank's own funds are included here.

(a) Where to apply—At the banks serving your area.

(b) Loan amounts—In general, up to 50 per cent and in some cases up to 70 per cent of the appraised value of the collateral depending upon the banking laws in the different states.

(c) Time required to obtain a loan—Usually one week or less, if complications are not encountered.

(d) Interest rate—Usually 4½ to 5 and sometimes 6 per cent.

(e) Length of loan—Up to 20 years, depending on the type of bank and provisions of state laws.

(f) Repayment plan—Loans usually are amortized or partially amortized. Smaller payments may be made during the life of the loan with a lump sum payment of the balance at maturity.

(g) Source of loan funds—Deposits, bank reserves generated by monetary authorities, capital, and surplus.

(4) *Farmers Home Administration* makes two types of "farm ownership" loans to promising family-type farmers and ranchers unable to secure credit at reasonable rates from other lenders. One type is a direct loan from FHA. The other is an FHA insured loan made with funds provided by another lender. Both types of loans may be used for farm purchase, farm enlargement and development, and building improvements.

These loans draw 4½ per cent interest and may run for up to 40 years. Payments are amortized and may be made in advance in good years to cover payments in poor periods.

The direct FHA loans may be made for 100 per cent and the insured loans for 90 per cent of the "certified" value, up to the maximum amount set for the area. Usually a first mortgage is taken on the

real estate. The loans are supervised by the Farmers Home Administration.

(5) *Individuals* make a substantial volume of farm and ranch real estate loans. The lender and borrower may be personally acquainted, or a bank, real estate dealer, or attorney may bring them together. In some cases, one or both may advertise. Loans by individuals may also arise from sale of property where the seller takes a mortgage for part of the consideration to facilitate the sale.

Terms of such loans are arrived at by mutual agreement. As was pointed out in the discussion of short and intermediate loans by individuals, it is important to put the terms in writing to avoid misunderstandings. In the event the loan runs for a short period, an understanding regarding renewal provisions should be included in the agreement.

EXAMPLES OF USING CREDIT

The purpose for giving these examples is to illustrate how points discussed in this circular can be applied in an actual situation. To the extent information is available, analysis of these loans will follow the procedure outlined in the section, "How Much Should You Borrow?" These examples are included solely as illustrations. They are not intended to fit any particular situation or to be typical of farms as a whole. Each individual farmer will need to work through the analysis for his own situation.

A Hog, Beef-Fattening Farm

(Analysis of credit as a tool in buying land)

This farm is located in the western Corn Belt and is operated by a man, his wife, and daughter. The farm family has made reasonable financial progress, indicating that they are good farm and home managers. They own 160 acres and rent an adjoining 160 acres. The question confronting this family is: "Should we buy the 160 acres we are renting?" It is for sale for $28,000.

This family has consistently and successfully used credit including a real estate loan to help buy the 160 acres they own, and chattel loans to buy feeder cattle and for operating expenses. Their indebtedness as of January 1 amounted to $5,477. Most of this amount was used to buy feeder cattle, which have been profitable in the past and which their analysis indicated would be profitable during the current year. They can obtain a 35-year, 4½ per cent even payment plan loan for $26,000 on the entire 320 acres and the balance of $2,000 through an increase in their chattel loan. While successful in the past, a major new use of credit should be examined in the light of the current position of the farm and family, and of the conditions expected to prevail during the period the loan is to be repaid.

Should they borrow to buy or continue to rent the 160 acres? As indicated in the section, "Should You Borrow?", the relative cost involved in buying and renting is one consideration in answering this

question. The family estimates that with average yields and conservative prices for farm produce, the landowner's income from the rented quarter over a period of time in the future will average about $1,600 per year. His share of expenses for seed, fertilizer, and upkeep of fences, plus real estate taxes, are estimated to total about $700 per year, leaving around $900 net income for the landowner. The $900 amounts to 3.2 per cent return on the $28,000 purchase price. With $26,000 borrowed at 4½ per cent and the $2,000 balance at 5 to 6 per cent, renting would be cheaper than owning.

Will this family be able to continue renting the 160 acres? That appears questionable, since it is for sale for what appears to be a reasonable current price. Unless this family buys the farm it will probably be purchased by another farmer to increase the size of his unit, or by an investor. Thus, while renting likely would be cheaper, the uncertainty of being able to continue renting is an important factor in favor of buying. It is likely that if this operator were unable to rent additional land his net income would be substantially reduced.

Will it pay to buy the 160 acres? As indicated above, the landowner's estimated annual net income of $900 would yield a little over 3.2 per cent return on the $28,000 investment, which is less than it would cost to borrow the money. However, there are other considerations in buying versus renting. The owner-operator may be able to increase productivity with security of tenure. It is estimated that by buying the adjoining quarter section and operating the 320 acres this farmer's annual net income will average about $500 above his income if he operates only the 160 acres. Additional interest expense on the loan involved in buying the land has been deducted in estimating the increased net income.

Repayment capacity is another point considered by this family. Semiannual principal and interest payments on the $26,000 loan are $741, making a total of $1,482 each year. The chattel mortgage loan also would have to be paid off over a period of years.

As an aid in judging their debt-paying ability, the family estimates average income and expenses from the 320 acres for a period of years in the future, assuming that they purchase the 160 acres being rented. These figures, together with real estate loan payments, are shown in table 1.

TABLE 1.—An owner-operated 320-acre hog, beef-fattening farm in the western Corn Belt: Estimated average income, costs, and real estate loan payments over a period of years in the future.

Line	Item	Calendar year
1.	Cash income	$20,000
2.	Cash expense, including living expenses and taxes	17,000
3.	Cash surplus	3,000
4.	Real estate loan payments (principal and interest)	1,482
5.	Balance	$1,518

It should be kept in mind that the real estate loan payments in this table include both principal and interest. It is assumed the inventory of machinery, equipment, feed, livestock, etc., and the amount spent for living and taxes, will continue about the same from year to year. The balance shown on line 5 would be available to apply on the chattel mortgage loan. Such repayment is not shown since figures in the table represent an average for a period of years during which the chattel loan gradually would be repaid.

It appears from these estimates of future income and expense that this family would have enough earning capacity to meet payments on the loan to buy the 160 acres.

Do they have sufficient financial strength to assume the larger debt load? This family might well ask: "What would happen if we have only half a crop, take a loss on feeding cattle, and experience other adversity? Would we be able to stand such losses and continue operating?"

As a basis for judgment in answering this question, they first estimate the effect of a drought on their estimated future average income and expenses as was shown in table 1. Since income is affected in years following a drought, income and expenses are estimated for the drought year, and for the following year (table 2). It is assumed only half an average crop will be obtained in the drought year and an average crop in the following year, since two drought years in succession are rare in this area. To aid in visualizing the situation throughout the year following the drought, quarterly estimates are worked out. These estimates indicate when income will be available, when expenses will be incurred, and the cash surplus available to meet loan payments, or the deficit that will need to be borrowed. Particularly in areas and types of farming where much risk is involved, tracing cash receipts and cash expenses through the year is important since the debt load usually is greatest sometime during the year before income from crops or livestock is assured. In such cases, year-end figures alone provide an inadequate basis for judgment.

TABLE 2.—A 320-acre owner-operated hog, beef-fattening farm in the western Corn Belt: Estimated cash income, expenses, and credit position in an assumed drought year and the year following.

	Drought year	Year following drought				
		Jan.-March	April-June	July-Sept.	Oct.-Dec.	Calendar year
Cash income	$19,000	$ 200	$ 200	$5,600	$5,000	$11,000
Cash expenses, including living expenses and taxes	15,000	4,000	2,500	1,500	6,000	14,000
Cash surplus (+) or deficit (−)	+4,000	−3,800	−2,300	+4,100	−1,000	−3,000
Real estate loan payments	1,482	741	0	741	0	1,482
Balance	+2,518	−4,541	−2,300	+3,359	−1,000	−4,482

From a cash income and expense point of view, this farmer would fare quite well in the drought year, since considerable livestock and feed would be carried over from the preceding year. It is assumed cash expenses would drop due to reduced purchases of feeder cattle. In the year following the drought, cash income would be reduced. As shown in table 2, large deficits would be incurred in the first part of the year. The real estate loan payments shown in table 2 include both principal and interest. Interest payments on the chattel mortgage loan are included in cash expenses. Principal payments on the chattel loan are not shown since it was assumed the chattel loan amount will fluctuate as cash is needed, or as cash becomes available to make repayments.

Assets, liabilities, and net worth estimated for the average year, the drought year, and by quarters in the year following the drought are shown in table 3. For purposes of computing the unpaid balance of loans outstanding, it was assumed the "average year" in table 3 would be the year the $26,000 real estate loan was obtained, and that the drought occurred the following year.

TABLE 3.—A 320-acre owner-operated hog, beef-fattening farm in the western Corn Belt: Estimated assets, liabilities, and net worth under average conditions, and after experiencing a drought.

Item	Average year Dec. 31	Drought year Dec. 31	Year following drought			
			March 31	June 30	Sept. 30	Dec. 31
ASSETS						
Real estate	$40,000	$39,750	$39,750	$39,500	$39,500	$39,500
Non-real estate	16,000	10,000	10,500	11,000	8,000	14,000
Total	$56,000	$49,750	$50,250	$50,500	$47,500	$53,500
LIABILITIES						
Real estate loan	$26,000	$25,684	$25,521	$25,521	$25,354	$25,354
Non-real estate loan	4,000	1,482	6,023	8,323	4,964	5,964
Total	$30,000	$27,166	$31,544	$33,844	$30,318	$31,318
NET WORTH	$26,000	$22,584	$18,706	$16,656	$17,182	$22,182

The average year referred to would produce the income shown in table 1; and the drought year and the year following the drought would produce the income shown in table 2. The value of real estate in table 3 is an estimated normal agricultural value, and is assumed to drop slightly due to postponing building repairs.

Analysis of table 3 from the viewpoint of security indicates the loans are adequately protected in the drought year and during the following year. The value of the assets is substantially larger than the loans. This fact coupled with other indicators of financial strength—discussed in the section "How Much Should You Borrow?" and illustrated in this example—indicate this family has fully enough financial strength to stand a drought year in which only half a crop is obtained.

But they wonder, "Do we have the financial strength to stand a cattle-feeding loss and other unusual expenses or loss of income in addition to a drought?" Such losses could reduce their income another $2,500 and increase their chattel mortgage loan approximately $2,500 in the example shown in table 3. Under such circumstances, security for the chattel loan still would be adequate in the drought year but of questionable adequacy in the second quarter of the year following the drought. The chattel mortgage loan would nearly equal the estimated value of the chattel security at that time. However, the situation would not be too critical since other factors influencing financial strength are good. Moreover, principal payments on the real estate loan probably could be deferred, and repairs and living expenses could be reduced a little more if necessary. It appears, therefore, that this family has the financial strength to assume the additional obligation of buying the adjoining 160 acres to increase the size of their farm.

Summarizing this example, we conclude that use of credit to buy additional land will not increase this family's income much over what it would be if they were able to continue renting the adjoining 160 acres. Since it appears unlikely they could continue to rent other land conveniently located, buying the land would make possible a somewhat larger income than would be possible with only the 160 acres they own. From this point of view, it may be profitable for them to buy the land. The analysis also indicates that the family has sufficient repayment capacity and financial strength to carry the added debt load.

A Dairy-Hog Farm

(Analysis of credit as a tool in expanding the livestock program while teen-age boys are at home to increase the labor supply.)

This 247-acre farm is located in one of the more stable parts of the Corn Belt and is operated by a man and wife with two boys, 18 and 17, and a girl, 12. With children in their teens, living expenses are unusually high. On the other hand, the boys will provide a source of considerable additional labor—for a few years. This family is using credit as a tool to help expand and carry a larger livestock program to utilize the additional labor and to increase income.

A little history will help lay a foundation for the example. Information available indicates this farmer worked as a hired farm hand when a young man. Later he started farming as a tenant and in 1943 purchased the 160 acres where the family now lives. Although somewhat hilly, the land is a good silt loam with a clay subsoil. Improvements were poor and run down at time of purchase but have been gradually improved.

The procedure in this example is to show how borrowed funds were used and the effect on income. Data for two years are used: the "current year" and one four years previous when the livestock expan-

TABLE 4.—An owner-operated dairy-hog farm in the Corn Belt: Acres, livestock numbers, assets, liabilities and net worth in two years.

Item	Four years ago	Current year
Acres in farm	160	247
Cropland, acres	140	185
Total cattle, number	43	50
Total hogs, number	31	181
ASSETS		
Livestock	$7,155	$13,710
Other current assets	7,730	8,183
Land and buildings	11,000	17,500
	$25,885	$39,393
LIABILITIES		
Chattel mortgage loan	$ 1,992	$ 7,333
Real estate mortgage loan		
First mortgage	4,800	7,500
Second mortgage	3,000	4,000
	$ 9,792	$18,833
NET WORTH	$16,093	$20,560

sion program began. Table 4 gives selected data about the farm and farm business in these two years.

Livestock, feed, etc., were valued on about the same basis in both years, so changes in dollars reflect actual changes in numbers and amounts. The value of land was increased slightly since considerable improvements were made.

Major changes in this farm during the four-year period included addition of 87 acres, improvements in the land and buildings, and expansion of the livestock enterprises. A major improvement in the farm was modernization and enlargement of the milk house and related equipment. The dairy herd was increased some but the major expansion was in the hog enterprise. Sows for spring farrowing were increased from 26 to 40, and the addition of fall farrowings further expanded the hog enterprise.

Credit was an essential tool in expansion of this farm business. Use of borrowed funds made possible purchase of the additional 87 acres. Expansion of the short-term loan provided the means for increasing the size of the livestock enterprises and made possible purchase of additional feed throughout the year. The amount of short-term credit used during the year increased about 50 per cent in the four years.

Did it pay this family to use borrowed funds? The farmer's annual net income, before family living expenses and income taxes were deducted, increased from $4,044 to $4,619, or $575 in the four-year period. From this we deduct a return on the farmer's increased assets used in the business. His equity in livestock and other current assets increased $1,667. A 6 per cent return on this amounts to $100. The farmer's net equity in real estate increased $2,800, and a 4 per cent return on that amounts to $112. The $100 and $112 total $212. In

other words, this farmer's net income should have increased $212 during the four-year period to pay a return on the larger equity of the farmer (equal to what the money likely would earn elsewhere—usually figured at about the rate of interest paid for borrowing money).[3]

As shown in table 5, the $212 deducted from the $575 leaves $363 additional net income for operator labor and management made possible by the increased use of borrowed funds. The farmer was also able to provide profitable employment for his boys. The point also may be made that during the four-year period the farm price-cost squeeze resulted in a drop in the parity ratio in the United States of about 10 per cent. If the parity ratio had remained the same during the four-year period, the increase in net income likely would have been substantially larger.

TABLE 5.—An owner-operated dairy-hog farm in the Corn Belt: An outline of the procedure followed in estimating the increase in net income which resulted from using more borrowed funds.

Increase in net income, before family living expenses and income taxes		$575
Deduct return on increased net equity of operator:		
$1,667 increase of equity in livestock and other current assets at 6 per cent	$100	
$2,800 increase of equity in the farm at 4 per cent	112	$212
Estimated increase in net income for operator labor and management made possible by increased use of borrowed funds as shown in table 4		$363

Each major use of credit should be examined individually to see if it will pay. Because of space limitations, it is not practicable to include those analyses here. In this case use of borrowed funds to buy additional land and to expand the livestock enterprise both were profitable. Analysis of "will it pay?" to buy additional land is illustrated in the hog, beef-fattening example and analysis of profitability of expanding the livestock enterprise follows the general pattern used in this example.

Repayment capacity was adequate to meet the lender's requirements throughout the four-year period. Analysis of the situation in the "current year" will aid in visualizing what is involved. The first mortgage real estate loan was written on the even payment plan basis for 34½ years at 4 per cent. The second mortgage was written on a decreasing payment plan basis for 20 years at 5 per cent interest. The interest portions of the payments were included along with other production expenses in arriving at net income. Payments on the principal amount to $119.42 in the "current year" for the first mortgage loan, and to $200 per year for the second mortgage loan, or a total of $319.42 for the current year."

[3] The general level of interest rates changes from time to time and may be different from those in effect when this example was prepared, but the pattern of reasoning still applies.

Considering the chattel mortgage, the entire amount of that loan was used for livestock, feed, and operating expenses—items which, with normal production and income, will produce funds to meet repayments. In other words, none of these payments should have to come from net income.

Thus this farmer's repayment capacity required in the "current year" was $319.42, to cover the principal part of the payment on the real estate loans. His net income left after income taxes, living expenses, and allowance for labor of the children was $2,019 in the "current year," and is estimated to average about $1,000 over the next few years. Thus it appears he has adequate repayment capacity.

Financial strength. While our analysis indicates it was profitable for this farmer to use borrowed funds, and that he has adequate repayment capacity, does he have the financial strength to carry such a debt load? Information on assets given above indicates livestock on hand and other chattels were adequate to fully secure the chattel loan throughout the year. The real estate mortgage is relatively large and is larger compared with value of the farm than is normal since the seller of the 87 acres was willing to take a second mortgage to facilitate the sale. Considering the over-all situation, security appears adequate to fully support the line of credit being used in stable periods with average production. However, falling prices and steady to rising costs during the four-year period substantially reduced net income.

Unusual losses may occur if disease strikes the dairy herd or the hogs, if uninsured family sickness strikes, or if other unexpected loss of income occurs. If a disease such as Bang's does strike, marketing dairy cows for beef represents a much greater loss than marketing beef cows for beef because of the difference in slaughter grade.

Although this farm is located in one of the more stable parts of the country, and while dairying is one of the more stable types of farming, this farmer still has need for some financial strength.

Because of the difficulty in arriving at the financial strength needed for individual items, this farmer starts by estimating that a drop in farm income plus needs for uninsured illness and the like will not be more than $3,000 in one year. As already indicated, he estimates that the family's net income left after paying income taxes, living expenses, and labor of the children, will average about $1,000 over the next few years. Thus, if a loss of $3,000 were realized, farm income would lack about $2,000 of covering operating expenses, living expenses, labor of the children, and taxes. In effect, net worth would be reduced $2,000 under the assumed conditions. Consultation with their lender indicates that their financial position would stand such a loss, indicating they have financial strength to carry on with their operation.

Reviewing the analysis, this dairy-hog farmer concludes that the use of borrowed funds is sound for three basic reasons: It enables him

to increase his income; he has adequate income to meet payments; and he has financial strength for the line of credit being used.

A Cattle Ranch

This rancher and his wife have used borrowed funds over a long period of years as a means of providing a larger unit with which to work than would have been possible with only their own funds. During the war and immediate postwar years, they made substantial progress. With good income, operating expenses climbed, however, so when cattle prices dropped net income was considerably reduced. The objective in this example is to examine the rancher's use of credit to see whether it will pay him to continue using borrowed funds, and, if so, whether he has the repayment capacity and financial strength to support his line of credit. We will study the ranch in the "current year" and in the two preceding years, and then use estimates based upon budget projections as a basis for judging whether it pays him to use borrowed funds, and whether he has sufficient repayment capacity and financial strength to carry the amount of credit he is using.

Table 6 gives data on acres owned, cattle numbers, assets, liabilities and net worth for the "current year" and for two preceding years. Some grazing land was used in addition to that which was owned. In compiling the assets section of the table, values per unit or head prevailing in the "current year" were used for all years, so changes in dollar amounts generally reflect changes in physical quantities. An estimated normal agricultural value was used for the land.

This ranch was affected moderately by drought in the first year preceding the "current year." The number of cattle was reduced, machinery and equipment replacement and repair was postponed, and feed stocks were low on November 1, which accounts for the drop in current assets that year. Except for reductions caused by drought, the basic size of this ranch remained about constant during the three-year period. Borrowed funds were used to provide part of the assets and for operating expenses. The amount outstanding usually was smallest at time of the November 1 inventory. The "peak" or largest amount outstanding in each of the three years was as follows: Second year preceding "current year," $24,216; first year preceding, $22,983; and "current year," $24,221.

Does it pay this rancher to borrow? To answer this question, information is needed on average net income produced by the ranch as is, and the average net income which would be produced if no borrowed funds were used.

A budget projection on the basis of data available indicates this rancher's net income will average about $5,000 per year, assuming the borrowed funds are left in the business. If the capital portion of the borrowed funds (funds other than those borrowed for seasonal operat-

TABLE 6.—An owner-operated family ranch: Acres, cattle numbers, assets, liabilities, and net worth for selected years.

Item	Ranch inventory as of Nov. 1		
	Two years ago	One year ago	"Current year"
Ranch, acres	5,240	5,240	5,240
Cows, number	150	119	136
Total cattle, number	288	236	265
ASSETS			
Livestock	$22,680	$18,530	$22,180
Other current assets	9,125	6,880	11,080
Total	$31,805	$25,410	$33,260
Ranch	36,000	36,000	36,000
Total assets	$67,805	$61,410	$69,260
LIABILITIES			
Chattel mortgage loan	$13,100	$12,476	$19,900
Real estate mortgage loan	0	0	0
Total liabilities	$13,100	$12,476	$19,900
NET WORTH	$54,705	$48,934	$49,360

ing and living expenses) are withdrawn it is estimated net income will drop to about $4,500. In other words, this ranch is about as small as can be operated efficiently, and the borrowed funds likely will enable the operator to earn enough additional to pay the interest and increase net income around $500 per year.

Does this rancher have repayment capacity to carry this debt load? The $5,000 net income referred to above is available for living expenses, income taxes, and savings. Information available indicates living expenses and taxes will amount to about $4,500 per year. Funds borrowed for operating expenses are expected to be repaid from current income so $500 would be available to reduce the capital part of the debt each year. Thus, it appears this operator should have enough repayment capacity to reduce gradually the amount of his loan. As income varies from year to year, the amount available for reducing the loan will vary, of course, which raises the question of financial strength.

Does this rancher have sufficient financial strength to support the amount of credit being used? In the area where this ranch is located, it is not uncommon for two drought years to occur in succession or close together. Other losses, or family illness also may be encountered. These circumstances cut income sharply and may cause deficits.

As a basis for judging adequacy of financial strength, a drought on this ranch the year following the "current year" is *assumed.* The first year preceding the "current year" a moderate drought occurred, so the effect of two drought years on the business is shown. The estimated situation in the assumed drought year and in the third year following the assumed drought is shown in table 7.

TABLE 7.—An owner-operated family ranch: Acres, cattle numbers, assets, liabilities, and net worth with specified assumptions.

Item	Ranch inventory as of November 1	
	Assumed drought year	Third year after assumed drought year
Ranch, acres	5,240	5,240
Cows, number	100	140
Total cattle, number	104	240
ASSETS		
Livestock	$11,000	$21,000
Other current assets	$5,000	9,000
Total	$16,000	$30,000
Ranch	36,000	36,000
Total assets	$52,000	$66,000
LIABILITIES		
Chattel mortgage loan	$ 1,000	$ 1,000
Real estate mortgage loan	12,000	17,000
Total liabilities	$13,000	$18,000
NET WORTH	$39,000	$48,000

It was assumed that feed shortages in the drought year would necessitate reducing cattle numbers to 100 young cows and 4 bulls. It was also assumed cattle sold would be thin and prices relatively low due to larger than normal sales. Thus, while the debt would be reduced, the reduction would not be proportional to the reduction in earning and repayment capacity. It was assumed a real estate loan would be obtained to cover the major part of the capital debt.

If the herd was rebuilt by saving heifer calves, about three years would be required for the cow herd to reach 140 head, assuming the two-year-old heifers produced calves. It would take four years before cash income would be up to normal. During this period a cash deficit of about $5,000 would accumulate, assuming living expenses were cut sharply and principal payments on the real estate mortgage were deferred. Thus, by the end of the third year following the drought the debt would total around $18,000. Chattel and real estate security would be adequate at all times. It appears this rancher has enough financial strength to support the amount of borrowed funds he is using.

An over-all review of this example indicates this rancher is increasing his income by using credit, that he has adequate repayment capacity, and that he has sufficient financial strength.

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