



BUSINESS MANAGEMENT IN AGRICULTURE

A joint project of the
Cooperative Extension
Service and Farm Credit

Obtaining and using credit effectively

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Credit

Obtaining and using credit effectively



David M. Kohl

This is one module of the *Business Management in Agriculture* series and is intended to be used with its corresponding videotape. The script may vary from the actual videotape text.

David Kohl was born and raised on a dairy farm in northern New York. He has been on the agricultural economics faculty at Virginia Tech for ten years specializing in agricultural finance. Dave has taught undergraduate courses in farm business management and agricultural finance, and is responsible for a part-time Extension appointment in agricultural finance. He has published nearly 100 articles and two books and has conducted over 250 workshops and seminars in agricultural finance and related subjects to producers and lenders in the United States and Canada.

Kohl has been the recipient of ten major teaching and agricultural service awards including the American Agricultural Economics Association Outstanding Teacher. Dave earned a Ph.D. in agricultural economics from Cornell University, Ithaca, New York, where he currently holds a position as visiting professor.

Purpose

The purpose of this module is to help you:

1. become familiar with the qualities to look for when selecting a lender and associated credit programs that influence borrowing decisions,
2. develop an awareness for the procedures and financial documentation necessary to obtain agricultural credit,
3. understand how to calculate ratios and other guidelines that assist in analyzing the financial performance of your business and
4. become familiar with a systematic approach which uses ratio and nonratio indicators when analyzing the use of agricultural credit.

Videotape script

By David M. Kohl

Sound use of agricultural credit is a two-way street affecting both borrower and lender. At times it may seem like walking a tightrope. This is because an individual who seeks credit must be prepared to demonstrate to the

lending institution that the proposed financing is feasible and is consistent with farm-business and family goals.

To present an overview of the business and gain perspective on the use of credit, we will deal with four primary topics today: selecting a lender, preparing for a credit request, managing the credit and analyzing financial position.

In any borrower/lender relationship, it's essential that the borrower provide understanding of the business through an up-to-date set of financial and production records. Production records would include livestock records such as DHIA for dairy. Financial statements would include a balance sheet and an income statement, as well as historical and projected cash flows. If possible, three to five years of financial and production data is desirable.

On the other hand, it's the lender's responsibility to analyze these documents in a logical and systematic manner. This will result in a timely decision on the borrower's credit worthiness. While good financial management is the primary responsibility of the borrower, both lender and borrower must use sound credit practices.

Selecting a lender

Selecting a lender or lenders is one of the most critical aspects of financial management. A farm operator should shop for credit and investigate many institutions and sources before making a final decision. In doing so, the borrower must be prepared to make judgments as well as to be judged. Here are five major criterion to use in rating the potential quality of the credit service.

First, select a knowledgeable lender who can show understanding of agriculture today.

Agriculture, during rapid technological change, is beset with unique problems and opportunities. The lender must be able to demonstrate up-to-date knowledge of problems, trends and modern agricultural practices specific to enterprise and geographic region. Choose a lender whose track record shows an understanding of its farm customers and exhibits a genuine interest and concern for their welfare and financial progress.

Second, a lender must have experience in agricultural credit and a commitment to agriculture.

In recent years, a depressed agricultural economy has caused some lending institutions to exit agriculture. They have been replaced by new non-traditional institutions that are now offering a wider variety of credit options and services. The borrower, therefore, must carefully examine the lender's farm loan experience. Check their reputations

RESPONSIBILITIES—

BORROWER PROVIDES:

- Production records
- Balance sheet
- Income statement
- Historical cash flow
- Projected cash flow

LENDER PROVIDES:

- Analysis of statements
- Timely decisions

JOINT RESPONSIBILITY:

- Use sound credit practices

SELECT A LENDER WHO:

- Knows and understands agriculture
- Has experience in agricultural credit
- Is open with lending policy and terms
- Has capacity to meet credit needs
- Is service oriented and honest

CREDIT TIPS

- Compare terms with other sources
- Be aware of total credit charges
- Identify hidden credit costs
- Examine fixed vs. variable rates
- Arrange flexible repayment terms
- Look at prepayment without penalty
- Assess action on loan requests

by asking other farmers. Assess the lending institution's commitment to agriculture and service by looking at their track record during periods of adversity. Become acquainted with a person in authority in the institution, as well as maintain a direct link with one or more other persons for information and advice. By doing so, you can monitor the institution's financial stability and general attitude toward agriculture. Remember, just a small shift in senior management strategy can have an influence on an institution's lending policies.

Third, choose a lender who is willing to discuss lending policies and terms and provide prompt action to credit requests.

While investigating a source of credit and related services, compare the terms of credit with other available sources. Be aware that total credit charges are more important than interest rates alone. Hidden credit expenses such as up-front charges and farm loan application and closing fees can add substantially to credit cost. Examine fixed- or variable-rate interest options and determine the associated costs, benefits and risks.

Arrange repayment terms flexible enough to prevent undue hardship in case of special needs or emergencies. Payment schedules should mesh with the anticipated cash flow generation of your farm business. For example, a dairyman may want monthly or quarterly payments, but a cow-calf or grain producer may prefer only one payment per year after the sale of the calves or grain. Investigate the privilege of prepaying without fear of penalty.

Timely action on loan requests should be a high priority in selecting a lender. A delayed credit decision can hinder crop and livestock production schedules which ultimately impact cash flow and profits. Keep in mind, however, that the lender must have adequate information on which to make a sound credit decision.

Fourth, a lender must have the capacity to meet anticipated credit needs.

Agricultural businesses frequently need large sums of capital. This could create a roadblock in the credit process. Be aware that some lenders place limits on the amount of credit they can extend to any one individual or business. Some lenders specialize in different types of credit. Examples would be a PCA with short- and intermediate-term credit and an FLBA for longer term credit. These limits also can occur with FmHA and commercial banks.

Finally, select a lender who has a reputation of honesty and integrity.

We are entering a market-based economy where customer service is essential in doing business. You should find lenders very familiar with and skilled in

financial and production analysis. Periodic visits by the lender to your farm or ranch shows sincerity and concern and enhances the lender's understanding of your business. The lender should explain all services offered in practical and understandable terms.

The lender should have a reputation for honesty. Maintaining confidentiality of information and objectively evaluating a situation (in other words, being able to say yes or no to a credit request and backing the decision with facts) are strong attributes to consider in selecting a lender.

Preparing for the lender

Now that you have selected a lender, the next step is to prepare for the credit request. Here are five tips in negotiating a financial package with your lender.

First, as a borrower you must provide current, accurate financial statements and supporting records.

A current balance sheet with supporting schedules and inventories is essential. A record of earnings (usually an income statement) and a projected cash flow for your business are also needed. If you are anticipating a major change in your business, a three- to five-year projected cash flow period may be required. A good set of farm records showing production plans, short- and long-range goals, and procedures for implementation and evaluation will enhance your ability to secure credit. In approaching a new lender, find out specifically what they want in the way of financial information.

Second, arrange credit in advance. Many lenders don't like surprises. Don't inform your lender of a major decision "after the fact." This only results in destroying trust and credibility and makes future credit more difficult or impossible to obtain.

Third, allow your lender time to review your plans and make suggestions. Many major purchase decisions are made on the basis of emotion. A lender can be a source of sound advice and counsel in reviewing your credit request. Remember, explanation of your goals and plans builds confidence and trust, and strengthens your working relationship.

Fourth, inform your lender of problems and changes. Even the best of businesses may be faced with adversity that may reduce the ability to repay. Inform your lender of changes in plans or unforeseen problems that will interfere with making loan payments. Remember, communication is the key element in the initial request as well as throughout the whole credit process.

Finally, maintain a high level of integrity. If a lender is expected to be honest and aboveboard at all time, then

BORROWERS MUST:

1. Provide accurate financial statements and records
 - Balance sheets
 - Income statements
 - Cash flow
 - Farm records
 - Goal projections
 - Evaluation plans
2. Arrange credit in advance
3. Allow time for review and feedback
4. Maintain open communications
5. Be honest

CREDIT SUCCESS INDICATORS

- Repayment ability and capacity
- Liquidity
- Solvency
- Profitability
- Financial efficiency

THE FIVE C's OF CREDIT

- Capital
- Capacity
- Collateral
- Conditions
- Character

the same attribute will be expected of you, the borrower. Inaccurate information and failure to honor commitments will jeopardize the borrower-lender relationship initially and could last a lifetime.

Managing credit use

Once obtained, a major challenge arises in properly managing the credit in your business. The three basic financial statements—the balance sheet, income statement and cash flow statement—are basic tools used to monitor the financial strength of your business. When compiled and supported by accurate financial information, these tools can provide the support needed for many of the strategies and financial decisions which you will face.

Any successful business, whether it's an agribusiness firm, farm, corporation or small business, must meet certain criteria if it is to be successful over a period of time, particularly if credit is used. A successful business must exhibit strength in the following areas:

1. repayment ability and capacity,
2. liquidity and solvency, and
3. profitability and financial efficiency.

Lenders frequently refer to the five C's of credit which are:

1. capital (referring to your liquidity and solvency),
2. capacity (meaning your repayment ability and profitability),
3. collateral (or minimizing risk to the lender),
4. conditions (for granting and repaying the loan) and
5. character (referring to honesty, integrity and your management ability).

Both lists, though not exclusive, nor in any specific order of importance, provide a systematic checklist that either a farmer or lender can use to assess the financial status of the business.

Any analysis on the use of credit is only as strong as the quality of financial and other information provided. Circumstances such as size and mix of enterprises, costs, values, commodity prices, collateral values, type of business entity and time of year can all affect interpretation. Also, caution must be taken not to base final interpretation on any one factor but rather on a balanced comprehensive approach. In short, consistency is the number one factor in developing any valid analytical process.

We are now going to take an in-depth look at a systematic approach to analyzing credit use using a hypothetical case farm. Our farm belongs to a farm family—a brother and sister and their parents—who now desire to make a major adjustment which requires additional capital. The

brother and sister's names are Ralph and Ruth Rancher, and they farm in partnership with their parents. They are both married and their spouses work off the farm. Together they manage a cash grain operation and their financial situation has been relatively stable in the past. They plan to expand the operation by adding a hog enterprise and they have developed a balance sheet, and past and projected annual income statements. In addition, earnings have been adjusted to an accrual basis.

Although it's the responsibility of the individual doing the analysis to develop measures based on a specific situation, the format that we're going to use here can be useful in developing these measures. The guidelines presented here are based on research and extensive experience in agricultural finance.

Repayment

The first thing we're going to look at is **repayment**. An **annual earnings summary** of past and projected performance can be useful in determining the repayment ability of the business. It also provides information for calculating key earnings ratios to determine the status of the credit use. This is useful in analyzing trends and is very adaptable to computer application. You'll also find this procedure is applicable whether you are analyzing a large commercial agricultural business or a small part-time farm operation.

Appendix Table 1 is a farm and family earnings summary (p. 18). Take some time now to look it over and study the ten items. Have it on hand for this next section.

Earnings summary

Let's proceed item by item and calculate farm and family earnings for the Ranchers.

First, notice the format shows two columns—one for past performance and the other for your projection. Line 1 is a compilation of all farm revenue expressed on an accrual basis. Let's assume that our case farmers, Ralph and Ruth Rancher, show \$200,000 for the past operation and \$350,000 projected for the proposed hog operation.

On line 2, we add any gross non-farming revenue. Here we see figures of \$36,000 past and \$38,000 projected which represent non-farm revenue for the partner's two spouses. We see subtotals for lines 1 and 2 of \$236,000 (past) and \$388,000 (projected).

On line 3, we subtract all farm operating expenses, adjusting accounts payable relating to farm expenses and excluding interest and depreciation. These figures are \$139,000 past, and \$244,000 projected. The resulting

subtotals, \$97,000 and \$144,000, represent revenue available for family living, interest and principal payments, income taxes and new investments.

On line 4, we subtract family living expenses and state and federal income taxes. For the Rancher's it would be \$35,000 past and \$36,000 projected. After this calculation, we get earnings of \$62,000 past and \$108,000 projected available for interest and principal payments on line 5.

Line 6 represents subtraction of all interest and principal payments, including operating and seasonal loan interest. Figures are \$45,000 past and \$70,000 projected.

What you have seen, using the Rancher farm, is a process for determining the earnings available for new investments, risk and uncertainty, showing \$17,000 past and \$38,000 projected (line 7). Now we have a means to calculate three key earnings ratios—earnings coverage percentage (line 8), debt payment percentage (line 9) and operating expense/revenue percentage (line 10).

You'll find that the farm and family earnings summary is also very similar to the capital debt repayment capacity analysis which is often used by agricultural lenders and managers. We've included a copy of this form as Appendix Table 2 (p. 19), which you may want to study later. The capital debt repayment capacity (CDRC) for Ralph and Ruth Rancher has been calculated for you on this form. The important thing to note is the total net margin or bottom line on the capital debt repayment capacity analysis (\$17,000 and \$38,000) is the same as line 7 on the farm and family earnings summary—the amount available for risk and uncertainty. The farm and family earnings summary will be used in the remainder of this module so that the three key ratios mentioned earlier can be calculated and interpreted.

Let's expand on these three measures and discuss the important role each one plays in assessing the condition of credit use for the Rancher family.

Earnings coverage percentage

The earnings coverage percentage, seen on line 8 (Appendix Table 1, p. 18), is a measure used to assess the Rancher's ability to repay debt. It also assesses the risk to the lenders. The earnings coverage percentage is calculated by dividing earnings available for new investments, risk and uncertainty (line 7) by total annual debt payment (line 6) and multiplying the result by 100 [(line 7 ÷ line 6) X 100]. Calculations indicate 38 percent in the past and 54 percent projected. For example, the 38 percent means that for each dollar of debt payments, we have 38 cents to cover new investments, risk and uncertainty.

EARNINGS COVERAGE PERCENTAGE MEASURES:

- Farmer's ability to repay
- Risk to the lender

We're going to use a common traffic signal to indicate relative levels of risk measured by these three indicators. A green light would indicate a small degree of risk, while the yellow light represents caution. A red light would indicate considerable risk and possible problems.

Concerning the earnings coverage percentage, a figure above 25 percent would be considered green, while a yellow light means an acceptable but riskier percentage from 10 to 25. The red light area would be anything under 10 percent. If the percentage is declining or is negative for several years, it's a sign of financial problems. What about the earnings coverage percentage for the Ranchers? It was 38 and 54 percent which would put them in the green-light area.

If a borrower is dissatisfied with earnings performance, or is in a red-light area, there are five basic strategies that can be employed.

The first strategy is to make adjustments to improve total business revenue. This usually centers around improvement in production, a higher price for the product produced or sale of capital assets. Consider an enterprise analysis or marketing plan to help enhance revenue. Sale of capital assets is a short-run strategy in managing credit, and if continued for a long period in large amounts would erode the asset base.

The second strategy to improve revenue is off-farm employment. This strategy, which is employed by the Ranchers, requires any borrower and lender to ask basic questions: Is employment available? What is the potential level of income? What are the associated expenses? How will it affect farm management? How long and how much will the Ranchers have to depend on these revenues to supplement earnings performance of the farm business?

A reduction of business operating expenses is a third strategy to improve earnings. Again, an enterprise analysis focusing on the major expenses of the business is recommended. For crop enterprises, these include chemical, labor and repair costs. Major expenses for livestock enterprises include feed, labor, chemical and repairs.

A fourth and more subtle means of improving earnings is to budget and monitor family-living costs with an eye to reducing them. Frequently, these costs are higher than projected.

A final strategy relates to the economic situation of agriculture in this decade which has given prominence to the restructuring of debt—interest only on loans, or deferment of principal and/or interest. Principal write downs have been used as a strategy to improve bottom line earnings and reduce financial stress. The borrower should

EARNINGS COVERAGE PERCENTAGE

| R Y G | RISK | |
|-------------|----------|--------|
| | High | < 10% |
| | Moderate | 10-25% |
| | Small | > 25% |

DEBT REPAYMENT PERCENTAGE

Measures:

Risk of
repayment
over the
term of
the loan



> 25%

15-25%

< 15%

be aware that these strategies can be detrimental and in the long run may only postpone the final reckoning.

Debt payment percentage

Now, let's move on to the second of the three important measures—debt payment percentage. Credit on intermediate- and long-term assets is usually extended for either a three- to seven-year period or for ten or twenty years. The debt payment percentage measures the risk associated with repayment over the terms of those loans. Repayment, of course, is affected by factors such as weather, prices and technological change. The debt payment percentage is determined by dividing total annual debt payment and interest on operating capital (line 6) by total revenue (lines 1 and 2) and multiplying the result by 100. On the Rancher farm we saw that it was 19 percent in the past $[(\$45,000 + \$236,000) \times 100]$, and 18 percent on the projection $[(\$70,000 + \$388,000) \times 100]$. This indicates that 19 and 18 cents, respectively, of every dollar's worth of revenue generated is being applied to debt service. How serious is this?

A debt payment of less than 15 percent would be relatively safe and in the green-light area; 15 to 25 percent would indicate some degree of risk and would be in the yellow-light area. This is where we find the Ranchers with 18 and 19 percent. A percentage greater than 25 would represent a high degree of risk to both the borrower and lender and would be a red light. Frequently a problem loan occurs when this ratio exceeds 30 percent of revenue.

As in the Rancher's case, if a borrower is expanding or in circumstances of considerable uncertainty, such as a new business or enterprise, this ratio should generally not exceed 20 percent.

Operating expense/revenue

The third and final indicator we will be concerned with is the farm operating expense/revenue percentage.

This measure assesses the operating efficiency of the Rancher's farm business exclusive of debt commitment. The degree of operating efficiency of a business can influence:

1. funds available for annual debt payment,
2. amount available for new investment,
3. amount available for retirement,
4. risk associated with credit,
5. general standard of living and
6. need for off-farm income to supplement the farm business.

Going back to our earnings summary, we see the

operating expense/revenue percentage on line 10. It is calculated by dividing business operating expenses (excluding interest and depreciation) on line 3 by total business revenue on line 1 and multiplying the result by 100.

In the Rancher's case, the percentage was 70 percent in both cases—past and projected—indicating that there was 30 percent remaining for debt service, family living and taxes, and new investments, risk and uncertainty. Should we be concerned about this?

A commercial farm with a percentage less than 70 shows a cost-efficient manager that can handle greater degrees of leverage. If the percentage is in the 70 to 80 range, a yellow caution signal would occur, depending on levels and structure of debt. If this percentage exceeds 80, it's a sign that repayment problems could occur if large amounts of debt are outstanding. Smaller, part-time farmers frequently have higher percentages. These borrowers must monitor this to reduce the drain of off-farm revenues. As with any measure, it is important to monitor any trends and employ strategies to enhance earnings.

In summary, the earnings position of the Rancher farm would indicate a strong earnings coverage percentage with small increased risk over the term of the loan as shown by the debt payment percentage. Business efficiency will remain the same if production and marketing plans actually result in projected annual earnings.

Analyzing financial position

Now that we have done an in-depth analysis of repayment ability, it's time to take a look at another important component—the financial position. Analysis of financial position centers on three basic indicators: liquidity, solvency and overall collateral position. A balance sheet gives us the information for this analysis.

First, let's look at a definition of liquidity. We learned in the module "Analyzing financial performance" that liquidity is defined as the ability to meet short-term obligations as they become due. Often, farms have large net worths but still have difficulty meeting obligations on time. This is caused by poor liquidity.

One important measure of liquidity is the **current ratio**. The current ratio is calculated by dividing current assets by current liabilities. Analysis of the Rancher's situation from Appendix Table 3, line 3 (p. 20), reveals \$100,000 of current assets divided by \$70,000 of current liabilities (remaining principal) for a current ratio of 1.43 to 1.

OPERATING EXPENSE/ REVENUE PERCENTAGE

Measures:

Operating
efficiency
(exclusive
of interest
and
depreciation)

| | |
|---|--------|
| R | > 80% |
| Y | 70-80% |
| G | < 70% |

CURRENT RATIO IS:

$$\frac{\text{Current assets}}{\text{Current liabilities}}$$

$$\frac{\$100,000}{\$70,000} = \frac{1.43}{1}$$

| | |
|---|-------------|
| R | < 1:1 |
| Y | 1:1 - 1.5:1 |
| G | > 1.5:1 |

CURRENT DEBT PERCENTAGE IS:

$$\frac{\text{Current debt}}{\text{Total debt}} \times 100$$

$$\frac{\$70,000}{\$300,000} \times 100 = 23\%$$



< 30%

DEBT TO ASSET PERCENTAGE IS:

$$\frac{\text{Total debt}}{\text{Total assets}} \times 100$$

$$\frac{\$300,000}{\$700,000} \times 100 = 43\%$$



> 70%

30-70%

< 30%

A realistic appraisal of most farm balance sheets would find a 1.5 to 1 ratio relatively strong. A ratio below 1 to 1 would be a sign of possible short-term financial problems. However, enterprise and time of year can affect interpretation.

The **current debt percentage**, calculated by dividing current debt by total debt and multiplying the result by 100, is another measure of liquidity. It shows the percentage of total liabilities that must be paid within 12 months. The higher the percentage of current debt to total debt, the greater the pressure on the business to generate earnings. On the Rancher farm, we will find that \$70,000 of current debt (remaining principal), divided by total debt of \$300,000, gives us a current debt percentage of 0.23, or 23 percent when we multiply by 100. Generally this indicator should be under 30 percent. However, this would vary depending on the mix of debt (long term, intermediate term), size of operation and enterprises, and profitability.

Now let's look at **solvency** which is the ability to cover all outstanding debt by sale of all the business assets based on net market valuation of assets (i.e. contingent tax liability and commissions deducted).

One measure of solvency is the **debt-to-asset percentage**. It is found by dividing total liabilities by total assets and multiplying the result by 100. This percentage looks at the overall financial position of the business and is the inverse of the equity percentage that is sometimes used by lenders. We'll say more about this later. On Appendix Table 3, we see total assets of \$700,000 net market valuation, and total liabilities (remaining principal) of \$300,000.

Dividing the total debt of \$300,000 by total assets of \$700,000, and multiplying the result by 100, we get a debt-to-asset percentage of 43. A percentage less than 30 would be considered quite strong for that measure. Thirty to seventy percent would be interpreted as caution, while more than 70 percent represents considerable risk both to the borrower and lender. Why? Because the borrower has less management flexibility and higher debt commitments on earnings. Also, the chance of insolvency—liabilities exceeding assets—is much greater.

I mentioned earlier that the **equity percentage** is a popular measure of solvency among lenders and that it is the inverse of the debt-to-asset percentage just discussed. This would mean dividing total equity or net worth by total assets, and multiplying the result by 100. Substituting our case farm figures, we see \$400,000 total equity divided by \$700,000 in total assets, or 0.57 times 100 equaling 57 percent. Remembering that our debt-to-asset percentage

was 43, we now see that the two add up to 100 percent and it is truly the inverse. Therefore, an equity percentage of greater than 70 would be desirable, a percentage of 30 to 70 would suggest caution, and a percentage less than 30 would carry much more risk.

As with any measure, however, management level and term of repayment can influence the degree of stress at any equity level.

Collateral position

Finally, let's take a look at **collateral position** and its role as a secondary source of loan repayment capacity. A balance sheet can provide insight about the assets that can be used to repay debts in the event of inadequate earnings, a decline in the value of assets, or emergency situations such as drought and farm or family adversity.

Guidelines will vary depending on the sources of credit and types of assets for which credit is requested. Most lenders are reluctant to lend over 75 percent of the value of land and improvements, 60 percent of the machinery and livestock and 80 percent on current assets. These values exclude any contingent tax liabilities and other costs of liquidation.

Review all of the measures just introduced. Also at this time look at Appendix Table 3 again before continuing with collateral position. Make sure you are familiar with concepts like loan maximums, collateral position and excess reserves.

Let's look at some ideas about collateral position. On Appendix Table 3, line 1 shows the Ranchers have an estimated value on long-term assets of \$400,000, which multiplied by 75 percent loan maximum gives them a collateral position of \$300,000.

On line 2 (intermediate farm assets), the collateral position would be \$120,000 ($200,000 \times 0.60$), with short-term assets (line 3) at \$80,000 ($100,000 \times 0.80$). Total collateral position is established by adding each category (long term, intermediate, and current), which in this case equals \$500,000. By subtracting remaining principal on each loan from borrowing collateral, we can determine the excess reserves available for each component. If emergency credit is needed, Ralph and Ruth have \$150,000 excess collateral position in the long-term area and smaller amounts (\$40,000 and \$10,000) in the intermediate- and short-term areas, or a grand total of \$200,000. Additional credit will only be forthcoming, however, if sufficient debt service capacity from earnings is available. Collateral position is not the primary determinant of access to debt.

PERCENT EQUITY IS:

$$\frac{\text{Net worth}}{\text{Total assets}} \times 100$$

$$\frac{\$400,000}{\$700,000} \times 100 = 57\%$$

| | |
|---|--------|
| R | < 30% |
| Y | 30-70% |
| G | > 70% |

**DECLINE IN ASSET
VALUE:**

$$\frac{\text{Excess reserve}}{\text{Loan maximum}} \\ \text{Value of assets}$$

To maintain a 1 to 1 collateral-to-loan position, Appendix Table 3, lines 10, 11 and 12, show that asset values could decline by 50 percent in the long-term area, and 33 and 13 percent in the intermediate and short-term categories, respectively. To calculate the decline of asset value we take excess reserve, divide by the loan maximum, and divide the result by the estimated value placed on the assets for each classification. For example, in the long-term area, excess reserves of \$150,000 are divided by the loan maximum of 75 percent. The resulting figure, \$200,000, is then divided by estimated value of assets of \$400,000 $[(\$150,000 \div 0.75) \div \$400,000]$. The resulting long-term asset value would indicate values could decline by 50 percent.

Balance sheets can also be useful tools in general credit term management. Any user of credit should be aware of the number of lines of credit used. When numerous sources are used, difficulties can frequently arise in matching payment with income inflows and outflows. General bookkeeping becomes complicated and tracking of security is more difficult for the lender. Consolidation of credit is a key to sound financial management.

Borrowers often ask, "How do I know when I'm getting in over my head or need financial assistance?" One rule in any business is to analyze the amount and status of accounts payable for the business as well as personal accounts. A sign of strong credit management is when average accounts payable are less than 5 percent of revenues for the year. If unpaid accounts exceed 10 percent of revenue, it's a sign of pending credit problems. Any sharp increase in accounts payable, or general upward trend in personal accounts (e.g., credit cards or unpaid bills) should be carefully scrutinized before they get out of hand.

Measuring profitability

I find too often that farmers are chiefly concerned about liquidity and solvency and underemphasize profitability. Profits are important to a farm business in order to support the farm family, to build equity and to service debt. Farm businesses that are very profitable would have a return on money greater than comparable investments in savings accounts and other non-farm investments with comparable risk.

One of the best measures of farm profitability is net farm income using an accrual approach. In the module "Preparing an income statement," we learned that this is calculated by taking total farm revenue and adjusting for inventories and subtracting cash and accrued expenses,

interest and depreciation. You will recall from our study of Appendix Table 1 that our case farm operators had total revenues of \$236,000 and \$388,000 under current and projected operations. Deducting business operating expenses (except interest and depreciation) of \$139,000 and \$244,000 left \$97,000 (past) and \$144,000 (projected) available for family living, interest and principal payments. Now let's assume the Ranchers had \$20,000 and \$45,000 of interest paid, and \$15,000 and \$20,000 in depreciation before and after their major capital adjustment took place. After making the calculations, we find net farm income is \$26,000 past and \$41,000 projected. These figures in themselves are more meaningful when compared to the resources used to generate income. Let's now conclude by looking at two more profitability measures for improved management decisions—percent return on assets or capital investment (ROA or ROI), and percent return on equity (ROE).

First, percent return on capital investment is a means of measuring profitability and capital performance. May I again emphasize this measures return for both the Rancher farm and their lender. It is obtained by taking net farm income of \$26,000 and \$41,000 and adding interest of \$20,000 and \$45,000 because we are also including the creditor's contribution. We must also deduct a management fee including operator and family labor and management of \$17,500 and \$25,000. The management fee is figured at \$7,500 per operator plus 5 percent of total farm revenues. This figure is a composite of various figures used by professional record keeping systems in agriculture. It also includes unpaid family and operator labor.

The resulting figures of \$28,500 (\$26,000 + \$20,000 - \$17,500) and \$61,000 (\$41,000 + \$45,000 - \$25,000) are then divided by total assets or investment. In the Rancher's case, this is \$500,000 and \$700,000 respectively. The \$500,000 of assets were assumed before the major capital investment. So the Rancher's return on capital investment would be 5.7 percent (0.057×100) historically and 8.7 percent (0.087×100) after the capital adjustment was made, assuming projections were accurate.

This figure should be compared to a trend analysis of the Rancher's farm as well as other non-farm investments. In the Rancher's case, the capital adjustment is favorable and can result in a more profitable business if earnings projections are accurate.

Finally, let's look at return on equity. Return on equity measures return only to what the Ranchers have invested in their equity. In this case their lender is excluded. We begin again with the Rancher's net income of

RANCHER'S NET FARM INCOME

| | Before | After |
|-----------------|--------|--------|
| | 1000's | |
| Revenue | \$ 236 | \$ 388 |
| Expenses | - 139 | - 244 |
| Subtotal | 97 | 144 |
| Interest | - 20 | - 45 |
| Depreciation | - 15 | - 20 |
| Net farm income | \$ 26 | \$ 41 |

RETURN ON CAPITAL INVESTMENT (ROA)

| | | |
|--------------------------|--------|-------|
| Net farm income | \$ 26 | \$ 41 |
| Interest | + 20 | + 45 |
| Subtotal | 46 | 86 |
| Mgmt. fee | - 17.5 | - 25 |
| Subtotal | 28.5 | 61 |
| Total capital investment | 500 | 700 |
| % return on investment | 5.7 | 8.7 |

RETURN ON EQUITY (ROE)

| | | |
|--------------------|--------|-------|
| Net farm income | \$ 26 | \$ 41 |
| Mgmt. fee | - 17.5 | - 25 |
| Subtotal | 8.5 | 16 |
| Total equity | 350 | 400 |
| % return on equity | 2.4 | 4.0 |

GENERAL RULES

If return on equity (ROE) is less than return on assets (ROA), borrowed money is not being used profitably.

The higher the capital turnover, the more effectively assets are being used.

\$26,000 before and \$41,000 after the projected investment. Deducting the management fee of \$17,500 and \$25,000 gives them return of \$8,500 and \$16,000 respectively. You'll recall we just calculated the Rancher's net worth was \$350,000 and \$400,000 under current and projected scenarios. Dividing the \$8,500 return by \$350,000 net worth gives the Ranchers a percent return on equity of 2.4 percent (0.024×100) and 4.0 percent (0.04×100) under the projection.

These returns, though 3 to 5 percent lower than on the total investment, are still favorable when compared to historical results. Here's a rule for you: If the return on equity is less than the return on assets, which it is in this case, borrowed money is not being used profitably. Moreover, the Rancher's potential return on other investments must be considered when making their analysis. A farm business can survive in the short run with a small or negative return. However, both borrower and lender must carefully examine the business' long-run potential if it continues low or negative over a long period of time.

Financial efficiency

So far we've applied liquidity, solvency and profitability measures to the Rancher's operation. In conclusion let's also look at an example of a fourth measure—financial efficiency.

One of these measures that can influence profits is the capital turnover ratio. This ratio is indicative of management performance and measures the number of years required for business earnings to equal assets. Traditionally, non-farm businesses turn over capital at a faster rate. This is one of the basic reasons why they can handle higher degrees of leverage. Most farms are capital intensive and frequently take a number of years to turn their capital. We learned in the module "Analyzing financial performance" the general rule that the higher the turnover, the more efficiently assets are being used.

In the Rancher's case, capital historically was turned over at a rate of every 2.5 years (\$500,000 total assets divided by \$200,000 total farm revenues). After the capital adjustment was made, the ratio is projected to be 2 years (\$700,000 total assets divided by \$350,000 total farm revenues). Research finds that crop and cow-calf operations turn over capital every 4 to 7 years, while dairy, poultry, vegetable and horticulture businesses have a lower ratio.

In summary, we have shown that good credit management analysis requires four key elements. The first two

steps are selecting the lender and preparing the credit request. The third step is to analyze and evaluate the financial information and therefore, monitor financial progress. The final step is implementing the necessary strategies to ensure successful use of credit and achievement of sound financial and business goals. Effective application of these four key elements in your farm business operation will put you in a commanding position for obtaining and using credit effectively.

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Appendix table 1

Farm and family earnings summary

Rancher farm

| | Past | Projected |
|------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------|
| 1. Total business revenue | \$ <u>200,000</u> | \$ <u>350,000</u> |
| 2. Plus non-farm revenue | + <u>36,000</u> | + <u>38,000</u> |
| Subtotal | <u>236,000</u> | <u>388,000</u> |
| 3. Minus business operating expenses (excluding interest paid and depreciation) | - <u>139,000</u> | - <u>244,000</u> |
| Earnings available for family living, income taxes, interest, principal payments and new investments Subtotal | \$ <u>97,000</u> | \$ <u>144,000</u> |
| 4. Minus family living expense and income taxes | - <u>35,000</u> | - <u>36,000</u> |
| 5. Capacity available for interest, principal payments and new investments | \$ <u>62,000</u> | \$ <u>108,000</u> |
| 6. Minus interest and principal payments on term debt and interest on operating capital | - <u>45,000</u> | - <u>70,000</u> |
| 7. Earnings available for new investments, risk and uncertainty .. | \$ <u>17,000</u> | \$ <u>38,000</u> |
| 8. Earnings coverage percentage (line 7 + line 6) X 100 | <u>38%</u> | <u>54%</u> |
| 9. Debt payment percentage [line 6 + (line 1 + line 2)] X 100 | <u>19%</u> | <u>18%</u> |
| 10. Operating expense revenue percentage (line 3 + line 1) X 100 (excluding interest and depreciation) | <u>70%</u> | <u>70%</u> |

Appendix table 2

Past and projected capital debt repayment capacity (CDRC)

Rancher farm

| | Past | Projected |
|--------------------------------------------|-----------|-----------|
| 1. Net income | \$ 57,000 | \$ 73,000 |
| 2. Plus depreciation | + 15,000 | + 20,000 |
| 3. Minus capital gains | - 0 | - 0 |
| 4. Minus withdrawals | - 30,000 | - 30,000 |
| 5. Total CDRC from normal operations | \$ 42,000 | \$ 63,000 |

Uses of CDRC

| | | |
|---------------------------------------------------------------------------------------------------------|-----------|-----------|
| 6. Payment of principal on capital debts | \$ 25,000 | \$ 25,000 |
| 7. Plus unfinanced new capital investment (intermediate and fixed assets) | + 0 | + 0 |
| Subtotal of uses | \$ 25,000 | \$ 25,000 |
| 8. Margin from normal operations | \$ 17,000 | \$ 38,000 |
| 9. Plus capital gains | + 0 | + 0 |
| 10. Total net margin (payment on operating losses that are in carryover debt must come from here) | \$ 17,000 | \$ 38,000 |

Appendix table 3

Collateral position and reserve monitoring worksheet

Rancher farm

| | <u>Estimated value</u> | | <u>Loan maximum</u> | | <u>Collateral position</u> | | <u>Remaining principal</u> | | <u>Excess reserve</u> |
|---------------------------------------------------------------------------|----------------------------|---|-------------------------|---|--------------------------------|---|--------------------------------|---|---------------------------|
| 1. Long-term assets | <u>400,000</u> | X | <u>75%</u> | = | <u>300,000</u> | - | <u>150,000</u> | = | <u>150,000</u> |
| 2. Intermediate assets | <u>200,000</u> | X | <u>60%</u> | = | <u>120,000</u> | - | <u>80,000</u> | = | <u>40,000</u> |
| 3. Current assets | <u>100,000</u> | X | <u>80%</u> | = | <u>80,000</u> | - | <u>70,000</u> | = | <u>10,000</u> |
| TOTAL | <u>700,000</u> | | | | <u>500,000</u> | | <u>300,000</u> | | <u>200,000</u> |
| 4. Total borrowing capacity (collateral position) | | | | | | | | | <u>500,000</u> |
| 5. Total borrowed (remaining principal) | | | | | | | | | <u>300,000</u> |
| 6. Total (excess) reserve | | | | | | | | | <u>200,000</u> |
| 7. Excess reserve long-term area | | | | | | | | | <u>150,000</u> |
| 8. Excess reserve intermediate area | | | | | | | | | <u>40,000</u> |
| 9. Excess reserve current area | | | | | | | | | <u>10,000</u> |
| 10. Percent estimated long-term assets can decline in value | | | | | | | | | <u>50%</u> |
| 11. Percent estimated intermediate-term assets can decline in value | | | | | | | | | <u>33%</u> |
| 12. Percent estimated current assets can decline in value | | | | | | | | | <u>13%</u> |

Exercise 1

Video questions

Indicate whether each of the following statements is true (T) or false (F).

- T F 1. Short- and long-term goal explanation is part of the financial package for the borrower to present to the lender.
- T F 2. Application fees and loan closing costs have very little impact on actual credit cost.
- T F 3. Off-farm employment represents a means of improving the repayment ability of a business.
- T F 4. An annual debt payment percentage of 15, in most situations, can be a sign of possible repayment problems over the term of the loan.
- T F 5. An analysis of a borrower's repayment ability can be made on just the earnings coverage percentage.
- T F 6. A debt-to-asset percentage of 20 or a percent equity of 80 would indicate a high degree of leverage for the farm business.
- T F 7. Commercial and small businesses exhibit less leverage, on an average, than farm businesses.
- T F 8. It is possible for a farm business to be illiquid but solvent at the same time.
- T F 9. When a farm business is solvent, it has a negative net worth.
- T F 10. A build up in accounts payable can be a sign of poor cash flow.
- T F 11. Some lenders specialize in agricultural credit while for others, it's only a small proportion of their business.
- T F 12. A farm business that is highly leveraged has more opportunity to refinance debts.
- T F 13. If the interest rate exceeds 10-percent financing, a repayment period of 30 years will have little impact on the borrower's long-run interest expense.
- T F 14. Return on investment measures the return on equity in the business.
- T F 15. The higher the current debt percentage, the more pressure there is on the cash flow.

- T F 16. The current ratio is a good measure of the solvency of the business.
- T F 17. Generally speaking, farms will have a slower capital turnover ratio than a corporate business or small business.
- T F 18. A monthly payment schedule would probably be the most favorable for a cow/calf operator.
- T F 19. A business operating expense/revenue percentage (excluding interest and depreciation) of 60 would indicate a strong cost control manager.
- T F 20. Too rapid a payback of credit can sometimes create liquidity problems.

Exercise 2

Introduction to analyzing agricultural credit

In this module we analyzed the farm operation belonging to the Rancher family as they considered the feasibility of adding a hog operation to their current business. Your assignment now is to work on another farm, a partnership of the Simon and Simon brothers.

Complete Work sheets 1 through 5 using the information below, and analyze and interpret the financial position of this second farm business. Disregard the projection column on Work sheet 1. Some answers may be rounded.

Simon and Simon farm

| | |
|------------|------------------------------------------------------------------------------------------------------------------------------------------|
| \$ 800,000 | Total assets |
| 500,000 | Long-term assets, land and improvements |
| 60,000 | Total current liabilities |
| 260,000 | Total business revenue |
| 50,000 | Total annual debt payments including principal and interest |
| 15,000 | Non-farm revenue |
| 200,000 | Total farm expenses (excluding interest and depreciation) |
| 15,000 | Family living expenses and income taxes |
| 32,000 | Farm interest expense |
| 8,000 | Depreciation expense |
| 70,000 | Total current assets |
| 350,000 | Total farm liabilities |
| 100,000 | Intermediate-term debt (management fee of \$7,500 for each partner plus 5 percent of gross farm earnings). Includes unpaid family labor. |

Loan maximum

| | |
|--------------------------|-----|
| Long-term assets | |
| (land and improvements) | 75% |
| Intermediate-term assets | 60% |
| Current assets | 80% |

Work sheet 1

Farm and family earnings summary

Simon and Simon farm

| | Past | Projected |
|------------------------------------------------------------------------------------------------------------------------|----------|-----------|
| 1. Total business revenue | \$ _____ | \$ _____ |
| 2. Plus non-farm revenue | + _____ | + _____ |
| Subtotal | _____ | _____ |
| 3. Minus business operating expenses (excluding interest paid and depreciation) | - _____ | - _____ |
| Earnings available for family living, income taxes, interest, principal payments and new investments Subtotal | \$ _____ | \$ _____ |
| 4. Minus family living expense and income taxes | - _____ | - _____ |
| 5. Capacity available for interest, principal payments and new investments | \$ _____ | \$ _____ |
| 6. Minus interest and principal payments on term debt and interest on operating capital | - _____ | - _____ |
| 7. Earnings available for new investments, risk and uncertainty .. | \$ _____ | \$ _____ |
| 8. Earnings coverage percentage (line 7 + line 6) X 100 | _____ | _____ |
| 9. Debt payment percentage [line 6 + (line 1 + line 2)] X 100 | _____ | _____ |
| 10. Operating expense revenue percentage (line 3 + line 1) X 100 (excluding interest and depreciation) | _____ | _____ |

Work sheet 2

Liquidity and solvency analysis

Calculate the following measures for the Simon and Simon farm.

Liquidity measures

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}} =$$

$$\text{Current debt percentage} = \frac{\text{Current debt}}{\text{Total debt}} \times 100 =$$

Solvency measures

$$\text{Debt-to-asset percentage} = \frac{\text{Total debt}}{\text{Total assets}} \times 100 =$$

$$\text{Percent equity} = \frac{\text{Net worth}}{\text{Total assets}} \times 100 =$$

Work sheet 3

Collateral position and reserve monitoring

Simon and Simon farm

| | <u>Estimated value</u> | | <u>Loan maximum</u> | | <u>Collateral position</u> | | <u>Remaining principal</u> | | <u>Excess reserve</u> |
|---------------------------------------------------------------------------|----------------------------|---|-------------------------|---|--------------------------------|---|--------------------------------|---|---------------------------|
| 1. Long-term assets | _____ | X | _____ | = | _____ | - | _____ | = | _____ |
| 2. Intermediate assets | _____ | X | _____ | = | _____ | - | _____ | = | _____ |
| 3. Current assets | ===== | X | _____ | = | ===== | - | ===== | = | ===== |
| TOTAL | _____ | | | | _____ | | _____ | | _____ |
| 4. Total borrowing capacity (collateral position) | | | | | | | | | _____ |
| 5. Total borrowed (remaining principal) | | | | | | | | | _____ |
| 6. Total (excess) reserve | | | | | | | | | _____ |
| 7. Excess reserve long-term area | | | | | | | | | _____ |
| 8. Excess reserve intermediate area | | | | | | | | | _____ |
| 9. Excess reserve current area | | | | | | | | | _____ |
| 10. Percent estimated long-term assets can decline in value | | | | | | | | | _____ |
| 11. Percent estimated intermediate-term assets can decline in value | | | | | | | | | _____ |
| 12. Percent estimated current assets can decline in value | | | | | | | | | _____ |

Work sheet 4

Profitability and efficiency feasibility analysis

Calculate the following measures for the Simon and Simon farm.

Profitability feasibility

Net farm income

Percent return on capital investment

Percent return on equity

Efficiency feasibility

Capital turnover ratio

Work sheet 5

Multiple choice questions

Multiple choice. Circle the most appropriate answer. Work sheets 1 through 4 can be referred to for solutions requiring calculations.

1. The current ratio on the Simon and Simon farm would be:
 - A. 1:17:1
 - B. 1:40:1
 - C. 1:56:1
 - D. none of the above
2. The liquidity based on the current ratio on the Simon and Simon farm would be considered:
 - A. very strong
 - B. fair
 - C. very poor
3. The debt-to-asset percentage on the Simon and Simon farm is:
 - A. 56
 - B. 44
 - C. 38
 - D. none of the above
4. The debt-to-asset percentage on the Simon and Simon farm, when compared with other farms, would indicate their level of leverage was:
 - A. high
 - B. moderate
 - C. low
5. The earnings available for risk and uncertainty would be:
 - A. \$10,000
 - B. \$18,000
 - C. \$13,000
 - D. none of the above
6. The earnings coverage percentage for the Simon and Simon farm would be:
 - A. 26
 - B. 36
 - C. 20
 - D. none of the above

7. The earnings coverage percentage for the Simon and Simon farm operation would be considered:
- A. strong—green light
 - B. acceptable but riskier—yellow light
 - C. poor—red light
8. The current debt percentage on the Simon and Simon farm is:
- A. 15
 - B. 24
 - C. 17
 - D. none of the above
9. The current debt percentage:
- A. does influence solvency
 - B. can impact liquidity
 - C. can influence repayment ability
 - D. A and B above
 - E. B and C above
10. The debt payment percentage in the Simon and Simon situation would be:
- A. 18
 - B. 19
 - C. 22
 - D. none of the above
11. The ratio of annual debt payments to revenue would indicate the annual debt payments were:
- A. excessive
 - B. real low
 - C. in a moderate range
12. The operating expense/revenue percentage (excluding interest and depreciation) for the Simon and Simon operation would be:
- A. 77
 - B. 73
 - C. 90
 - D. none of the above
13. An analysis of the operating expense/revenue percentage on the Simon and Simon farm would conclude that:
- A. they were strong cost control managers
 - B. they were very weak cost control managers
 - C. it would depend, based on size, geographic area and enterprise
14. Which of the following statements best describes the Simon's borrowing collateral position:
- A. It could withstand more than a 60 percent decline in long-term asset value.
 - B. Total reserve is more than total liabilities.
 - C. They have moderate collateral in the long-term and intermediate-term areas, but poor in the current area.

15. Percent return on total capital investment would be:
- A. 4.2
 - B. 3.0
 - C. 6.1
 - d. none of the above
16. Percent return on equity would be:
- A. -1.8
 - B. 1.7
 - C. 4.4
 - D. none of the above
17. The return on equity would be:
- A. greater than the return on total capital investment
 - B. less than the return on total capital investment
 - C. greater than a certificate of deposit earning 10 percent
 - D. greater than a certificate of deposit earning 5 percent
18. If the Simon and Simon brothers wanted to improve profitability of their farm business, which of the following would not be a possible strategy?
- A. increase farm earnings
 - B. reduce farm costs
 - C. restructure or renegotiate debt
 - D. obtain off-farm employment
19. The Simon and Simon brothers turn over their assets in approximately how many years?
- A. 3 years
 - B. 2.9 years
 - C. 1.7 years
 - D. none of the above
20. Which of the following statements best summarizes the Simon and Simon brother's financial situation based on the information presented?
- A. strong liquidity, repayment ability, equity position and profitability
 - B. strong liquidity and equity position but weak repayment ability and profitability
 - C. moderate liquidity and equity position, but strong repayment ability and profitability
 - D. moderate liquidity and equity position, with moderate repayment ability measures, but poor profitability

Answer key 1

Video questions

Indicate whether each of the following statements is true (T) or false (F).

T F 1. Short- and long-term goal explanation is part of the financial package for the borrower to present to the lender.

T E 2. Application fees and loan closing costs have very little impact on actual credit cost.

Comment: False. Application fees and loan closing costs can add significantly to the actual credit cost depending upon the amount. A borrower needs to be very aware of these aspects.

T F 3. Off-farm employment represents a means of improving the repayment ability of a business.

T E 4. An annual debt payment percentage of 15, in most situations, can be a sign of possible repayment problems over the term of the loan.

Comment: False. A debt payment percentage of 15 would indicate that 15 cents of every dollar would be going toward debt service which would be a small percentage in most situations and would be in the green-light area.

T E 5. An analysis of a borrower's repayment ability can be made on just the earnings coverage percentage.

Comment: False. The earnings coverage percentage is useful in determining business repayment ability; however, other repayment ability measures must also be analyzed before a final decision can be made.

T E 6. A debt-to-asset percentage of 20 or a percent equity of 80 would indicate a high degree of leverage for the farm business.

Comment: False. A debt-to-asset percentage of 20 or percent equity of 80 would indicate a highly leveraged farm business that is 80 percent owned by the borrower.

- T F** 7. Commercial and small businesses exhibit less leverage, on an average, than farm businesses.

Comment: False. Traditionally the debt-to-asset percentage has been low on farm businesses. Usually they are somewhere in the range of 20 to 30 percent, whereas commercial and small businesses are in the 60 to 80 percent range.

- I F** 8. It is possible for a farm business to be illiquid but solvent at the same time.

- T F** 9. When a farm business is solvent, it has a negative net worth.

Comment: False. A farm business with a negative net worth, where liabilities are greater than assets, would be declared insolvent.

- I F** 10. A build up in accounts payable can be a sign of poor cash flow.

- I F** 11. Some lenders specialize in agricultural credit while for others, it's only a small proportion of their business.

- T F** 12. A farm business that is highly leveraged has more opportunity to refinance debts.

Comment: False. Generally speaking, a business that is highly leveraged has less opportunity to refinance debts because it lacks excess equity to secure additional debt.

- T F** 13. If the interest rate exceeds 10-percent financing, a repayment period of 30 years will have little impact on the borrower's long-run interest expense.

Comment: False. When the interest rate exceeds 10 percent financing over 30 years, rather than 15 or 20 years, it can increase total interest cost substantially—in some cases doubling or tripling the cost!

- T F** 14. Return on investment measures the return on equity in the business.

Comment: False. Return on investment or ROI measures the return on total investment to both the borrower and the lender.

- I F** 15. The higher the current debt percentage, the more pressure there is on the cash flow.

- T F** 16. The current ratio is a good measure of the solvency of the business.

Comment: False. The current ratio is a good measure of liquidity of the business, whereas debt-to-asset percentage is a good measure of solvency.

- I F** 17. Generally speaking, farms will have a slower capital turnover ratio than a corporate business or small business.

- T E** 18. A monthly payment schedule would probably be the most favorable for a cow/calf operator.

Comment: False. A monthly payment schedule would be more desirable for a dairyman than for cow/calf operators who generally receive income irregularly. Other arrangements such as semi-annual or annual payments would be better for cow/calf operators.

- I F** 19. A business operating expense/revenue percentage (excluding interest and depreciation) of 60 would indicate a strong cost control manager.

- I F** 20. Too rapid a payback of credit can sometimes create liquidity problems.

Answer key 2

Introduction to analyzing agricultural credit

In this module we analyzed the farm operation belonging to the Rancher family as they considered the feasibility of adding a hog operation to their current business. Your assignment now is to work on another farm, a partnership of the Simon and Simon brothers.

Complete Work sheets 1 through 5 using the information below, and analyze and interpret the financial position of this second farm business. Disregard the projection column on Work sheet 1. Some answers may be rounded.

Simon and Simon farm

| | |
|------------|------------------------------------------------------------------------------------------------------------------------------------------|
| \$ 800,000 | Total assets |
| 500,000 | Long-term assets, land and improvements |
| 60,000 | Total current liabilities |
| 260,000 | Total business revenue |
| 50,000 | Total annual debt payments including principal and interest |
| 15,000 | Non-farm revenue |
| 200,000 | Total farm expenses (excluding interest and depreciation) |
| 15,000 | Family living expenses and income taxes |
| 32,000 | Farm interest expense |
| 8,000 | Depreciation expense |
| 70,000 | Total current assets |
| 350,000 | Total farm liabilities |
| 100,000 | Intermediate-term debt (management fee of \$7,500 for each partner plus 5 percent of gross farm earnings). Includes unpaid family labor. |

Loan maximum

| | |
|--------------------------|-----|
| Long-term assets | |
| (land and improvements) | 75% |
| Intermediate-term assets | 60% |
| Current assets | 80% |

Work sheet 1 key

Farm and family earnings summary

Simon and Simon farm

| | Past | Projected |
|------------------------------------------------------------------------------------------------------------------------|------------|-----------|
| 1. Total business revenue | \$ 260,000 | \$ _____ |
| 2. Plus non-farm revenue | + 15,000 | + _____ |
| Subtotal | \$ 275,000 | _____ |
| 3. Minus business operating expenses (excluding interest paid and depreciation) | - 200,000 | - _____ |
| Earnings available for family living, income taxes, interest, principal payments and new investments Subtotal | \$ 75,000 | \$ _____ |
| 4. Minus family living expense and income taxes | - 15,000 | - _____ |
| 5. Capacity available for interest, principal payments and new investments | \$ 60,000 | \$ _____ |
| 6. Minus interest and principal payments on term debt and interest on operating capital | - 50,000 | - _____ |
| 7. Earnings available for new investments, risk and uncertainty .. | \$ 10,000 | \$ _____ |
| 8. Earnings coverage percentage (line 7 + line 6) X 100 | 20% | _____ |
| 9. Debt payment percentage [line 6 + (line 1 + line 2)] X 100 | 18% | _____ |
| 10. Operating expense revenue percentage (line 3 + line 1) X 100 (excluding interest and depreciation) | 77% | _____ |

Work sheet 2 key

Liquidity and solvency analysis

Calculate the following measures for the Simon and Simon farm.

Liquidity measures

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}} = \frac{70,000}{60,000} = \frac{1.17}{1} \text{ or } 1.17:1$$

$$\text{Current debt percentage} = \frac{\text{Current debt}}{\text{Total debt}} \times 100 = \frac{60,000}{350,000} \times 100 = 17\%$$

Solvency measures

$$\text{Debt-to-asset percentage} = \frac{\text{Total debt}}{\text{Total assets}} \times 100 = \frac{350,000}{800,000} \times 100 = 44\%$$

$$\text{Percent equity} = \frac{\text{Net worth}}{\text{Total assets}} \times 100 = \frac{450,000}{800,000} \times 100 = 56\%$$

Work sheet 3 key

Collateral position and reserve monitoring

Simon and Simon farm

| | <u>Estimated value</u> | | <u>Loan maximum</u> | | <u>Collateral position</u> | | <u>Remaining principal</u> | | <u>Excess reserve</u> |
|---------------------------------------------------------------------------|-----------------------------|---|-------------------------|---|--------------------------------|---|--------------------------------|---|---------------------------|
| 1. Long-term assets | <u>500,000</u> | X | <u>75 %</u> | = | <u>375,000</u> | - | <u>190,000</u> | = | <u>185,000</u> |
| 2. Intermediate assets | <u>230,000</u> | X | <u>60 %</u> | = | <u>138,000</u> | - | <u>100,000</u> | = | <u>38,000</u> |
| 3. Current assets | <u>70,000</u> | X | <u>80 %</u> | = | <u>56,000</u> | - | <u>60,000</u> | = | <u>(4,000)</u> |
| TOTAL | <u>800,000</u> | | | | <u>569,000</u> | | <u>350,000</u> | | <u>219,000</u> |
| | | | | | | | | | |
| 4. Total borrowing capacity (collateral position) | <u>569,000</u> | | | | | | | | |
| 5. Total borrowed (remaining principal) | <u>350,000</u> | | | | | | | | |
| 6. Total (excess) reserve | <u>219,000</u> | | | | | | | | |
| 7. Excess reserve long-term area | <u>185,000</u> | | | | | | | | |
| 8. Excess reserve intermediate area | <u>38,000</u> | | | | | | | | |
| 9. Excess reserve current area | <u>4,000</u> | | | | | | | | |
| 10. Percent estimated long-term assets can decline in value | <u>49 %¹</u> | | | | | | | | |
| 11. Percent estimated intermediate-term assets can decline in value | <u>28 %²</u> | | | | | | | | |
| 12. Percent estimated current assets can decline in value | <u>negative³</u> | | | | | | | | |

¹ Line 10 solution

$$\frac{\text{Excess reserve } 185,000}{\text{Loan maximum } 0.75} = \frac{\text{Subtotal } 246,666}{\text{Total long-term assets } 500,000} = 0.49 \times 100 = 49\%$$

² Line 11 solution

$$\frac{\text{Excess reserve } 38,000}{\text{Loan maximum } 0.60} = \frac{\text{Subtotal } 63,333}{\text{Total intermediate-term assets } 230,000} = 0.28 \times 100 = 28\%$$

³ Line 12 solution

$$\frac{\text{Excess reserve } (4,000)}{\text{Loan maximum } 0.80} = \text{negative}$$

Work sheet 4 key

Profitability and efficiency feasibility

Profitability feasibility

Net farm income

| | |
|------------------|-------------------------------------------------------|
| \$ 260,000 | Total farm earnings |
| - 200,000 | Total farm expense (before interest and depreciation) |
| - 32,000 | Farm interest paid |
| - 8,000 | Farm depreciation |
| <u>\$ 20,000</u> | Net farm income |

Percent return on capital investment

| | |
|-----------|--------------------------------------------|
| \$ 20,000 | Net farm income |
| + 32,000 | Interest paid |
| 52,000 | Subtotal |
| - 15,000 | Management fee (\$7,500 each operator) |
| - 13,000 | Management fee (5% of gross farm earnings) |
| 24,000 | Subtotal |
| + 800,000 | Total farm assets or capital investment |
| 3 | Percent return on investment |

Percent return on equity

| | |
|-----------|--------------------------------------------|
| \$ 20,000 | Net farm income |
| - 15,000 | Management fee (\$7,500 each operator) |
| - 13,000 | Management fee (5% of gross farm earnings) |
| - 8,000 | Subtotal |
| + 450,000 | Total equity (assets minus liabilities) |
| (- 1.8) | Percent return on equity |

Efficiency feasibility

Capital turnover ratio

$$\frac{\text{Total assets}}{\text{Total farm revenue}} = \frac{\$ 800,000}{\$ 260,000} = \frac{3.08}{1} \text{ or } 3.08:1$$

Work sheet 5 key

Multiple choice questions

Multiple choice. Circle the most appropriate answer. Work sheets 1 through 4 can be referred to for solutions requiring calculations.

1. A Current ratio = $\frac{\text{Current assets}}{\text{Current liabilities}} = \frac{70,000}{60,000} = \frac{1.17}{1}$ or 1.17:1
2. B A very strong position would be 1.5:1 or better, and a very poor position would be 1:1 or less, so we would consider 1.17:1 as a fair position.
3. B Debt-to-asset percentage = $\frac{\text{Total debt}}{\text{Total assets}} \times 100 = \frac{350,000}{800,000} \times 100 = 0.437$ or 44%
4. B A very strong position (low leverage) would be less than 30 percent, 30 to 70 percent would be moderate and more than 70 percent would be considerable risk (high leverage).
5. A See Work sheet 1 key, line 7 for calculations — \$10,000
6. C Earnings coverage percentage = $\frac{\text{Line 7 (Work sheet 1)}}{\text{Line 6 (Work sheet 1)}} \times 100 = \frac{10,000}{50,000} \times 100 = 0.20$ or 20%
7. B A strong percentage (green light) would be 25 or greater, an acceptable but riskier percentage (yellow light) would be 10 to 25, while a risky percentage would be less than 10.
8. C Current debt percentage = $\frac{\text{Current debt}}{\text{Total debt}} \times 100 = \frac{60,000}{350,000} \times 100 = 0.17$ or 17%
9. E Current debt percentage can impact liquidity (answer B) because it looks at the structure of liabilities and it influences the repayment ability (answer C) in that the higher the percentage, the more pressure on cash flow to generate earnings in the next year.
10. A See Work sheet 1 key, line 9 for calculations — 18%.
11. C A debt payment of less than 15 percent would be relatively safe, 15 to 25 would indicate some degree of risk, and a percentage greater than 25 would represent high risk.
12. A See Work sheet 1 key, line 10 for calculations — 77%.
13. C A strong percentage would be less than 70, a moderate percentage would be 70 to 80, and a weak percentage would be more than 80.

14. C You can see from Work sheet 3 key, lines 10 and 11 indicate excess in long-term and intermediate-term areas but, negative reserve for line 12 in current area.
15. B See Work sheet 4 key for correct answer:
 $\frac{24,000}{800,000} \times 100 = 0.03$ or 3% when looking at return to total investment.
16. A See Work sheet 4 key for correct answer:
 $\frac{-8,000}{450,000} \times 100 = -0.018$ or -1.8% when looking at return to equity owners have in business.
17. B Return of negative 1.8 percent is less than 3 percent on total capital investment.
18. D Off-farm employment has no influence on the profitability of the farm business and should be looked at separately.
19. A $\frac{800,000 \text{ total assets}}{260,000 \text{ total farm revenue}} = 3$ years for revenue to equal total assets
20. D The brothers exhibit fair current ratios and equity and moderate repayment ability, but profits are poor, especially the return on equity.

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