Ranch Financial Statements for Management Analysis

The purpose of this spreadsheet is to facilitate an alternative reporting for the farm/ranch financial statements. Statements included are the profit and loss or income statement, the statement of cash flow and the report of the business cash inflow and outflow and balance sheet. The report format also includes select production sales data that facilitates communication of financial data with decision makers. These reports use a format that enhances information communications and clearly show the difference between cash flow and net income or profit reports. Financial ratios are calculated following the Farm Financial Standards to facilitate analysis.

Recording Data

The financial statement data generated by software generating cash reports using the management accounting format provides the data required for development of these reports. Reports can be completed using the accrual adjustment worksheet if adjustments. This requires beginning and closing inventory data. A data sheet provides to record raised breeding stock data using either the base value or the cost capitalization approach. The method used is chosen in the data recording sheet.

The Cash Inflow and Outflow Report should be completed first, including the entry of items names from the chart of accounts for operating expenses. The Financial Data Sheet provides for organization of select cash inflow data and cash outflow for loan payments and capital purchases. Cattle and horse sales data is recorded in these reports.

Once the cash flow and financial data is recorded the Accrual Adjustments for the Fiscal Year must be recorded. This data is generated in the Balance Sheet and supporting schedules including production and units of sales data. Completing the Statement of Cash Flow requires recording cash from investing and financing other activities including contributions and distributions.

It is informative for decision makers, particularly those involved in production management, to observe production values that are associated with livestock sales. This is the reason reporting requires production numbers as well as the net sales values.

Relationships Between Financial Statements and Equity

Figure 1. illustrates the important relationships between the balance sheet and the profit or loss statement and the change in equity. Net income, as generated in the income statement report, is necessary to measure change in equity.

Figure 1. Relationship between the Balance Sheets, Income Statement and Equity

Key Financial Statement Formulas

\[ \text{Equity} = \text{Assets} - \text{Liabilities} \]

\[ \text{Assets} = \text{Liabilities} + \text{Equity} \]

\[ \text{Beginning Equity} + \text{Change in Equity} = \text{Ending Equity} \]

\[ \text{Retained Earnings} = \text{Net Income from Operations} - \text{Interest} + \text{Gain (Loss) in Capital Sales} - \text{Withdrawals} - \text{Distributions} \]
Financial Measures

The last sheet in this spreadsheet has the definitions and targets for the financial performance measures that are calculated. Measures are from a select set of the measures from the Farm Financial Standards Council sixteen measures. Includes are measures for financial position, profitability and efficiency measures (Farm Financial Standards Council).

Ranch Financial Statement Analysis

Analyzing the statements requires an understanding of format, financial terminology, criteria, and measures used. Statement analysis helps identify the business’s strengths and weaknesses and develops strategies for the future. Increasingly, agriculture has been developing standardized financial databases containing benchmarks for comparisons between operations that help identify areas for change. However, the best information is obtained from a track record of the business’s performance. This paper summarizes the steps in financial statement analysis, focusing on understanding, and uses measures and definitions. The aim is to improve understanding of financial statement analysis, as well as to improve communication on the business performance with their accountants, lenders, family members, and owners.

Financial statement analysis begins with accurate financial data presented in a standardized format, which is understood by the analyst. Knowledge of the business organization and goals of the owners are also valuable in understanding and completing the diagnostic interpretation of the statements. When historical, current, and projected financial statements are completed and key ratios calculated, the business financial position and performance can be interpreted. The formats of managerial statements and the criteria and measures used to analyze these statements follow the guidelines developed by the National Farm Financial Standards Council.

Managerial financial statements include: the beginning and ending balance sheets, the accrual adjusted income statement, the statement of cash flows, and the statement of owner equity. The balance sheet reports the financial position of the business on a specific date, including the business’s assets, liabilities, and equity. The income statement is a means by which a business summarizes income and expenses for a certain time period, which measures the profit for a business. The statement of cash flows reports the cash inflows, cash outflows, and net change in the cash of the business from operating inventory and financing activities in a manner that reconciles the beginning and ending cash balances. The statement of owner equity reconciles the beginning and ending owner equity.
Steps in Financial Statement Analysis

The steps in a financial statement analysis are as follows:

1. Determine the objectives of the analysis.
2. Describe the business organization.
3. Prepare financial statements for each business entity and a consolidated statement.
4. Calculate financial ratios and prepare a historical and projected summary.
5. Compare results to comparable businesses if benchmarks are available.
6. Summarize findings with good ratios to help recall specific information when reviewing the analysis at a later date. Strengths and weaknesses should be expressed in a clear, concise manner with proper signals to the reader of limitations of the analysis.

The key financial performance measures are summarized with their interpretation on the page that follows. A financial evaluation cannot be completed without financial statements. What the financial statements measure is stated in the Farm Financial Standards Council Guidelines as follows:

“Financial analysis of an agricultural business must focus on both its present position (called financial position), the results of operations, and past financial decisions (called financial performance).

Financial position refers to the total resources controlled by a business and total claims against those resources at a single point in time. Measures of financial position provide an indication of the capacity of the business to withstand risk from future farming and ranching operations and provide a benchmark against which to measure the results of future business decisions.

Financial performance refers to the results of production and financial decisions over one or more periods of time. Measures of financial performance include the impact of external forces that are beyond anyone’s control (drought, grain embargoes, etc.), and the results of operating and finance decisions made in the ordinary course of business.”

A criterion chosen for analysis by the FFSC includes profitability, liquidity, solvency, and financial efficiency (See Appendix A).
Financial Analysis: The First Quick Overview

Financial statement analysis requires learning the terminology and practice to gain an understanding of what the statements really say. This short paper will demonstrate the basic steps to follow for the initial overview.

The first step of analysis is to obtain a completed set of financial statements for the farm/ranch operation that is being considered. With statements in hand, it is then possible to calculate the financial ratios for the operation. These ratios will provide important clues that lead to a greater understanding of financial health. The Farm Financial Standards Council has published guidelines concerning recommended measures and how they should be calculated. The use of the guidelines is strongly encouraged to insure accuracy and consistency of the financial measures. After this is completed, take a step back, examine the information, and decide if the numbers make sense. Farm/ranch managers and owners will be familiar enough with the operation to realize if any particular piece of information does not conform to expected outcomes. At this point, a deeper analysis of the operation is necessary to determine the underlying causes of any discrepancies.

The questions as to what financial measures should be examined first are dependent on the purpose of the business and the debt situation. The analyst should first focus on a few financial measures that are key to his or her particular business situation. Table 1 presents the four situations that are examined here. The key variables addressed are the production capacity of the farm/ranch, and the debt load carried by the operation. Also listed in the table are the key measures and where they can be found in the financial statements.

With this chart as a guide, the analyst can quickly concentrate on measures that hold a great deal of importance for the operation. In the case of the full-time producer with minor debt obligations (less than 10% debt to equity), the focus of the initial analysis would be the return on assets (ROA) and the change in equity from year to year. See the calculation in Section III. With a major debt load, the full time producer would be interested in return on assets and his repayment capacity. Two measures are presented in the Farm Financial Guidelines that pertain to repayment capacity: term debt and capital lease coverage ratio and capital replacement and term debt repayment margin. Both of these measures, along with return on assets, are defined in Section III.
## Key Financial Performance Measures

<table>
<thead>
<tr>
<th>MEASURE</th>
<th>INTERPRETATION**</th>
<th>BENCHMARK</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Profitability</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Return on Assets</td>
<td>The net income generated by all assets, after labor has been compensated, but before interest payments, divided by total assets.</td>
<td>An index measurement of profitability that indicates the profitability per dollar of assets, thus allowing comparisons over different size firms and different types of businesses/investment.</td>
</tr>
<tr>
<td>Return on Equity</td>
<td>The net income after all labor and interest charges. That is, the residual return to the owner’s investment divided by the equity investment.</td>
<td>An index measurement of the return the owner of the business receives on his/her money invested. Can be compared to rates of return in other investment opportunities such as stocks, bonds, or saving accounts. The rate of return on equity needs to be larger than the rate of return on assets for borrowing to be advantageous to the business.</td>
</tr>
<tr>
<td>Operating Margin Ratio</td>
<td>Calculated as operating margin divided by gross revenues.</td>
<td>The proportion of earnings or revenues that is operating margin and thus available to compensate debt and equity capital. Indicates the operating margins and reflects the ability to generate revenues and control costs in such a way as to generate a profit.</td>
</tr>
<tr>
<td><strong>Liquidity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Ratio</td>
<td>Calculated as current assets (inventories, cash, accounts receivable, etc.) Divided by current liabilities (operating loan payments, accounts payable, unpaid taxes due, this year’s payments on term loans, accrued interest and rent, etc.).</td>
<td>A basic indicator of short-term debt servicing and/or cash flow capacity. It indicates the extent to which current assets, when liquidated, will cover current obligations. It does not predict the time of cash flows during the year or the adequacy of future fund inflows in relation to outflows.</td>
</tr>
<tr>
<td><strong>Solvency</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equity-to-Asset Ratio</td>
<td>Total equity divided by total assets.</td>
<td>The basic leverage of business (i.e., what proportion of total farm assets is owned). Measures the ability of the business to repay all financial obligations if all assets were sold.</td>
</tr>
<tr>
<td><strong>Financial Efficiency</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asset Turnover Ratio</td>
<td>Gross revenues divided by total assets.</td>
<td>Reflects how efficiently farm assets generate revenues, indicates the volume of business generated by the asset base (i.e., the flow of revenue through the asset pipeline). Can show wide variation depending on the proportion of owned land or other assets.</td>
</tr>
<tr>
<td>Operating Expense Ratio</td>
<td>Total operating expenses minus depreciation divided by gross revenue.</td>
<td>The proportion of total revenues that are absorbed by operating expenses.</td>
</tr>
<tr>
<td>Depreciation Expense</td>
<td>Depreciation expense divided by gross revenue.</td>
<td>The proportion of total revenues that are absorbed by depreciation expense.</td>
</tr>
<tr>
<td>Interest Expense Ratio</td>
<td>Total Farm/Ranch interest expense divided by gross revenue.</td>
<td>The proportion of total revenues that are absorbed by interest expense.</td>
</tr>
<tr>
<td>Net Income Ratio</td>
<td>Net farm/ranch income divided by gross revenue.</td>
<td>The proportion of total revenue that remains as net income after all expenses are paid.</td>
</tr>
</tbody>
</table>

* Very enterprise specific. **Source of interpretation, Boehlji, et al.
Table 1. Farm / Ranch Production Capacity, Debt Load, Key Measures, And Location in the Financial Statements

<table>
<thead>
<tr>
<th>Production Capacity</th>
<th>Debt Load</th>
<th>Key Measure(s)</th>
<th>Location of Data in Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full-Time</td>
<td>Minor</td>
<td>Return on Assets</td>
<td>Balance Sheet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Change in Equity</td>
<td>Income Statement</td>
</tr>
<tr>
<td>Full-Time</td>
<td>Major</td>
<td>Return on Assets</td>
<td>Balance Sheet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Repayment Capacity</td>
<td>Income Statement</td>
</tr>
<tr>
<td>Part-Time</td>
<td>Minor</td>
<td>Change in Equity</td>
<td>Balance Sheet</td>
</tr>
<tr>
<td>Part-Time</td>
<td>Major</td>
<td>Repayment Capacity</td>
<td>Income Statement</td>
</tr>
</tbody>
</table>

For the part-time operator with a minor debt load (farm / ranch debt and personal debt), the focus is the historical change in equity. In the case of major debt load, repayment capacity is examined. In both of these cases, interest in the profitability measure has less importance because non-farm income is more important in terms of repayment capacity and income generation.

In order for the business to maintain equity or grow, it must have a positive return on assets (ROA). If the returns are not distributed out of the business, equity will increase. Agricultural returns are low in general, so a 5-8% return on assets is favorable. One would like to achieve a level of return comparable to the cost of borrowed capital. Equity increase is a very good indicator of the financial performance of the business.

After careful consideration of the ratios for the particular situation, the manager or owner can then branch out to a more detailed analysis of the operation. Both financial and non-financial performance measures need to be reviewed. At this point, more complex questions regarding analysis, accounting, or record keeping issues may arise. By focusing on specific financial measures, this gives the analyst a good starting point for looking at the farm / ranch business. After this first pass, he or she can then move onto more complex issues.

More in depth financial analysis issues are now addressed; however, first one must consider two important issues are savings and consumption and confidentially of financial data.
Savings and Consumption Margin (Non-FFS Measure)

The ability of a business to support family living, any capital distribution, and savings for business growth can be measured by the savings and consumption margin. Without non-ranch earnings and change due to valuation equity, this margin can also be a good indicator of the financial sustainability of the business. This margin is for savings retained in the business or taken out of the business (after tax) through distributions for family living and other uses. It is important for ranch owners to be realistic about the saving and consumption margin generated by ranches. With low commodity prices and high costs, which result in low returns on investments, it requires a tremendous amount of equity to sustain a family operation. Absentee landowners can use the savings and consumption margin as an indicator of what they can expect from their operation and sustain the business equity.

Measuring Financial Performance and Risk Bearing Ability

Financial Risk

Business profits are the returns to taking risks. One of the functions of financial statements is to measure the profits from taking risk. Another important function is to provide indicators of the business performance and risk bearing ability. The risk bearing ability is reflected in several measures including:

1. Profitability measured by return on assets (ROA), return on equity (ROE), and change in equity.

2. The business solvency reflected in the equity to asset ratio.

3. The earning on debt relative to its cost that is measured in the relationship of return on equity divided by return on assets or ROE/ROA.

4. Repayment capacity measured by the term debt coverage ratio.

5. Cash flow and profit breakevens for commodities.

The balance sheet shows the size of the business and the amount of equity that, in addition to the solvency and repayment capacity, provides an idea of just what can happen if parts of the business fail to perform for various reasons. Historical financial statements and the magnitude of year-to-year variation will reflect the inherent price and the production risk the business has faced in the past, which is information to think about for the future. Also, knowledge of production efficiency and product cost of production can provide insights into the competitiveness of the business or its potential for improvement.
Reflecting on Financial Risk

Profitability is the key to sustaining business equity and the ability to accumulate equity to cover bad times. Profitability is measured after withdrawals for unpaid family labor and management. The lower the profits, as measured by ROA, ROE, operating margin ratio, and net farm/ranch income, the less margin there is to build equity or sustain losses without causing the business to go insolvent.

An important component of profitability is the level of compensation for owner operator labor and management, and in some cases, distribution of the business. If one combines the net income, the change in asset valuation, and the contributed capital to calculate the savings and consumption margin, it becomes pretty clear what the business can support and sustain in equity. Many farm and ranch businesses are too small in terms of equity and earnings to support a family. Family members and owners need to be informed as to the capacity of the business to provide for living and saving which will also help to judge the risk bearing ability and the lifestyle the business can provide for.

Solvency

The larger the portion of the farm/ranch that is owned (equity), the greater the ability to absorb losses and bear risk. The creditors have first rights to assets of the business if it fails, so owners need to know what losses can be incurred and not put the business in jeopardy. One of the FFS criteria that measures solvency is the equity to asset or percent equity ratio. This is calculated as follows: (Assets - Liabilities)/Assets. Owners should be very cautious of pushing debt to where crop or livestock production failure or a decline in prices would push ownership to less than 70-80% equity.

Leverage Situation Ratio

The amount of debt a business can carry depends on the cost of debt relative to earnings. It is measured in terms of the leverage situation ratio or ROE/ROA. If the ratio is positive and greater than one, the return on debt is greater than its cost. The use of debt is beneficial to the business’s net income. The contrary can be said when cost of debt is greater than its return. As noted, agriculture in general is a low ROA business. This does not mean that there are no profitable investments, this mean that they have to be sought and managed to generate returns greater than costs.

From observing the ROA formula, you will note the interest cost is added back to net income from operations. This is because interest represents a return to the assets owned by the lender, or debt capital. All net returns are divided by all assets irrespective of what the equity is for the business. This has an effect of neutralizing the effects of solvency on the calculation of ROA. In the case of ROE, it is calculated after paying the lender interest, so interest is left in expenses to calculate net income to equity. If ROE is greater than ROA, it means the cost of debt is less than the returns, which leaves more net income to equity, thus a higher return to equity than capital cost. Just recall that a favorable business situation is where return on equity is greater than return on assets and cost of capital, ROE > ROA > COD (COD is the cost of debt).
**Repayment Capacity**

Since much of a business risk bearing ability is associated with the use of debt to cover short falls in earnings or to expand the income generating capacity of the business, the debt level and repayment capacity is a very important measure to monitor when thinking about financial risk. The repayment capacity, measured by the **term debt repayment** ratio, measures the ability of the business to cover all term debt and lease payments (interest, principal, and capital leases). This ratio considers both the farm/ranch business, as well as the contributions non-farm/ranch earnings could contribute to meeting obligations. Monitoring this capacity over time will reflect changes in the business, which again can help establish a basis for future planning.

Accurate accrual adjusted financial statements will tell the story about the business. Proforma statements show what can be expected, in light of anticipation. A “what if” analysis can show potentials under different expectations. Informed decision-makers can reduce the risk of the business and keep lenders informed.

**Financial Sustainability**

Financial sustainability of a business is measured by the ability of the business to maintain equity over time. The ability to maintain or increase equity is determined by the ability of the business to generate a net after tax positive income and cover withdrawals for owner operator labor and management or other distributions from the business. The reason withdrawals and distributions are important in evaluation of business sustainability is because frequently the farm/ranch business must provide income for living withdrawals. Farm/ranch business equity can be sustained by contributions from other business activities or salary earnings. However, to measure sustainability of the business, it is advisable to first evaluate the farm/ranch business then considers the non-business contribution.

Measuring the financial sustainability of a business does not require any new methodology since the business accrual adjusted financial statements clearly show historical financial sustainability. The Farm Financial Standards methodology provides the guidelines for measuring equity change through the use of the balance sheet and accrual adjusted income statement. Projected financial statements can provide information to evaluate future sustainability. Projections are always limited by the ability to forecast future productivity and commodity prices.

**Equity Requirement to Support Debt**

The low rate of return on farm and ranch assets creates a major debt service challenge for agricultural borrowers. When producers make an investment, the returns generated should be greater than the cost (interest rate). In order to pay the cost of capital, the producer must use return from equity or other sources of income to pay the deficit between cost and earnings.
The maximum amount of debt that a business can carry and pay the cost of debt is determined by the rate of return on the added debt, the cost of debt (interest cost), and the rate of return on the equity capital from current income and appreciation in the value of business assets that can make up the short fall between return and cost of debt.

The reality of this situation is also demonstrated in the relation between the cost of capital versus from earnings and appreciation earnings. This can be determined by dividing the return on equity by the return on assets to calculate the leverage situation index (ROE / ROA). With this ratio of less than one, it means the cost of capital is greater than the return on capital. The explanation of this is found by looking at the formulas that calculate ROE and ROA.

\[
ROE \text{ and Appreciation} = \frac{\text{net farm current income } + \text{ appreciation in asset value}}{\text{average beginning and ending equity or (assets } - \text{ liabilities)}}
\]

\[
ROA \text{ and Appreciation} = \frac{\text{net farm current income } + \text{ interest income } + \text{ appreciation in assets}}{\text{average total assets}}
\]

When you calculate ROE, the interest cost is included because it is the cost of the borrowed capital. The interest expense is added back to net income when calculating ROA because the interest expense is the actual return to the assets borrowed. When ROE is greater than ROA, the returns are greater than the interest cost.

When calculating the Farm Financial Standards measures of ROA and ROE, the appreciation of assets is not included. Here the appreciation is included here to demonstrate the maximum potential debt the business can carry. Appreciation can only be captured if the assets are sold.

**Cash Flow**

During periods of low commodity prices, meeting cash flow requirements can be a serious problem. The statement of cash flow summarizes the business cash flow into the following areas.

Cash Flow from Operations, Investing, and Financing

This information shows where cash flows are generated and where they are used.

It is highly recommended that in periods of tight cash flow that a monthly cash flow budget be developed. This projection should reflect the cash flow consequence of the production, marketing, and financing plan.

The projected cash flow should compare projected to actual cash flow to help manage cash flows and improve projection planning.
Short Term Repayment Capacity

The repayment capacity is useful for business analysis. Also, the business should be evaluated in terms of short-term liquidity using the current ratio or working capital. If potential problems in meeting short-term obligations are observed, a monthly projected cash flow should be developed which combines a production, marketing, and financial management plan.

Profitable Cash Flow and Price

Developing marketing plans that incorporate the financial statement information analysis can identify risk potentials, as well as assist in determining when pricing opportunities will cover cash flow and profit targets.

Positive Cash flow would involve determining cash operating expenses, interest payments, family living withdrawals, income, social security taxes, and principal payments.

The cash flow requirements would then be allocated between enterprises and allocated cash requirements divided by the amount of the commodity produced.

A similar approach would be used in determining a commodity profit determination. However, the profit analysis includes depreciation, but not principal payments. Principal payments are not costs, but actually represent a reduction in liabilities or increase in equity.

Operating Ratios

For ongoing farms and ranches, the operating ratios are extremely valuable in measuring efficiency. Operating ratio will differ a great deal between types of operations and enterprise. It is important when having benchmark data to compare similar operations.

Net income margins improve as cost effective production improves, as will ROA and ROE. Efficient use of capital resources increases the turnover ratio; thus, the capital requirements for dollars of revenue generated are reduced. Farm and ranch accounting systems need to be organized to do enterprise and “cost center” accounting to measure unit cost of production for each product produced.

Total operating expenses includes the total cash expense plus that accrual adjustments and depreciation.

Review of ratios provides an understanding of why high operating cost businesses do not have margins for net income. Excess machinery and vehicles will result in high depreciation. Excess high cost debt raises interest cost, and, again, little is left for net to capital.

The best uses of these ratios are over time with the same business to monitor improvement or determination of Net Farm/Ranch Income.
A great deal of data is required to extradite good benchmark data to serve as a guide to judge these performance maneuvers, as they will differ between different enterprises and production systems. Producers are encouraged to participate in efforts that are developing benchmark databases to attain comparative information.
Appendix A: Breeding Stock Accounting

Accounting for breeding stock presents challenges that must be addressed to meet management and tax informational needs. Under IRS cash tax reporting raised breeding stock costs are expensed in the year incurred. Costs are not depreciated so raised breeding stock has a zero basis when sold or there is death loss. The net value raised breeding sales is capital gains for IRS tax purpose. This approach does not allow for matching of revenue and expenses nor valuation on breeding stock inventory that are not included on the balance sheet because their IRS cost basis in zero. You can have a herd of raised breeding stock and a zero value on the balance sheet when you have an IRS based balance sheet. Worthless information!

In contrast to tax reporting, managerial accounting (MA) would handle raised breeding stock using the same approach as the purchased breeding stock. The “cost” of raising a replacement until she reaches the breeding cow category would be considered the basis that depreciation would be calculated for.

For purchased breeding stock the “original” purchase cost is considered the basis for depreciation. For MA, using a straight-line (book-value) depreciation method to account for both raised and purchased breeding stock would allow for more accurate and less distorted financial statements.

For MA purposes, the raised breeding stock uses the same approach as the purchased breeding stock as opposed to just cash-based tax IRS reporting that distorts information used of management purpose. Two alternatives were chosen by the FFSTF including the base value approach were replacement cost is estimated and the capitalization approach where the accounting system is used to record costs for raised breeding stock.

Base value Raised Breeding Stock

Valuation for raised breeding stock will cover the time period from weaning until the heifers are considered bred to enter the breeding cow category. Income is accounted for equal to the base value of the quantity transferred in the raised replacement stock and the increase in the base value of the quantity transferred into raised breeding stock. When replacements are held at weaning they are given a base value that approximates the cost of production to weaning. This is recognized in the income statement as a matching of current year expenses. An increase in base value is recognized when replacements move into the breeding herd. This recognizes the matching of increase in income matching costs to grow and breed the replacement heifers before the move into the breeding herd. The gain and loss from the raised breeding stock is calculated by subtracting the base value from the net sales revenue realizes when the breeding stock is sold. Transactions occur for cull sales, culling or death loss. The base value is shown on the balance sheet the end of the year they are designated as raised breeding cows. The raised breeding stocks are carried on the balance sheet at base value giving a much useful base of determining value of assets and equity.
**Cost Capitalization for Raised Breeding Stock**

Using the cost capitalization approach, also referred to as the accumulated cost or full cost absorption approach, requires the rancher to capitalize the accumulated cost of raising the replacement animal. In other words, the entire accumulated cost associated with pre-productive expenditures up until that particular animal is placed into service. For example, the accumulated cost of a weaned heifer in the cow-calf phase would be added to the additional cost of maintaining her until she moves into the breeding cow category.

Once the animal enters the breeding herd, the producer can claim an annual depreciation expense relative to the capitalized costs, the estimated useful life and the salvage value of the raised breeding stock.

When the capitalization approach is used, raised breeding stock accounting is done using the same methodology described for purchased breeding stock. Both types of breeding stock are now considered depreciable assets and are consistent with the generally accepted accounting principles (GAAP). An annual depreciation expense is assigned to both types of breeding stock. Accumulated depreciation will be kept throughout the assets’ economic useful-life and these figures will be used to determine the capital gains (losses) and costs of goods sold when the animal is sold or disposed from the herd. The only revenue recognized would be the gain or loss when the replacement is culled from the breeding operation.

**Management Accounting Summary for Raised Breeding Livestock**

<table>
<thead>
<tr>
<th>Accounting Method</th>
<th>Replacement Valuation</th>
<th>Recognized Annual Costs</th>
<th>Annual Revenues</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAAP Accounting Cost Accumulation</td>
<td>Accumulated Cost - Accumulated Depreciation</td>
<td>Depreciation</td>
<td>Gains and Losses on Sales of Culled Breeding Stock</td>
</tr>
<tr>
<td>FFSC Base Value</td>
<td>Estimated Cost is Base Value</td>
<td>Current Expense Matched by revenue</td>
<td>Change in Base Value Gains &amp; Losses on Sales of Breeding Stock</td>
</tr>
</tbody>
</table>


Appendix B: Farm Financial Standards Task Force (FFSTF)

Recommendations Farm Financial Standards Performance Measures

In the late 1980s, the Agricultural Bankers Division of the American Bankers Association put into motion a project to standardize financial reporting and record keeping in response to the farm financial crisis. This organization, now known as the Farm Financial Standards Council (FFSC), was made possible by the coming together of a national group of academicians, lenders, accountants, consultants, and regulators. The FFSC first published its recommendations in 1991, and the volunteer organization continues to work to refine and enhance the Farm Financial Standards (FFS) guidelines. The latest was published in 1997. The FFSC continues to work with commodity groups to adjust guidelines to address management accounting needs. One of the focuses is on total unit cost (TUC). One deviation used here is including compensation for owner operator labor and management compensation in operating expenses. In the 1997 guidelines this was for a sole proprietorship this compensation was treated as a cash withdrawal. TUC are not comparable between business organizations if owner compensation is not included in operating expenses.

The purpose of this section of the manual is to present the data requirements and formulas necessary to calculate the FFS chosen measures once the financial statements are assembled. The specific financial statements required to generate this data for the fiscal year include: (1) beginning and ending year balance sheets, (2) an accrual adjusted income statement, (3) statement of cash flows, and (4) schedules of loan and lease payments.

The financial position and performance measures recommended by the FFSC are as follows:

Liquidity
1. Current Ratio
2. Working Capital

Solvency
3. Debt/Asset Ratio
4. Equity/Asset Ratio
5. Debt/Equity Ratio

Profitability
6. Rate of Return on Farm Assets
7. Rate of Return on Farm Equity
8. Operating Margin Ratio
9. Net Farm/Ranch Income

Repayment Capacity
10. Term Debts and Capital Lease Coverage Ratio
11. Capital Replacement and Term Debt Repayment Margin
Financial Efficiency

12. Asset Turnover Ratio
13. Operational Ratios
   (a) Operating Expense Ratio
   (b) Depreciation Expense Ratio
   (c) Interest Expense Ratio
   (d) Net Farm Income from Operations Ratio

Conclusion

Financial measures are not a substitute for informed judgment. Financial measures are simply a convenient way to evaluate large amounts of financial information and enable the user to compare the financial position and financial performance of an individual firm over time and to other firms within an industry.

Advice for users of financial measures:
1. Financial measures help in asking the right questions, but they do not provide answers.
2. Judgment and common sense should be linked to informed application of formulae.
3. Be selective in the choice of financial measures. Different measures are appropriate in different industries or enterprises.
4. A benchmark is needed to assess a firm's financial performance and financial position. It is useful to compare financial measures with the firm's own measures from earlier years. While it is also useful to compare a firm's measures against other firms in the same industry group, be sure to compare "apples to apples" and "oranges to oranges."
5. Financial measures derived from incomplete or poorly prepared financial statements (balance sheets and income statements) are usually misleading and will frequently lead to bad business decisions by the owner and bad credit decisions by the lender.

Recommendations

Where appropriate, the following financial measures are recommended for use by agricultural producers, agribusinesses, and financial institutions. These financial measures adequately measure financial position and financial performance. Explanations of individual measures are presented to aid in understanding the use and limitations of the measures. All financial measures need not be calculated for every situation--the situation may not call for all financial measures, and the accounting information may not be available to calculate all financial measures. Finally, this list of financial measures is not exhaustive; and the user may calculate additional measures, if the information is accurate and the ratios provide more insight.
Formulas Recommended Farm Financial Standards Measures Are as Follows:

Formulas pertain only to the farm/ranch business and do not include non-business assets, liabilities, or income except when considering repayment capacity.

Liquidity

1. Current Ratio:
   \[
   \frac{\text{Total current farm/ranch assets}}{\text{Total current farm/ranch liabilities}}
   \]

2. Working Capital:
   \[
   \frac{\text{Total current farm/ranch assets}}{- \text{Total current farm/ranch liabilities}}
   \]

Solvency

3. Debt/Asset Ratio:
   \[
   \frac{\text{Total farm/ranch liabilities}}{\text{Total farm/ranch assets}}
   \]

4. Equity/Asset Ratio:
   \[
   \frac{\text{Total farm/ranch equity}}{\text{Total farm/ranch assets}}
   \]

5. Debt/Equity Ratio:
   \[
   \frac{\text{Total farm/ranch liabilities}}{\text{Total farm/ranch equity}}
   \]

Profitability

6. Rate of Return on Farm/Ranch Assets:
   \[
   \frac{(\text{Net farm/ranch income from operations} + \text{Farm/ranch interest expense})}{\text{Average total farm/ranch assets}}
   \]

7. Rate of Return on Farm/Ranch Equity:
   \[
   \frac{\text{Net farm/ranch income from operations}}{\text{Average total farm/ranch equity}}
   \]

* At the Fin Analysis for QuickBooks Pro spreadsheet, Net Farm Income from Operations and Financing is being used instead of Net Income From Operations.
8. Operating Margin Ratio:
   \[(\text{Net farm/ranch income from operations} + \text{Farm/ranch interest expense}) / \text{Gross revenues}\]

9. Net Farm/Ranch Income: Net farm/ranch income (NFI) is calculated by matching revenues with expenses incurred to create those revenues, plus the gain or loss on the sale of farm/ranch capital assets.

Repayment capacity
10. Term Debt and Capital Lease Coverage Ratio:
   \[(\text{Net farm/ranch income from operation}* + \text{Total non-farm/non-ranch income} + \text{Depreciation/amortization expense} + \text{Interest on term debt} + \text{Interest on capital leases} - \text{Total income Tax expense}) / (\text{Annual scheduled principal and interest payments on term debt} + \text{Annual scheduled principal and interest payments on capital leases})\]

11. Capital Replacement and Term Debt Repayment Margin:
   \[(\text{Net farm/ranch income from operations}* + \text{Total non-farm/non-ranch income} + \text{Depreciation/amortization expense} - \text{Payment on unpaid operating debt from a prior period} - \text{Total income tax expense} - \text{Principal payments on current portion of term debt} - \text{Principal payments on current portion of capital leases} - \text{Total annual payments on personal liabilities (if not included in withdrawals)}) = \text{Capital Replacement and Term Debt Repayment Margin}\]

* At the Fin Analysis for QuickBooks Pro spreadsheet, Net Farm Income from Operations and Financing is being used instead of Net Income From Operations.
Financial efficiency

12. *Asset Turnover Ratio:*
   Gross revenues / Average total farm/ranch assets

**Operational Ratios:**

13. *Operating Expense Ratio*:
   (Total operating expenses - interest expense
   - Depreciation/amortization expense)
   Gross revenues

14. *Depreciation Expense Ratio:*
   Depreciation/amortization expense
   Gross revenues

15. *Interest Expense Ratio:*
   Total farm/ranch interest expense
   Gross revenues

16. *Net Farm/Ranch Income From Operations Ratio:*
   Net farm/ranch income from operations
   Gross Revenue

**Non FFSC Measures**

*Change In Equity =*

*Leverage Situation = (ROE/ROA)*

*Consumption and Saving Margin*

(Net Income after income tax and extra ordinary item +
 change in equity due to valuation equity + change in equity
 due to contributed capital)
* At the Fin Analysis for QuickBooks Pro spreadsheet, *Total Operating Expense Including Cost of Goods Sold* is being used instead (*Total Operating Expense – interest expense*).

** At the Fin Analysis for QuickBooks Pro spreadsheet, *Net Farm Income after Operation and Financing Cost* is being used instead of *Net Income From Operations*.

**Glossary of Select Financial Terms**

**Balance Sheet** is a financial statement that shows the financial conditions of the business at a particular point in time. It is a list of assets and liabilities (what the business owes) and equity (what the owner owns).

**Base Value** methodology is used to value replacement heifer when costs are not capitalized. The base value is an approximation of the cost of raising the breeding animal. This base value is used to determine the cost basis value of the animal and it is used to determine the amount of revenue to recognize from raising the breeding animal.

**Capitalized Value** is an alternative method of accounting for raised replacement heifers. The cost of production is recorded in the accounting system. The accumulated cost is the valuation of the replacement. This value is then depreciated over the life of the replacement. This method provides the most accurate measure of replacement cost. However, the method does require measuring replacement cost and a separate raised replacement depreciation schedule when cash based IRS tax reporting is used. Capitalizing cost reduces cost rather than increasing revenue as done when the base value method is used.

**Cash Interest Expense** is the amount of actual cash that is paid out as interest.

**Depreciation** is the allocation of the purchase price of a capital asset over the useful life of the asset.

**Equity** is the difference between total assets and total liabilities. This gives an indication of the dollar amount actually owned by the operator, and represents the capital base available to handle adversity.

**Gross Revenue** is a measure of accrual farm/ranch receipts plus the value of farm/ranch products consumed on the farm/ranch.

**Net Accrual Income** is the revenue earned minus the expenses incurred during the operating year including the interest expense without regard to the exchange of cash. Net income is calculated after accounting for family living withdrawals (owner labor and management) and reflects the enterprise contribution to total farm or ranch income. For operations that pay salary and wages, this cost is included in operating costs. This is a pre-tax net income and is not equal to IRS taxable income.
Net Cash Flow from Operations is the amount of cash that is available after cash operating expenses are subtracted from cash operating income.

Profit or Loss or Income Statement is an accrual-adjusted statement that is a summary of revenue and expenses for a certain period of time. The profit or loss statement is used to help analyze the financial performance, i.e. profitability, of the total business.

Profitability is the ability of the business to generate income in excess of expenses. It is expressed as the net returns to resources used in production.

Retained Earnings is a measure of the real growth in the farm business and is the change in net worth adjusted for inflation (deflation) in asset values.

Statement of Cash Flows is a financial statement that provides a summary of the business' cash effects of producers operating, investing and financing activities. All cash movements in and out are summarized. This statement is particularly valuable in reconciling the cash movements in the business.

Total Interest Expense is the amount of interest expense that has been paid plus an adjustment for the change in accrued interest.

Total Operating Expense is the sum of the direct and indirect operating expense plus/minus the associated accrual adjustments. It does not include interest expense.

Unaccounted Cash Withdrawals is the residual value in the statement of cash flows after all revenue and expenses are entered. It is used as a check figure. Large or negative values indicate that either an expense or revenue item may have been missed.

Reference: