



# CALCULATING AND INTERPRETING FINANCIAL RATIOS

## to Gauge Ranch Business Health and Guide Management Decisions

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While most ranchers state that profit is not their main motive for ranching, a ranch that is profitable is more likely to be sustainable over time. Financial ratios are a tool that can be used to gauge the health of the business and gain insight to guide management decisions.

This bulletin describes key indicators of liquidity, solvency, and income that can be calculated from standard financial statements prepared by an accountant or financial professional employed by the ranch.

While ratio analysis can provide a powerful approach to business management, it is important to remember that no single ratio provides all the information necessary to make good decisions. And whether a ratio is at the level you want or not, checking it once shouldn't mean you are done watching that number. Finally, ratios are merely information. *You* have to decide what, if anything, needs to be done to address potential problems in the business.

### **Liquidity**

Liquidity is a short-run concept and can be defined as the ability of a ranch to cover short-term obligations from normal operations – usually commitments within the business year. Measures of liquidity tend to come from the balance sheet.

One of the first ratios many people look at is the **Current Ratio**, or the ratio of current assets to current liabilities. Assets are property owned by the operation, and liabilities are the financial obligations of the operation. The term “current assets” is generally applied to assets that are expected to be sold or used within a year, and “current liabilities” are debts that are due within a year.

Any value for the Current Ratio over 1 suggests the ranch is liquid, with larger numbers suggesting greater liquidity. Values under 1 suggest the ranch is not able to cover its short-term debts with current assets. Therefore, any time the current ratio is less than 1, there is cause for alarm. A current ratio above, but near, 1 suggests the ranch has just enough current assets to cover current liabilities and may not be able to withstand any negative shocks to the business.

It is easy to fall into the trap that “bigger is better” when looking at the current ratio, but if this value gets much above 2 or 3, there may be opportunities to better utilize current assets (for example, investing



cash in non-current assets such as breeding stock or range improvements).

As this is a ratio, you may want to compare your value with that of other similar ranches. Be aware, however, that many factors can influence this number, such as resource base and years in operation. It is more useful to track this number over time for your own business and work toward improving it. Generally, you would want to see this value rise over time, but remember, too large a value might suggest you are overlooking potential opportunities for your business. If values are declining over time, this could be an indication the business is starting to take on too many liabilities and could have trouble in the future if there is a downturn.

**Working Capital** is simply current assets minus current liabilities. This ratio measures the amount of money that would be left if all current assets were liquidated and all short-term liabilities fulfilled. In other words, this is the amount of current assets available to purchase additional inputs, make investments, pay employees, or withdraw for living expenses. If the current ratio is greater than 1, this will be a positive number.

Knowing how much working capital you have can help guide potential investment decisions, because then you know how much you can spend or will need to borrow to make changes to your operation. As this is a monetary value, it is difficult to compare with other operations, therefore the most meaningful comparison is with your own ranch over time.

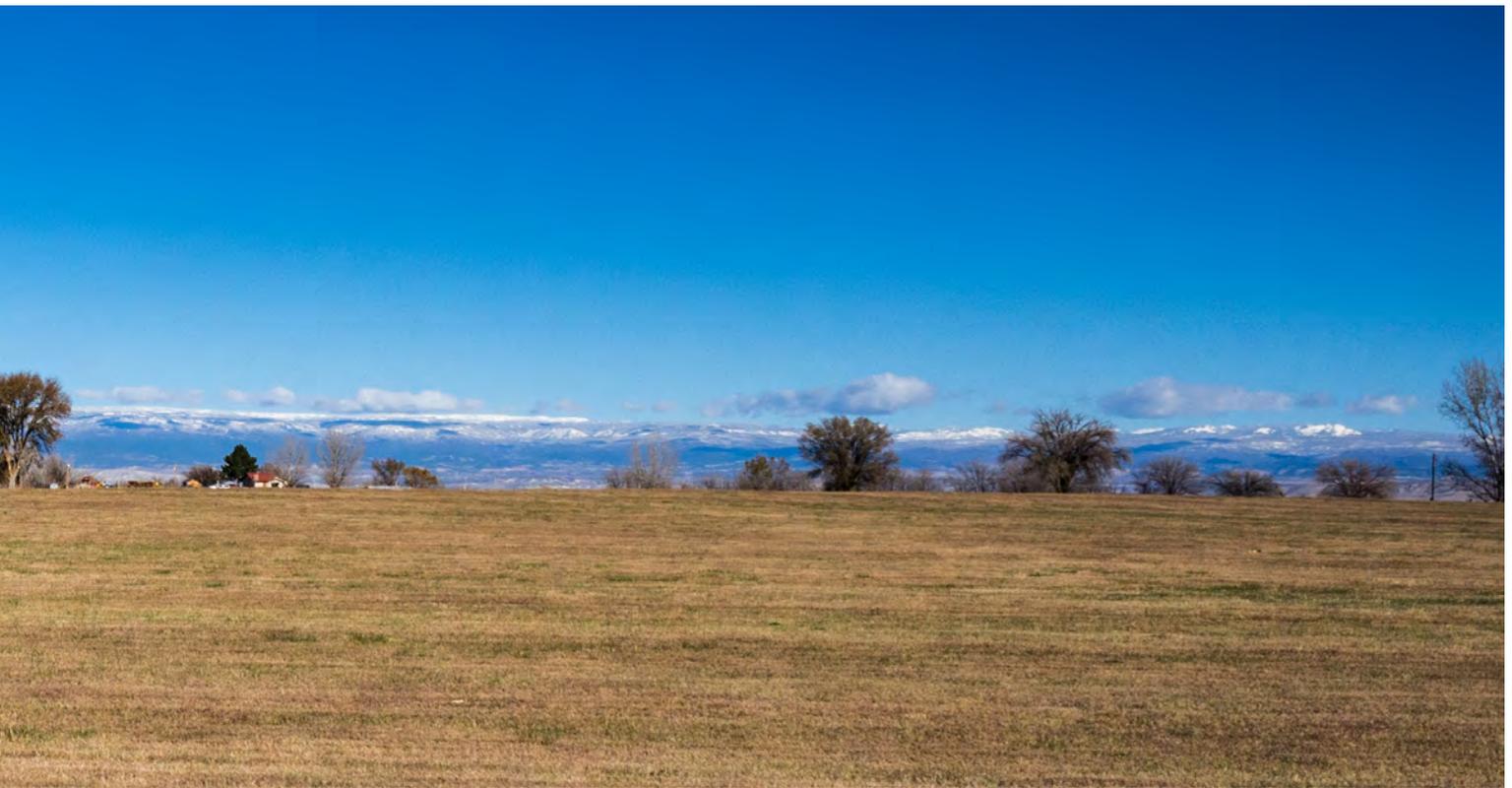
## Solvency

Solvency is a long-run concept and measures the business's ability to cover all outstanding debt and the amount of the business owned by you as opposed to others (for example the bank). The basic idea is if you were to sell all the assets of the business, could you pay off all your debts? Measures of solvency tend to come from the balance sheet.

The **Debt/Asset Ratio** compares all debt with all assets. If this value is equal to 1, other parties have title to all your assets. A value greater than 1 suggests if you liquidated your entire ranch, you would be unable to fulfill all your obligations. Therefore, a value less than 1 is highly desirable. As with the current ratio, you may be able to compare your debt/asset ratio with that of similar ranches, but it is more meaningful to track this value for your own operation over time.

For example, a new rancher with a land mortgage and operation loan will by necessity have a larger debt/asset ratio than a fifth-generation rancher who owns title to the land. So if you do compare your operation with others, make sure you compare it with ranches that are similar in resource base and length of ownership.

A Debt/Asset ratio greater than 0.5 could be a source of concern to your banker, and if it gets too high, could result in higher interest rates as additional debt could be viewed as risky. While smaller is generally better, a very small number suggests little or no debt. A ranch in this position might be better off increasing debt if that would allow for long-term



changes that could make the ranch more profitable in the long run. Often, outside capital can allow larger changes than relying on retained profits alone.

The opposite of the Debt/Asset ratio is the **Equity/Asset Ratio**. This ratio measures the amount of total assets owned by the ranch. A value of 1 usually means there are no outside investors or debtors, and you own the entirety of your ranch. A value less than 0 signals an insolvent ranch or that the ranch's debt outweighs its total assets. Generally, a larger value is preferred, as long as the ranch is not ignoring potential investments simply to avoid debt. Generally, you would want to see this value increase over time.

The **Debt/Equity Ratio** compares total liabilities with total owner's equity. This number shows whether outside investors/debtors or the ranch itself owns a majority of the business. A value of 0 suggests your ranch is owned entirely by you, while a value of 1 suggests the ranch is owned equally by you and other parties. The larger the number, the higher the percentage of your ranch owned by someone other than you. Generally, an owner would want to see this number get smaller over time.

## Income Analysis

Obviously, Net Farm Income (NFI) is a number you would want to track. A more meaningful number, however, is Net Farm Income from Operations (NFIFO), as this is net farm income before any gain or loss from the sale of capital assets

that are not generally part of the core business of a ranch. A bigger value is preferred here, and you would want to see this value grow over time.

**Return on Assets (ROA)**, sometimes called Return on Investment, is a way to measure the percentage of return on assets owned by the ranch. Most ranches, however, use some unpaid family labor and/or management, which tends to inflate NFIFO, so a few adjustments need to be made.

First, add back any interest expense that occurred on the ranch; this results in Adjusted NFIFO. ROA does not care who owns the assets, so it ignores any interest paid to use the asset. If you or a family member worked for the ranch without direct compensation or you or a family member managed the ranch without earning a manager's salary, you need to account for the value of these contributions.

To calculate Returns to Assets, subtract the value of unpaid labor and management from the adjusted NFIFO. This value should be based on what you could have been paid had you performed the task for another operation. ROA is then calculated by dividing Return to Assets by Average Assets. Average Assets is simply the average of the value of the ranch's assets at the beginning and end of the year.

$$ROA(\%) = \frac{\text{Return to Assets } (\$)}{\text{Average Assets } (\$)} \quad \text{where}$$

**Return to Assets = Net Farm Income from Operations + Interest Expense - Value of Unpaid Labor - Value of Unpaid Management**

There are quite a few reasons why comparing ROA across operations is not recommended. For example, did both operations use NFIFO or NFI as the basis? Are assets based on costs or market values? Were values of unpaid labor and management valued the same way? Are there items on the balance sheet that do not belong to the ranch, such as personal checking accounts?

Tracking ROA over time can show if the ranch is becoming better or worse at utilizing its assets. Also, ROA can be used to compare other investment opportunities and to show which would be the better use of your assets. Finally, ROA can be compared with your cost of capital (for example, interest rate on an operating loan) to determine if assets funded by debt are able to cover their own finance charges.

Rate of **Return on Equity** (ROE) is similar to ROA but shows the return just to your investment in the ranch. The ratio again starts with NFIFO, but since the concern is with return to equity, you do not add back the interest expense as with ROA. The rest of the calculations are the same.

Subtract the value of unpaid family labor and management to NFIFO to get Rate of Return on Equity. ROE is simply returns on equity divided by Average Equity for the ranch, where again average equity is the average of the equity at the beginning and end of the year. Generally, you would prefer a larger value for ROE over time. This would suggest you are getting more value from the assets you contributed to the ranch.

ROE can be greater or less than ROA. If ROA is greater than the interest rate on debt, the ROE will be greater than ROA. This would suggest assets purchased with borrowed money more than covered the cost to finance them and contributed

to owner's equity. If the interest rate on debt is greater than ROA, however, ROE will be less than ROA, which means

$$ROE(\%) = \frac{\text{Return to Equity} (\$)}{\text{Average Equity} (\$)} \quad \text{where}$$

**Return to Equity = Net Farm Income from Operations - Value of Unpaid Labor - Value of Unpaid Management**

that owners' equity had to help cover interest payments.

Another measurement that can be obtained from the income statement is **Operating Profit Margin Ratio**, which shows the percentage of revenues that ends up as actual profit.

Again, you start with NFIFO and add back interest expense, and subtract unpaid family labor and management. Dividing this number by gross revenues results in the operating profit margin ratio.

If this value is very low (for example 0.05), a ranch may be better off trying to make current operations more profitable before expanding. In this example, by expanding the operation by \$1,000 in revenue, you would only increase profit by \$50. It would be wiser to increase this ratio first, either by cutting unnecessary costs, improving efficiency, or perhaps focusing on alternative marketing channels to increase revenues before spending time or money on expanding production.

While the number of financial measurements you can use to evaluate your ranch is almost infinite, these fairly simple examples, based on standard statements that should be created each tax season, can be powerful and relatively easy to calculate and track over time. When making management decisions, keeping in mind these measurements and how changes to the ranch will potentially impact them will help you focus on the business aspect of ranching and thus contribute to its long-term success.