



Financial Statement Analysis




Techniques for Analyzing Financial Condition and Performance

- Look at the business' financial statements over time to evaluate the direction the business is heading
- Pro forma analysis
 - Analyze the business' historical performance and make adjustments to reflect future plans and expectations
 - "What if" analysis



Techniques for Analyzing Financial Condition and Performance


- Monitoring and Control
 - Comparing actual to projected performance
 - Spot problems and opportunities while there is time to make changes
- Ratio analysis



Financial Analysis Techniques


Three Standards of Comparison

- Compare the business against itself
- Compare the business' ratios to a set of benchmarks
- Compare the business to an industry average
 - Similar size
 - Similar type




Five Financial Criteria

- 1) Liquidity
 - Ability to meet financial obligations when they come due without disrupting the normal ongoing operations
- 2) Solvency
 - Indication of the ability to repay all indebtedness if all the assets were sold



Five Financial Criteria


- 3) Profitability
 - Extent to which a business generates a profit from the use of labor, management and capital
 - Relationship between revenues and expenses
 - Focus on level of profits in relation to the amount of investment



Five Financial Criteria

4) Repayment Capacity


- Ability to repay debt from both farm and non-farm income
- Capacity to service additional debt



Five Financial Criteria

5) Financial Efficiency

- Degree of efficiency in using labor, management, and capital
- Relationship between inputs and outputs



Liquidity

- Structural liquidity
 - Refers to Balance Sheet measures
 - Relationship between assets and liabilities
- Operational liquidity
 - Refers to cash flow measures

Liquidity

- Working Capital

= *Total Current Farm Assets*
 – *Total Current Farm Liabilities*

Measure of the funds available to purchase inputs and inventory items after the sale of current farm assets and payment of all current farm liabilities

Absolute dollar amount—related to the size of the farm business

Liquidity

- Current Ratio

= *Total Current Farm Assets* /
Total Current Farm Liabilities

Relative rather than an absolute dollar amount


Between 1.5:1 and 2.0:1 or higher is preferred

Possible to be too high?

Liquidity

- Cash Flow Coverage Ratio
 (from Statement of Cash Flows)

= (*Beginning Cash and Cash Equivalents + Cash Received from Operating Activities + Cash Received from Investment Activities + Proceeds from Term Debt + Cash Received from Equity Contributions*)
 /
 (*Cash Paid for Operating Activities + Cash Paid for Investing Activities + Principal Paid on Term Debt and Capital Leases + Cash Equity Distributions*)




Liquidity

- Cash Flow Coverage Ratio
(from Cash Flow Budget)


= $\frac{\text{Projected Total Cash Available}}{\text{Projected Total Cash Required}}$

Assess the ability to meet cash obligations
 Less than 1:1 the business is not liquid
 Would like to have it around 1.1:1 to 1.2:1



Solvency

- Owner Equity
 - Depends upon the size of business
 - Difficult to compare with anything
 - Need both cost and market to properly evaluate




Solvency

- Debt/Asset Ratio

= $\frac{\text{Total Farm Liabilities}}{\text{Total Farm Assets}}$


Market value approach with deferred taxes included

Generally, below .50:1 is preferred




Solvency

- Leverage
 - Value of debt? – the amount of debt used to finance a firm's assets – a firm with significantly more debt than equity is considered to be highly leveraged.




Solvency

- Leverage Ratio or Debt-to-Equity Ratio
 - = *Total Farm Liabilities / Total Farm Equity*
 - Extent to which farm debt capital is being combined with farm equity capital
 - Generally, below 1.0:1 is preferred by lenders




Solvency

- Equity-to-Asset Ratio
 - = *Total Farm Equity / Total Farm Assets*
 - Generally, above .50:1 is preferred by lenders
 - All three solvency ratios (Debt/Asset, Debt/Equity, Equity/Asset) provide equivalent information because of the identity $A = L + OE$.



Profitability Measures

- Net Farm Income
 - Absolute dollar amount
 - Form of business organization can affect interpretation




Profitability Measures

- Return on Assets (ROA)
 - = $(\text{Net Farm Income from Operations} + \text{Farm Interest Expense} - \text{Value of Unpaid Operator and Family Labor and Management}) / \text{Average Total Farm Assets}$

Most meaningful for comparison between farms when the market value approach is used

Use cost approach to value farm assets when evaluating the farm business over time



Profitability Measures

- Return on Equity (ROE)
 - = $(\text{Net Farm Income from Operations} - \text{Value of Unpaid Operator and Family Labor and Management}) / \text{Average Total Farm Equity}$

If ROE < ROA, the business is paying more interest on borrowed money than is being earned in the business.

Profitability Measures

- Operating Profit Margin Ratio

= $\frac{(\text{Net Farm Income from Operations} + \text{Farm Interest Expense} - \text{Value of Unpaid Operator and Family Labor and Management})}{\text{Gross Farm Revenues (or VFP)}}$

Measures profit per unit

Profitability Measures

- Operating Profit Margin Ratio
 - 2 ways to increase profit
 - Increase profit/unit
 - Increase volume of production while maintaining profit/unit
 - *Operating Profit Margin Ratio* focuses on the first
 - *Asset Turnover Ratio* focuses on the second

Profitability Measures

- Value of Farm Production (VFP) vs. Gross Farm Revenue
 - Produce and feed own grain vs. buy feed
 - Purchases of inventory late in year (feeder cattle)

Repayment Capacity Measures

- Term Debt and Capital Lease Coverage Ratio

= $(\text{Net Farm Income from Operations} + \text{Non-Farm Income} + \text{Depreciation Expense} + \text{Interest on Term Debt and Capital Leases} - \text{Income Tax Expense} - \text{withdrawals for Family Living}) / (\text{Annual Scheduled Principal and Interest Payments on Term Debt and Capital Leases})$

Measures the ability of a borrower to cover all required term debt and capital lease payments (> 1.0:1)

Repayment Capacity Measures

Net Farm Income from Operations
 + *Non-Farm Income*
 + *Depreciation*
 - *Income Tax Expense*
 - *Withdrawals for Family Living*
 = Capital Replacement & Term Debt Repayment Capacity
 - *Principal Payments on Term Debt and Capital Leases*
 = Capital Replacement and Term Debt Repayment Margin


Repayment Capacity Measures

- Debt-to-Income Ratio

= $\frac{\text{Average Total Farm Liabilities}}{\text{Net Farm Income from Operations}}$

Measures the number of times that debt exceeds income.

Also used to track the overall health of the farm sector.
 (Debt/Asset ratio vs. Debt/Income ratio)




Financial Efficiency Measures

- Asset Turnover Ratio

= *Gross Farm Revenues / Average Total Farm Assets*

Measures how efficiently farm assets are being used to generate revenue.

Higher the ratio, the more efficiently assets are being used to generate revenue.




Financial Efficiency Measures

- Operating Expense Ratio

= *(Total Farm Operating Expenses including Purchased Feed and Feeder Livestock – Depreciation Expense) / Average Total Farm Assets*

- Depreciation Expense Ratio

= *Depreciation Expense / Gross Farm Revenues*




Financial Efficiency Measures

- Interest Expense Ratio

= *Total Farm Interest Expenses / Average Total Farm Assets*


- As a general rule, an interest expense ratio needs to be less than .15:1 to allow a profitable operation.
- If the ratio exceeds .25:1, it may indicate the business is carrying a heavier debt load than it can sustain.



Financial Efficiency Measures

- Net Farm Income from Operations Ratio

= *Net Farm Income from Operations* /
Gross Farm Revenues



Financial Efficiency Measures

Net Farm Income from Operations Ratio
Operating Expense Ratio
Depreciation Expense Ratio
Interest Expense Ratio

- Taken together, these four ratios represent the total composition of gross revenues.
- i.e., in percentage terms, the four ratios reflect the allocation of 100% of the business' gross farm revenues.
