

OHIO STATE UNIVERSITY EXTENSION

Farm Financial Ratios

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Agenda

- **Become familiar with the ratios for**
 - Liquidity
 - Solvency
 - Profitability
 - Repayment Capacity
 - Financial Efficiency
- **Based on the farm financial standards Legal 21 measures and work done by the University of Minnesota**

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Liquidity

Liquidity refers to the ability of a farm business to meet financial obligations as they come due - to generate enough cash to pay family living expenses and taxes, and make debt payments on time.

Only uses data from the balance sheet; specifically the current assets and current liabilities sections.

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Liquidity Calculations

$$\text{Current Ratio} = \frac{\text{total current farm assets}}{\text{total current farm liabilities}}$$

$$\text{Working Capital} = \text{total current farm assets} - \text{total current farm liabilities}$$

$$\text{Working Capital to Gross Income} = \frac{\text{working capital}}{\text{gross farm income}}$$


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Farm Finance Scorecard

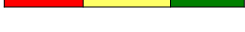
Year 20__

Vulnerable
1.0
2.0
Strong

Liquidity

1. Current ratio _____ 

2. Working capital \$ _____ 

3. Working capital to gross revenue _____% 

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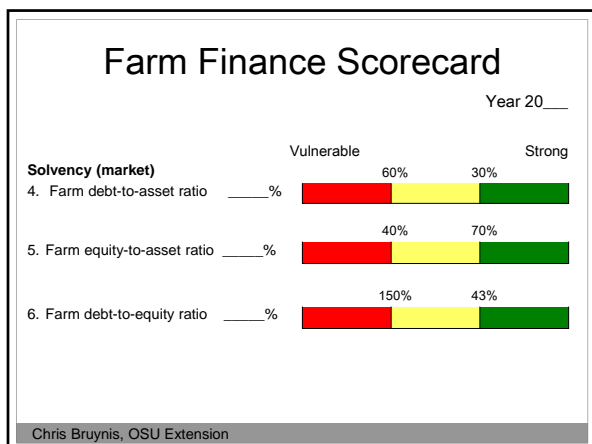
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Solvency

Solvency is the ability of your business to pay all its debts if it were sold tomorrow. Solvency is important in evaluating the financial risk and borrowing capacity of the business.

Data comes from the balance sheet and uses only the market column (not the cost column)

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Profitability

Profitability is the difference between the value of goods produced and the cost of the resources used in their production.

Information for profitability measures comes from the income statement

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Net Farm Income

gross cash farm income
- total cash farm expenses
+/- inventory changes
-depreciation

net farm income

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Income Statement

Gross cash income		1,002,982	Total cash expense	732,836	
			Net cash income	270,146	
Inventory Changes	Beginning Inventory	Purchases/Deposits	Sales/Withdrawals	Ending Inventory	Inventory Change
Prepays and supplies	112,225			133,632	21,407
Hedging gains or losses	2,733	6,510	10,000	2,733	-3,490
Crops and feed	969,582			783,989	-174,660
Breeding livestock	27,732			27,732	-
Accrued interest	9,630			17,160	-7,529
Total inventory change					-157,225
Net operating profit					112,921
Depreciation	Beginning Inventory	Purchases	Sales	Ending Inventory	Depreciation
Machinery and equipment	330,229	375,500		600,156	-35,573
Titled vehicles	17,541			15,165	-2,676
Buildings and improvement	44,797			42,557	-2,240
Total depreciation					-80,489
Net farm income					32,432

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Rate of Return on Farm Assets

Net farm income
+ Farm interest
- Value of operator labor & management

Return on farm assets

Return on farm assets
÷ Average farm assets¹

Rate of return on farm assets

1. from beginning and ending balance sheets

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Rate of Return on Farm Equity

Net farm income
- Value of operator labor & management

Return on farm equity

Return on farm equity
÷ Average farm net worth¹

Rate of return on farm equity

1. from beginning and ending balance sheets - also called owner equity

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Operating Profit Margin

$$\frac{\begin{array}{l} \text{Gross cash farm income} \\ \text{+/- Inventory changes}^1 \\ - \text{Feeder livestock purchased} \\ - \text{Purchased feed} \end{array}}{\text{Value of farm production}}$$

$$\frac{\text{Return on farm assets}}{\text{Value of farm production}}$$

Operating profit margin

1. crops, market livestock, breeding livestock & other income items

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Earnings before Interest, Taxes, Depreciation, and Amortization

$$\begin{array}{l} \text{Net farm income} \\ + \text{Interest expense} \\ + \text{Taxes} \\ + \text{Depreciation and Amortization expense} \end{array}$$

EBITDA

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Farm Finance Scorecard

Year 20__

Profitability	Vulnerable	Strong
7. Net farm income \$ _____		
8. Rate of return on farm assets _____%	4%	8%
9. Rate of return on farm equity _____%	3%	10%
10. Operating profit margin _____%	15%	25%
11. EBITDA \$ _____		

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Repayment Capacity

Repayment Capacity shows the borrower's (i.e., your) ability to repay term debts (both farm and non-farm) on time. It includes non-farm income and so is not a measure of business performance alone.

Uses information from the Statement of Cash Flows

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Capital Debt Repayment Capacity

$$\begin{array}{l} \text{Net farm income} \\ + \text{Depreciation} \\ + \text{Net non-farm income} \\ - \text{Family living \& income taxes} \\ + \text{Interest expense on term loans} \end{array}$$

Capital debt repayment capacity

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Capital Debt Repayment Margin

$$\frac{\begin{array}{l} \text{Capital debt repayment capacity} \\ - \text{Scheduled principal \& interest on term loans}^1 \end{array}}{\text{Capital debt repayment margin}}$$

1. Includes payments on capital leases

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Replacement Margin

$$\frac{\text{Capital debt repayment margin} - \text{Unfunded (cash) capital replacement allowance}}{\text{Replacement Margin}}$$

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Term-Debt Coverage Ratio

$$\frac{\text{Capital debt repayment capacity}}{\div \text{Scheduled principal \& interest on term loans}^1}$$

Term-debt coverage ratio

1. Includes payments on capital leases

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Replacement Margin Coverage Ratio

$$\frac{\text{Capital debt repayment capacity}}{\div (\text{Scheduled principal \& interest on term loans}^* + \text{Unfunded capital replacement allowance})}$$

Replacement margin coverage ratio

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Farm Finance Scorecard

Year 20__

Repayment capacity	Vulnerable	Strong
12. Capital debt repayment capacity \$ _____		
13. Capital debt repayment margin \$ _____		
14. Repayment margin \$ _____		
15. Term-debt coverage ratio _____%	1.25%	1.75%
16. Replacement margin coverage ratio _____%	1.10%	1.50%

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Financial Efficiency

Financial efficiency shows how effectively your business uses assets to generate income. Past performance of the business could well indicate potential future accomplishments. It also answers the questions: Are you using every available asset to its fullest potential? What are the effects of production, purchasing, pricing, financing and marketing decisions on gross income?

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Asset Turnover Rate

$$\frac{\text{Value of farm production}}{\div \text{Average farm assets}^1}$$

Asset turnover rate

1. Market value from beginning and ending balance sheets

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Operating Expense Ratio

(Total farm operating expense [excluding interest]
– Depreciation)
÷ Gross farm income
—————
Operation expense ratio

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Depreciation Expense Ratio

Depreciation
÷ Gross farm income
—————
Depreciation expense ratio

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Interest Expense Ratio

Farm interest
÷ Gross farm income
—————
Interest expense ratio

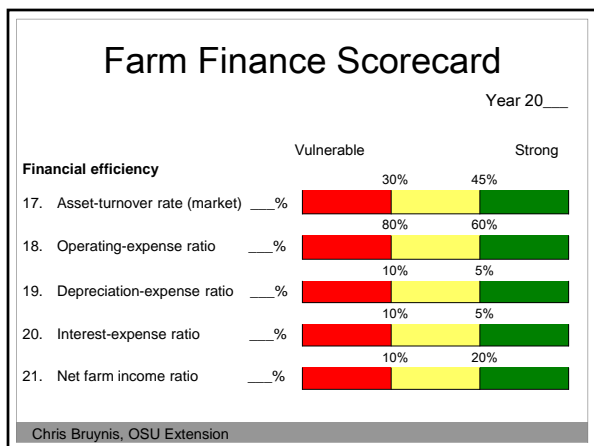
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Net Farm Income Ratio

Net farm income
÷ Gross farm income
—————
Net farm income ratio

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Financial Ratios

One year generally does not tell the whole story!

Financial ratios should be compared to

- Similar businesses/farms
- Industry standards
- Past financial performance trends
- Business targets

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Questions

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31