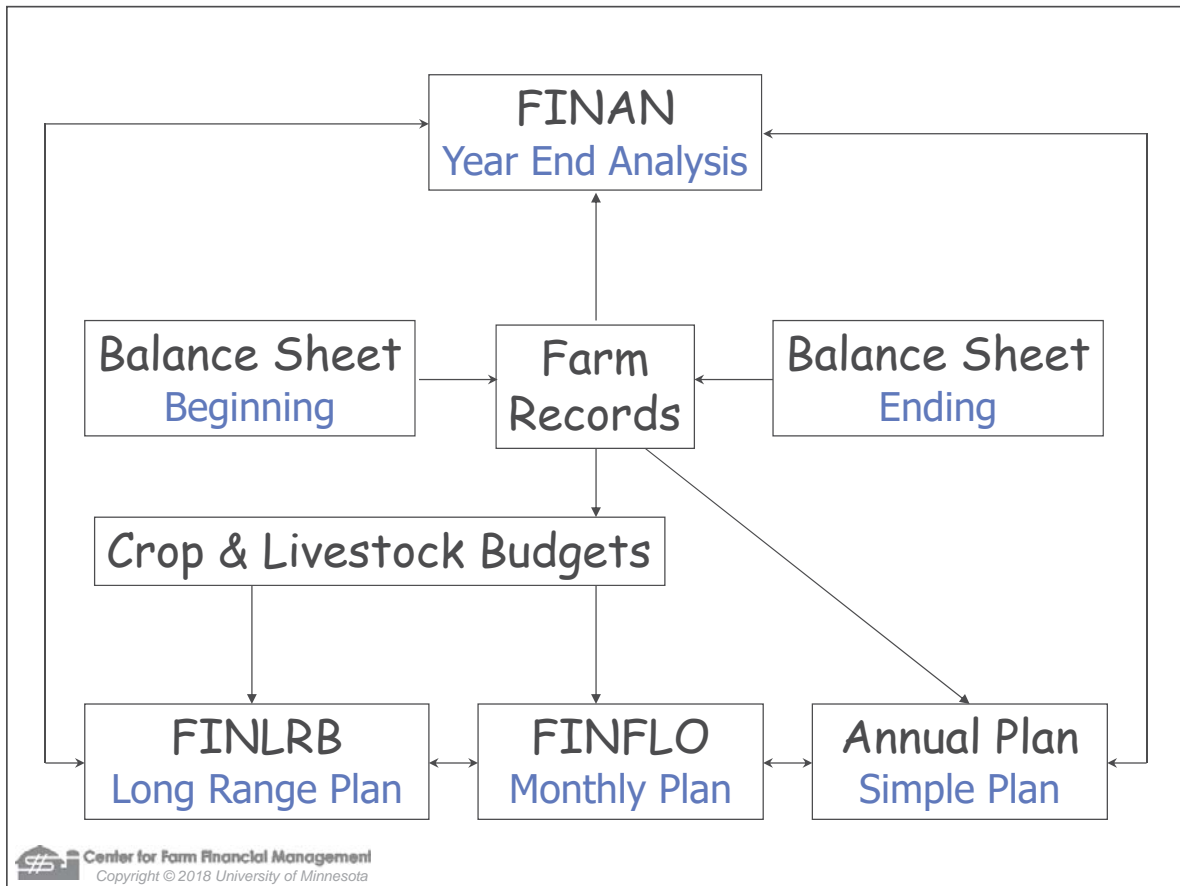


Understanding Financial Measures & Ratios

Three Basic Questions

- **Where is the student financially?**
- **Where do they want to be?**
- **How can they get there?**





Business Objectives

- **Profitability** Return to labor, management, and owner's equity
- **Liquidity** The ability to meet financial obligations as they come due
- **Solvency** The relationship between assets owned, debt, and owners equity

Business Objectives

- **Repayment Capacity** The ability to repay debts on time
- **Financial Efficiency** The effective use of assets in generating business income



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THE BALANCE SHEET

Determining a farm's financial condition.



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Balance Sheet

- **Measures financial position:**
 - **Liquidity**
 - The ability of the business to generate cash when needed.
 - **Solvency**
 - The overall financial risk of the business. Compares assets to amount of debt.



Balance Sheet Analysis

- **Current Position or Liquidity**
- **Total Solvency**
- **Net Worth Change**

Liquidity

Ability of the business to meet its financial obligations on time



Current Ratio

= Current Assets divided by Current Liabilities

- **Measures ability to generate cash to meet farm business obligations.**
 - Includes ability to pay Family Living, Taxes, & Debt Payments.

Working Capital – What is It?

Current Assets — Current Liabilities



Traditional Measures of Liquidity

- **Current ratio**
- **Working capital**



Over-rated!!!

Over-rated!!!

Who Has More Liquidity?

	Farm A	Farm B
Current Assets	\$75,000	\$200,000
Current Debt	25,000	100,000
Current Ratio	3:1	2:1
Working Capital	50,000	100,000



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Who Has More Liquidity?

	Farm A	Farm B
Current Assets	\$75,000	\$200,000
Current Debt	25,000	100,000
Current Ratio	3:1	2:1
Working Capital	50,000	100,000
Gross Income	200,000	1,000,000
Working Cap/Gross	25 %	10 %



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Working Capital to Gross Revenues

= Working Capital divided by Gross Farm Income

- **Measures operating capital available versus the size of the business.**
 - Gives a metric to measure cash reserves and liquid assets against.

Liquidity Ratio Interpretation

Liquidity Measures

Ratios measuring the ability to meet short term obligations. From the balance sheet, these include:



- **Current Ratio** – measures curr. farm assets vs. farm liab.
- **Working Capital** – amount of operating capital available in the short term.
- **Working Capital to Gross Revenues** – metric to analyze the amount of working capital available.

Maintaining or Improving Liquidity Ratios



- Re-Amortize Existing Loans to Lessen Current Payments
- Sell Unneeded Capital Assets, Use Funds to Reduce Current Debts



- Build Cash Reserves on the farm – Ex: Save a Portion of Each Commodity Sale in Cash
- Control Family Living Costs
- Capital Asset Purchases Using Cash
- Financing Capital Assets with Operating Funds



- Maintain Cash Reserves in the Bank
- Monitor Operating Expenses & Keep In Check
- Carefully Consider Capital Purchases & New Debt Obligations
- Watch Personal Draws From the Operation

Solvency

Is the business financially sound?



Measures of Solvency

- **Debt to assets**
- **Equity to assets**
- **Debt to equity**



Debt to Asset Ratio

= Total Debt divided by Total Assets

- **Important Solvency Measure.**
 - Provides look at balance sheet structure.
 - Can all debts be paid if assets are sold?
 - Is debt evenly distributed between current, intermediate, and long term?



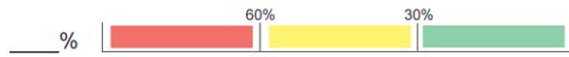
Solvency Ratio Interpretation

Solvency Measures

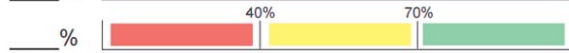
Ratios measuring overall financial risk – comparing farm assets & debts. From the balance sheet, these include:

Solvency

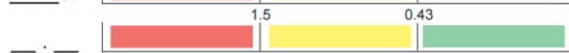
4. Farm debt-to-asset ratio



5. Farm equity-to-asset ratio



6. Farm debt-to-equity ratio



- **Farm Debt-to Asset** – measures farm debt vs. farm assets. Indicates business leverage & compares the bank's investment vs. the borrower's investment in the business.

Maintaining or Improving Solvency Ratios



- Increase Farm Profitability.
- Minimize Family Living Costs – Increase Off-Farm Income.
- Forego Asset Purchases Financed with Debt.
- Sell Unneeded Assets & Use Funds to Reduce Debt.



- Reinvest Profits Back Into the Farm Operation.
- Minimize New Farm Debt.
- Sell Unneeded Capital Assets & Use Funds to Reduce Debt.
- Maintain Assets in Good Repair.



- Carefully Consider Capital Purchases & New Debt Obligations.
- Maintain Farm Profitability.
- Invest in Productive, Profitable Assets for the Farm.

Balance Sheet Analysis

- **Current Position**
- **Total Solvency**
- **Net Worth Change**
 - **Measures Overall Progress**
 - **Net Worth Growth Can Only Happen If:**
 - **Earnings Exceed Consumption *OR***
 - **Market Values are Increased**


Earned Net Worth Analysis

- ***Net worth change is often your best indicator of financial performance***
- ***Two components on market value statements***
 - *Asset valuation change*
 - *Earned net worth change*



Earned Net Worth Analysis

Farm Business	
Beginning net worth at market	
+ Net farm income (accrual)	
+ Non-farm income	
- Family living expense	
- Income taxes	
+/- Valuation changes	
= Ending net worth at market	

 *Retained earnings = Earned net worth change*

Net Worth Growth

= Net farm income + non-farm income – family living – income taxes – personal inventory changes (assets and liabilities)

- **Represents *Earned Net Worth Change* – no valuation changes inflating equity.**

THE INCOME STATEMENT

***Determining if the farm is
profitable.***



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Income Statement

- Profit Equation:

***Farm Revenue – Farm Expense
= Net Farm Profit***



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Income Statement Types

Three Types of Income Statements



Cash



Accrual



*Cash +/-
Inventories & Depr.
(Accrual Adjusted)*



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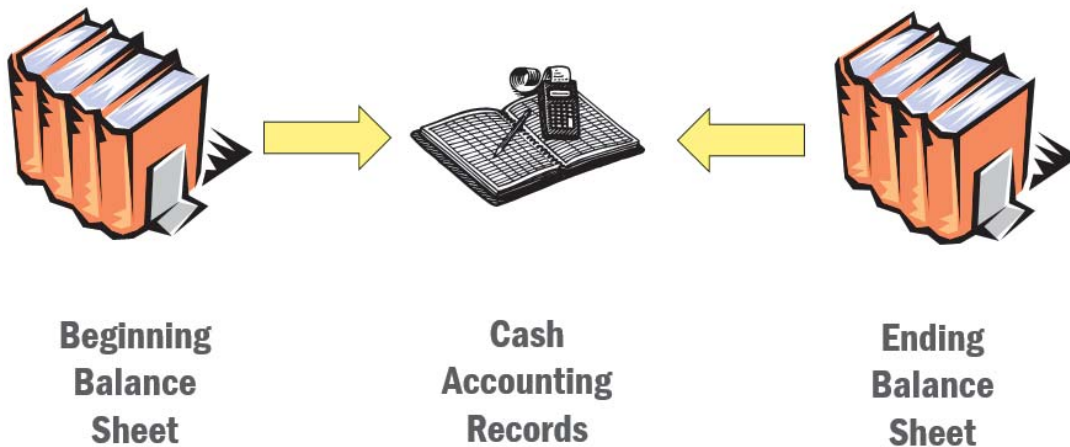
Income Statement

- **Accrual Adjusted Method**
 - Net Cash Income –
Adjusted for Inventory Changes.



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Accrual Adjusted Income Statement



Accrual Adjusted Income



Income

- Expenses

Net Cash Income

+/- Inventory Changes & Depreciation

Accrual Adjusted Net Farm Income

Profitability

***Ability of the business to
produce a profit***



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Measures of Profitability

- **Net farm income**
- **Rate of return on assets (ROA)**
- **Rate of return on equity (ROE)**
- **Operating profit margin**
- **EBITDA**



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Net Farm Income

**= Gross cash income minus cash expense
plus/minus inventory change &
depreciation**

- **Represents return to labor,
management, and equity.**

Rate of Return on Assets

= Return on farm assets / Avg. farm assets
**(*Return on farm assets* = Net farm
income + Farm interest – Value of
labor & management)**

- **Average Interest Rate Earned on the
Total of All Farm Investments.**

Rate of Return on Equity

= Return on farm equity / Avg. farm net worth
(Return on farm equity = Net farm income – Value of labor & mgmt)

- Average Interest Rate Earned on Your Personal Farm Investments.

Profitability Ratio Interpretation

Profitability Measures

Ratios measuring the ability to generate farm earnings. From the income statement, these include:

Profitability

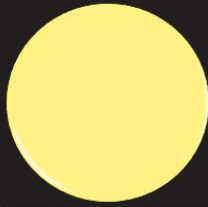
7. Net farm income	\$ _____	
8. Rate of return on farm assets	_____ %	
9. Rate of return on farm equity	_____ %	
10. Operating profit margin	_____ %	
11. EBITDA	\$ _____	

- Net Farm Income– measures the return to the labor, management, and equity investment in the farm.
- Rate of Return on Farm Assets– considered as the average interest rate earned on the total of your farm investments.
- Rate of Return on Farm Equity– considered as the average interest rate earned on the equity investment on your farm.

Maintaining or Improving Profitability Ratios



- Look to Alternative Enterprises & Income Sources.
- Weigh Asset Management Decisions – Lease vs. Own vs. Custom Hire.
- Maximize Profits and Minimize Expenses.



- Look at Profitability of Each Enterprise & Determine if Changes are Needed.
- Consider Input Cost Controls.
- Manage Production, Cost, & Price Risks.
- Focus on Profit Margins, Not Tax Liabilities.



- Maintain Revenue Sources – Lock in Profits.
- Monitor Operating Expenses & Keep In Check.
- Maximize Capital Asset Utilization.

Income Statement Interpretation

- **Rate of Return on Assets (ROA) > Avg. Interest Rate on Debt**
- **Goal – ROE > ROA**
 - Borrowed capital is earning more than its cost.
- **Earned Net Worth Change > \$0**



THE CASH FLOW STATEMENT

***Determining where
the farm's money goes.***

Cash Flow Statement

- **Explains sources and uses of cash – where money was earned and spent.**
- **Ties together the balance sheet and income statement – for impacts on cash.**



Cash Flow Statement

3 Main Areas:

- Cash From Operations
- Cash From Investing Activities
- Cash From Financing Activities

Beginning Cash Balance	\$8,000
<i>Cash From Operations</i>	+45,000
<i>Cash From Investing</i>	-30,000
<i>Cash From Financing</i>	-11,000
Ending Cash Balance	12,000



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Cash Flow Statement

Key Points:

- Tracks cash through the business.
 - Is all cash accounted for?
- Does not track business performance.
- Over time, cash from operations should pay for cash used in investing & financing activities.



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Cash Flow Statement

- **A Measure of Past Performance**
 - Was cash put to best use for the farm?
- **Often used for Planning Purposes in Ag**
 - Will the Operation Cash Flow for the Year?
 - Projects Operating Loan Needs Within the Year
 - How is cash use affecting financial performance?



Cash Flow Statement Analysis

- **Repayment Capacity**



Repayment Capacity

- ***Ability of the business generate enough income to repay it's debt and replace assets***



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Measures of Repayment Capacity

- **Term debt and capital lease coverage ratio**
- **Replacement margin coverage ratio**



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Term Debt Coverage Ratio

- Net farm income (accrual)
- + Depreciation
- + Nonfarm income
- Family living expense (apparent)
- Income taxes
- + Interest paid on term debt
- = Available for term debt payments
- ÷ Scheduled term debt payments

Term Debt Coverage Ratio

**= Capital Debt Repayment Capacity /
Scheduled Principal & Interest on Loans**

- Important in Analyzing the Past Performance & the Projected Year.
- Will the farm be able to pay all loan payments?

Repayment Capacity Interpretation

Repayment Capacity Measures

Ratios measuring the ability to repay debts on time. From the cash flow statement, these include:

Repayment capacity

12. Capital debt repayment capacity \$ _____

13. Capital debt repayment margin \$ _____

14. Replacement margin \$ _____

15. Term-debt coverage ratio ____ : ____

16. Replacement margin coverage ratio ____ : ____

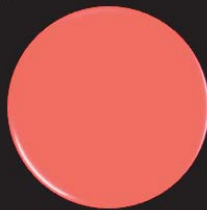


- **Term Debt Coverage Ratio** – measures whether the business produced enough income to cover all term debt payments.

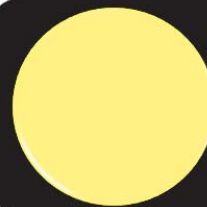


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Maintaining or Improving Repayment Capacity Ratios



- Restructure or Re-Amortize Loans.
- Sell Unneeded Assets & Use Funds to Reduce Debt.
- Forego New Debt Obligations.
- Maximize Profits. Generate Additional Income.



- Decrease Family Living Expenses.
- Decrease Operating Expenses & Income Taxes.
- Increase Receipts with Increased Prices or Yields.
- Carefully Consider New Debt Obligations.



- Maintain Farm Revenues.
- Monitor Operating Expenses & Keep In Check.
- Invest in Productive, Profitable Assets for the Farm.

FROM ALL FINANCIAL STATEMENTS

***Answering how effective
management is at generating
income and turning this to profit.***



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Financial Efficiency

***Cost control – Where is the money
going?***



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Efficiency Ratios

$$\begin{aligned} & \text{Operating Expense Ratio} \\ + & \text{ Depreciation Expense Ratio} \\ + & \text{ Interest Expense Ratio} \\ + & \text{ Net Farm Income Ratio} \\ = & \text{ 100 \% of Gross Revenue} \end{aligned}$$



Financial Efficiency Ratios

Operating Expense Ratio

$$= \frac{\text{Total Farm Operating Expense (less depr. \& interest)}}{\text{Gross Farm Revenue}}$$

- Shows what portion farm expenses are of gross farm revenues.

Financial Efficiency Ratios

Depreciation Expense Ratio

= Depreciation / Gross Farm Revenue

- Shows what portion farm income is used to maintain capital assets.



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Financial Efficiency Ratios

Interest Expense Ratio

= Interest / Gross Farm Revenue

- Shows what portion farm income is used to pay interest on debt.



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Financial Efficiency Ratios

Net Farm Income Ratio


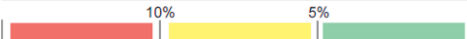
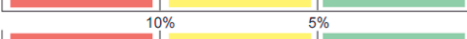
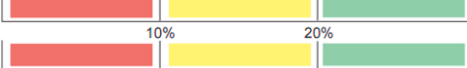
$$= \text{Net Farm Income} / \text{Gross Farm Revenue}$$

- Shows what portion of gross farm revenues remain as profit, after all expenses.

Financial Efficiency Ratio Interpretation

Financial Efficiency Measures

Ratios measuring how effectively farm assets generate income. Coming from all financial statements, these include:

18. Operating-expense ratio	_____ %	
19. Depreciation-expense ratio	_____ %	
20. Interest-expense ratio	_____ %	
21. Net farm income ratio	_____ %	

- **Financial Efficiency Ratios** –
give insight into the business as a whole. These ratios answer:
 - Are farm assets being utilized to their fullest potential?
 - How well is gross income being managed?
 - What changes may need to be implemented to maximize profits?

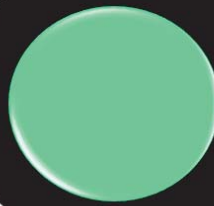
Maintaining or Improving Financial Efficiency Ratios



- Maximize Operational Efficiency – Scrutinize Costs, Increase Revenue, Manage Assets.
- Sell Unneeded Assets, Reduce Debt with Funds.
- Restructure Debt to Reduce Interest Expense.
- Maximize Profits. Generate Additional Income.



- Fully Employ Farm Assets.
- Decrease Operating Expenses & Income Taxes.
- Increase Receipts with Increased Prices or Yields.
- Carefully Consider New Debt Obligations.



- Maintain Farm Revenues.
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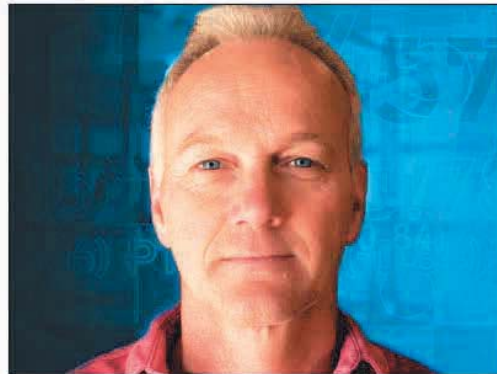
Interpreting Financial Statements And Measures

Use your financial statements effectively

- **Learn** to use your financial statements in day-to-day management
- **Understand** how to interpret common financial statements
- **Acquire** a powerful skill set to enhance your farm business
- **Gain** self confidence in the area of finance

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Learn more about Interpreting Financial Statements and Measures



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This site was created to help producers understand how to interpret common financial statements.



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