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Stoplight Ratio Analysis

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Farm Finances at a Glance

- **<u>Where is the problem?</u>**
  - **Liquidity?**
    - **Too much short-term debt**
  - **Solvency?**
    - **Too much debt**
  - **Profitability?**
    - **Lack of farm earnings**
  - **Repayment capacity?**
    - **Payments too high**
  - **Efficiency?**
    - **Cost control**

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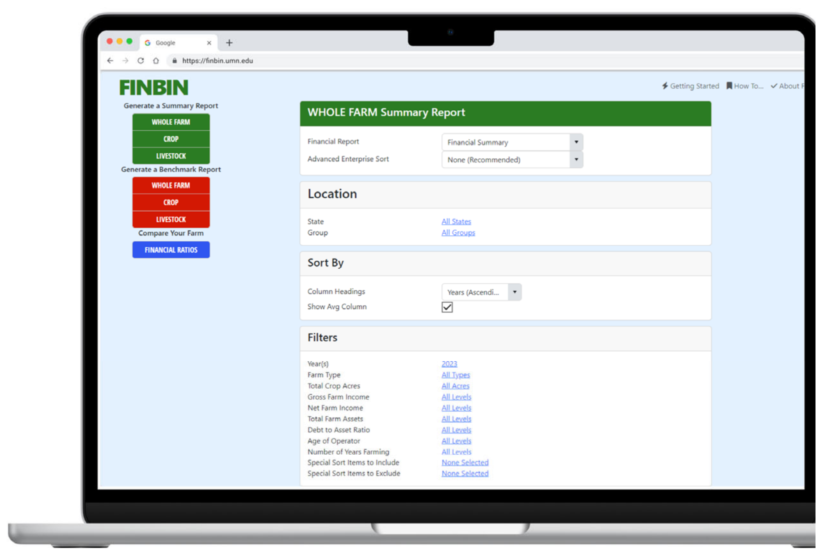
FINBIN is the largest and most accessible source of farm financial and production benchmark information in the country. It places detailed reports right at your fingertips.

- Nearly 3,500 farms annually across several states
- Numerous whole-farm and crop/livestock enterprise reports available
- Accrual-adjusted financial statements using economic depreciation methods
- Multiple, thorough data integrity and quality checks
- Free, open access for querying



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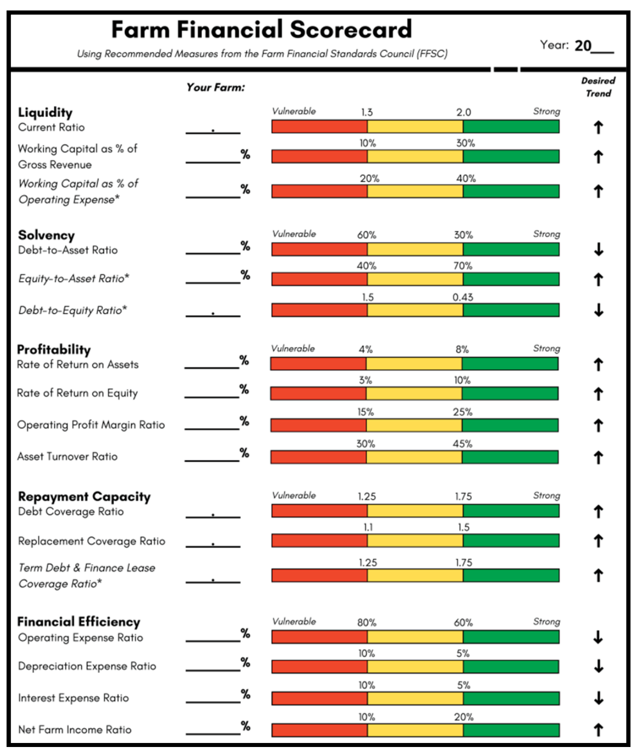
Farm Financial Standards Measures

LIQUIDITY	Current Ratio
	Working Capital as % of Gross Revenue
	Working Capital as % of Operating Expense*
SOLVENCY	Debt-to-Asset Ratio
	Equity-to-Asset Ratio*
	Debt-to-Equity Ratio*
PROFITABILITY	ROR on Assets
	ROR on Equity
	Operating Profit Margin Ratio
	Asset Turnover Ratio
REPAYMENT CAPACITY	Debt Coverage Ratio
	Replacement Coverage Ratio
	Term Debt & Finance Lease Coverage Ratio*
FINANCIAL EFFICIENCY	Operating Expense Ratio
	Interest Expense Ratio
	Income from Operations Ratio
	Depreciation & Amortization Expense Ratio

Farm Financial Scorecard

z.umn.edu/Scorecard



Farm Financial Scorecard

Using Recommended Measures from the Farm Financial Standards Council (FFSC)

Year: 20___

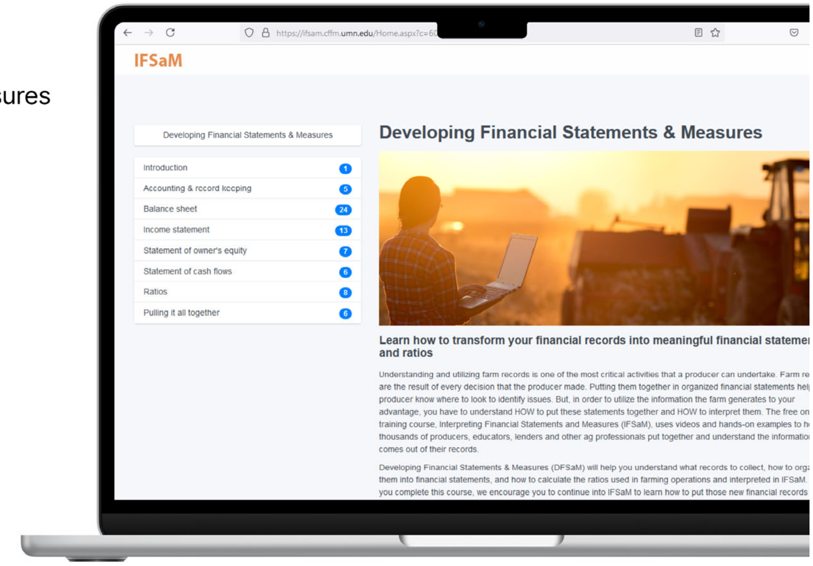
	Your Farm:	Vulnerable		Strong	Desired Trend
Liquidity					
Current Ratio	___.___		1.3	2.0	↑
Working Capital as % of Gross Revenue	______%		10%	30%	↑
*Working Capital as % of Operating Expense**	______%		20%	40%	↑
Solvency					
Debt-to-Asset Ratio	______%		60%	30%	↓
*Equity-to-Asset Ratio**	______%		40%	70%	↑
*Debt-to-Equity Ratio**	___.___		1.5	0.43	↓
Profitability					
Rate of Return on Assets	______%		4%	8%	↑
Rate of Return on Equity	______%		3%	10%	↑
Operating Profit Margin Ratio	______%		15%	25%	↑
Asset Turnover Ratio	______%		30%	45%	↑
Repayment Capacity					
Debt Coverage Ratio	___.___		1.25	1.75	↑
Replacement Coverage Ratio	___.___		1.1	1.5	↑
*Term Debt & Finance Lease Coverage Ratio**	___.___		1.25	1.75	↑
Financial Efficiency					
Operating Expense Ratio	______%		80%	60%	↓
Depreciation Expense Ratio	______%		10%	5%	↓
Interest Expense Ratio	______%		10%	5%	↓
Net Farm Income Ratio	______%		10%	20%	↑

IFSaM

Interpreting Financial Statements and Measures

DYFSaM

Developing Your Financial Statements and Measures



IFSaM/DYFSaM is a product of the Center for Farm Financial Management

Learn more at ifsam.cffm.umn.edu

Liquidity

Can the business pay its short-term obligations?

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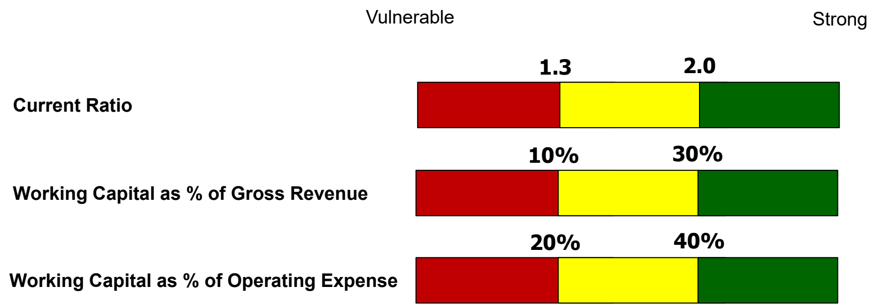
Farm Finance Scorecard

Liquidity



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Measures of Liquidity

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

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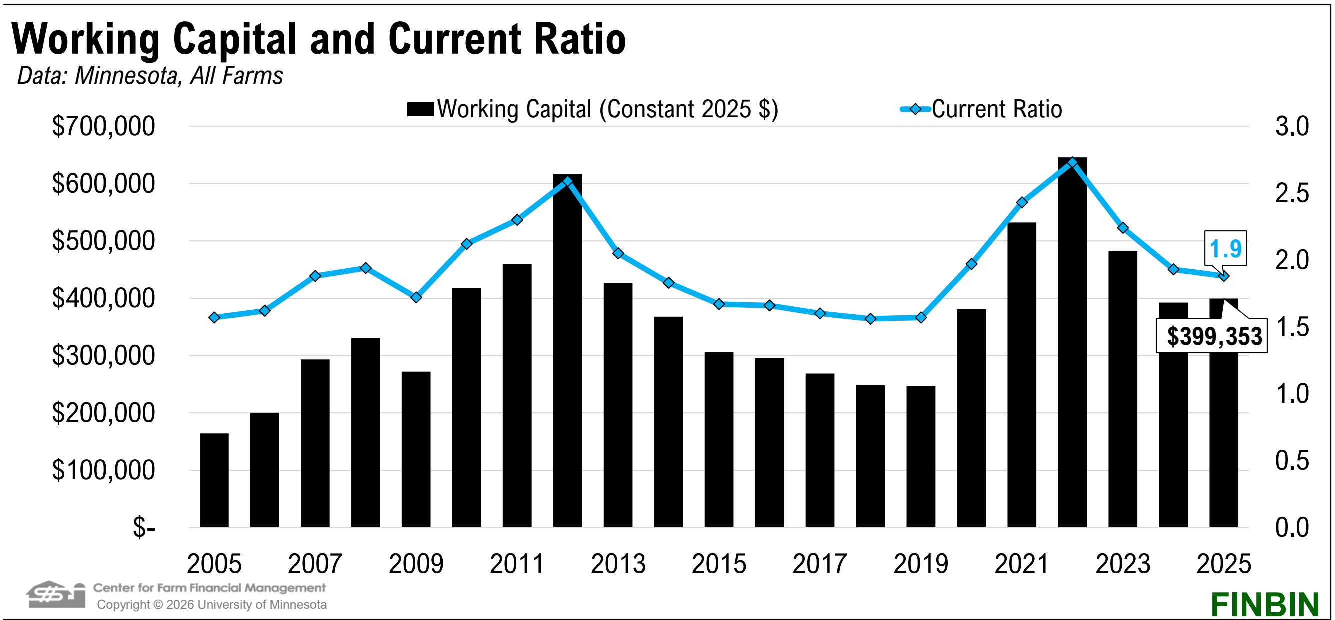

Traditional Measures of Liquidity

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

Over-rated!!!

Over-rated!!!

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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

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

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 %

Measures of Liquidity

- Current ratio
- Working capital
- Working capital to gross revenue

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How do you grow working capital?

- **Make money.**

  Business profits drive liquidity

- **Don't spend all of it.**

  Major drains on liquidity:
  - **High family living costs**
  - **Purchasing long-term assets with cash**

- **Refinance / Restructure Debt**

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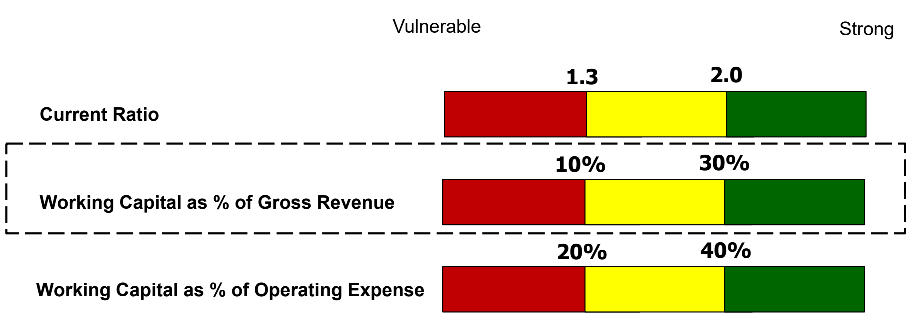
Farm Finance Scorecard

Liquidity



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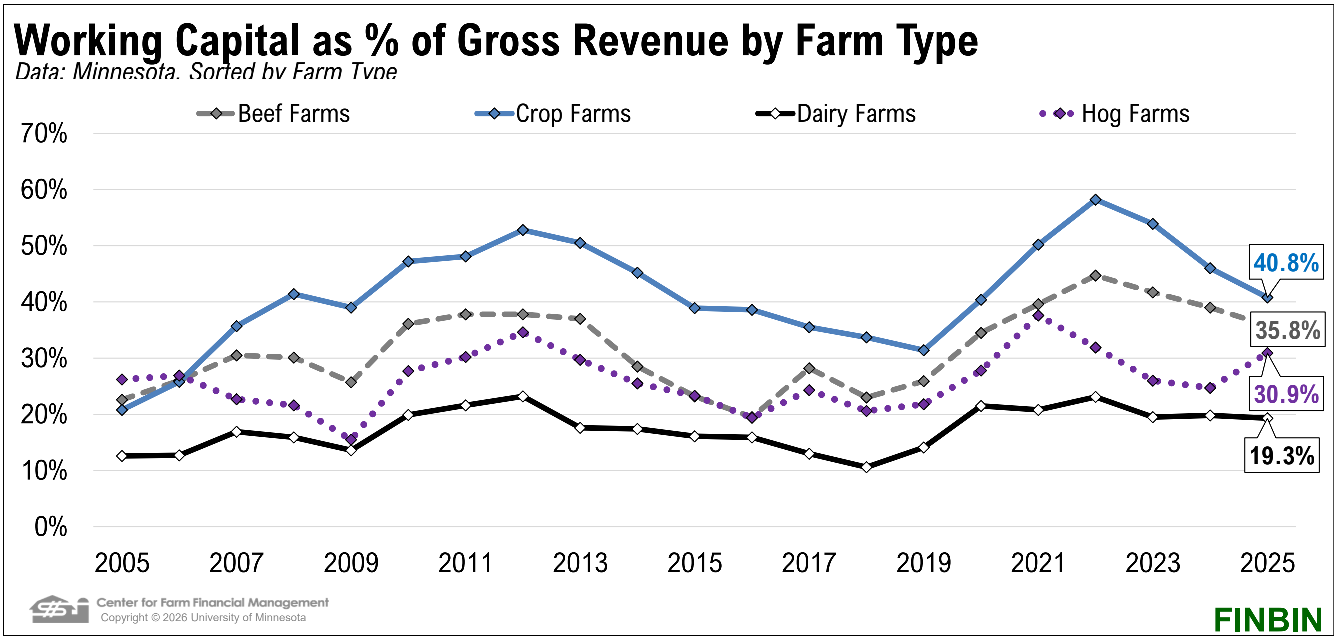

Working Capital as % of Gross Revenue by Farm Type
Data: Minnesota, Sorted by Farm Type
Beef Farms
Crop Farms
Dairy Farms
Hog Farms
70%
60%
50%
40%
30%
20%
10%
0%
2005
2007
2009
2011
2013
2015
2017
2019
2021
2023
2025
40.8%
35.8%
30.9%
19.3%
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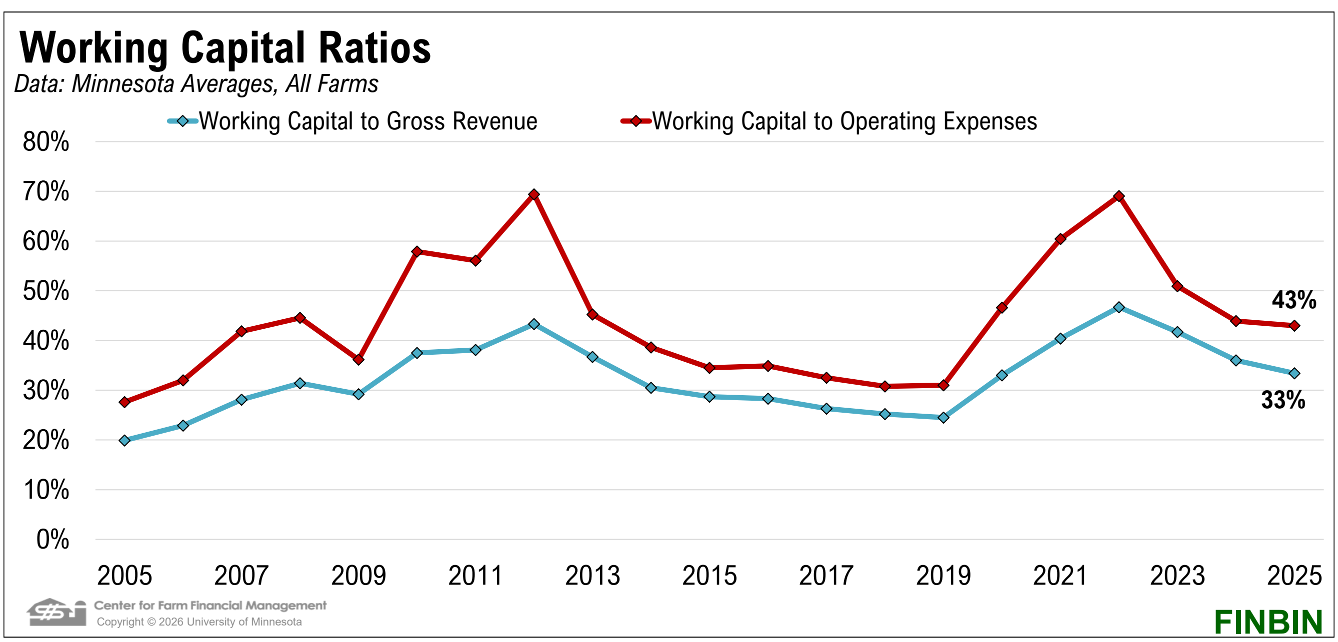

Working Capital Ratios
Data: Minnesota Averages, All Farms
Working Capital to Gross Revenue
Working Capital to Operating Expenses
80%
70%
60%
50%
40%
30%
20%
10%
0%
2005
2007
2009
2011
2013
2015
2017
2019
2021
2023
2025
43%
33%
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Maintaining & Improving **Liquidity** Position

- Decrease purchases of capital items. Sell underutilized assets.
  - Machinery
  - Buildings
  - Land
- Don't finance capital purchases with operating credit
  - Mismatch of assets/liabilities
- Re-amortize, refinance debt.
- Decrease family living expenses

Balance Sheet Structure Opportunities

- High current assets to current debt
  - Very liquid operation – ability to take advantage of opportunities
- High intermediate assets to intermediate debt
  - Prepared for capital replacement – choose between leasing, fixing, or purchasing equipment
- High long-term assets to long-term debt
  - Expansion capacity for growth
  - Ability to refinance, if needed

Balance Sheet Structure Problems

- **High current debt to current assets**
  - Liquidity problems – strapped for cash
- **High intermediate debt to intermediate assets**
  - Capital replacement problems – can't replace equipment when needed
- **High long-term debt to long-term assets**
  - Limited expansion capacity – can't grow

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Solvency

Is the business financially sound?

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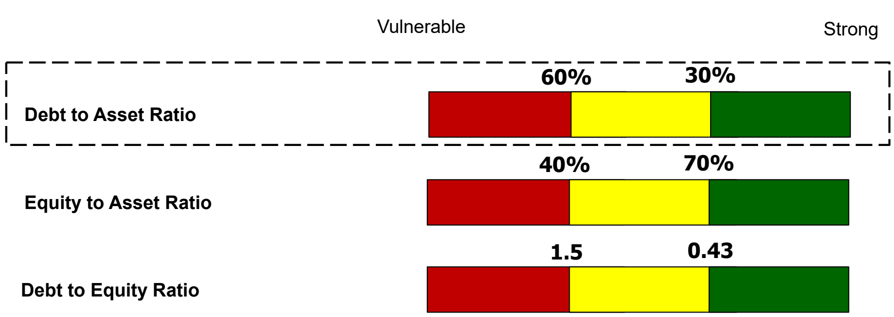
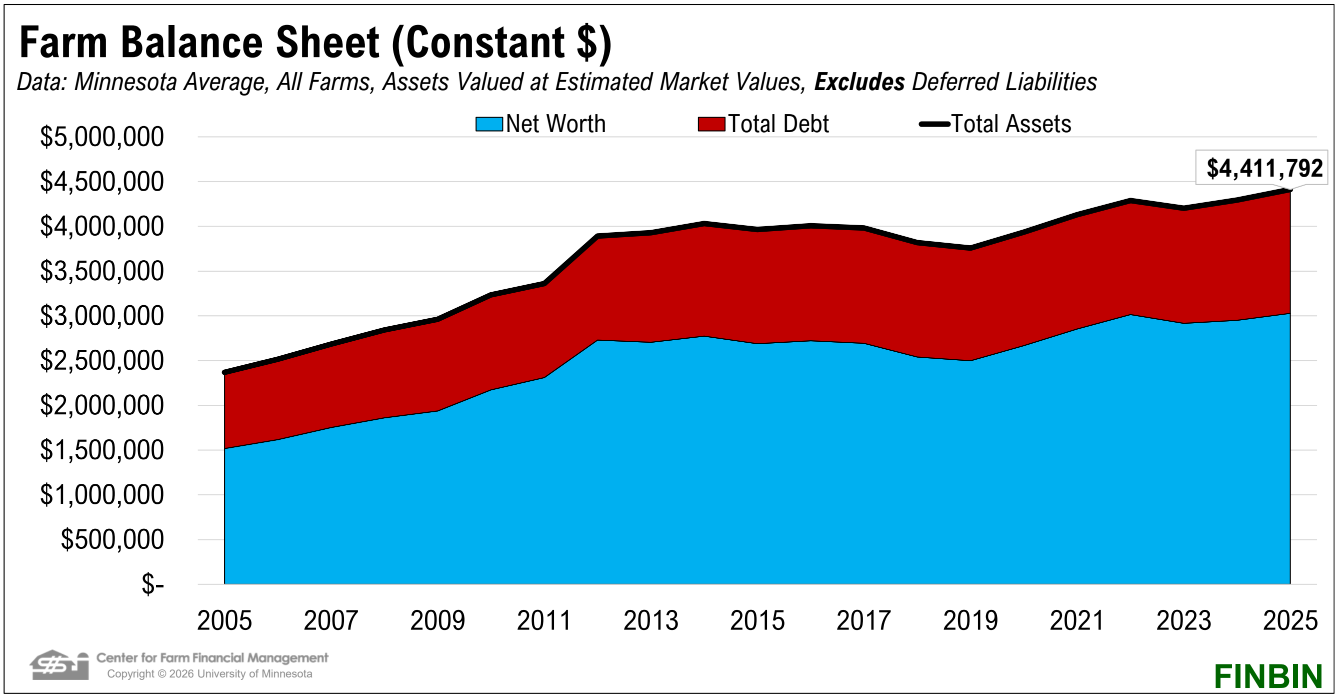
Measures of Solvency

- Debt to Asset Ratio
- Equity to Asset Ratio
- Debt to Equity Ratio

Farm Finance Scorecard

Solvency





Farm Balance Sheet (Constant $)
Data: Minnesota Average, All Farms, Assets Valued at Estimated Market Values, Excludes Deferred Liabilities
Net Worth
Total Debt
Total Assets
$4,411,792
$5,000,000
$4,500,000
$4,000,000
$3,500,000
$3,000,000
$2,500,000
$2,000,000
$1,500,000
$1,000,000
$500,000
$-
2005
2007
2009
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2017
2019
2021
2023
2025
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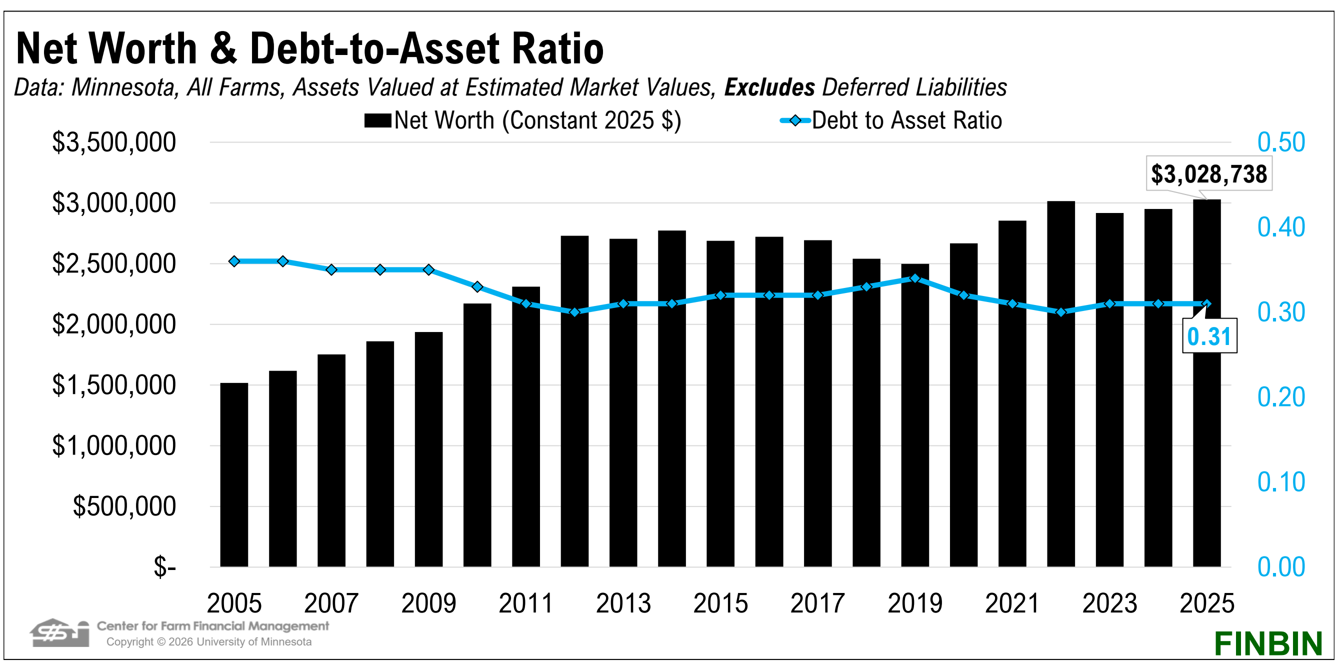

Net Worth & Debt-to-Asset Ratio
Data: Minnesota, All Farms, Assets Valued at Estimated Market Values, Excludes Deferred Liabilities
Net Worth (Constant 2025 $)
Debt to Asset Ratio
$3,028,738
0.31
$3,500,000
$3,000,000
$2,500,000
$2,000,000
$1,500,000
$1,000,000
$500,000
$-
0.50
0.40
0.30
0.20
0.10
0.00
2005
2007
2009
2011
2013
2015
2017
2019
2021
2023
2025
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Quiz Time

What is the current average debt to asset ratio for US farmers, as provided by USDA Economic Research Service?

A. 13%

B. 26%

C. 43%

D. 55%

E. 88%

Source: *Farm Sector Income and Finances*, ERS/USDA, Feb. 2026

Maintaining & Improving SOLVENCY Position

- Invest in productive, profitable farm assets
  - Avoid purchases solely for tax purposes
- Sell unneeded assets and use funds to reduce debt
  - Avoid buying "toys"
- Consider which is better: Leasing, buying, or using custom services

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Profitability

The ability of the business to produce earnings

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Profitability Measures

- Net farm income (accrual)
- Rate of return on assets (ROA)
- Rate of return on equity (ROE)
- Operating profit margin
- Asset turnover ratio

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Farm Finance Scorecard

PROFITABILITY

	Vulnerable		Strong
Rate of Return on Assets		4%	8%
Rate of Return on Equity		3%	10%
Operating Profit Margin Ratio		15%	25%
Asset Turnover Ratio		30%	45%

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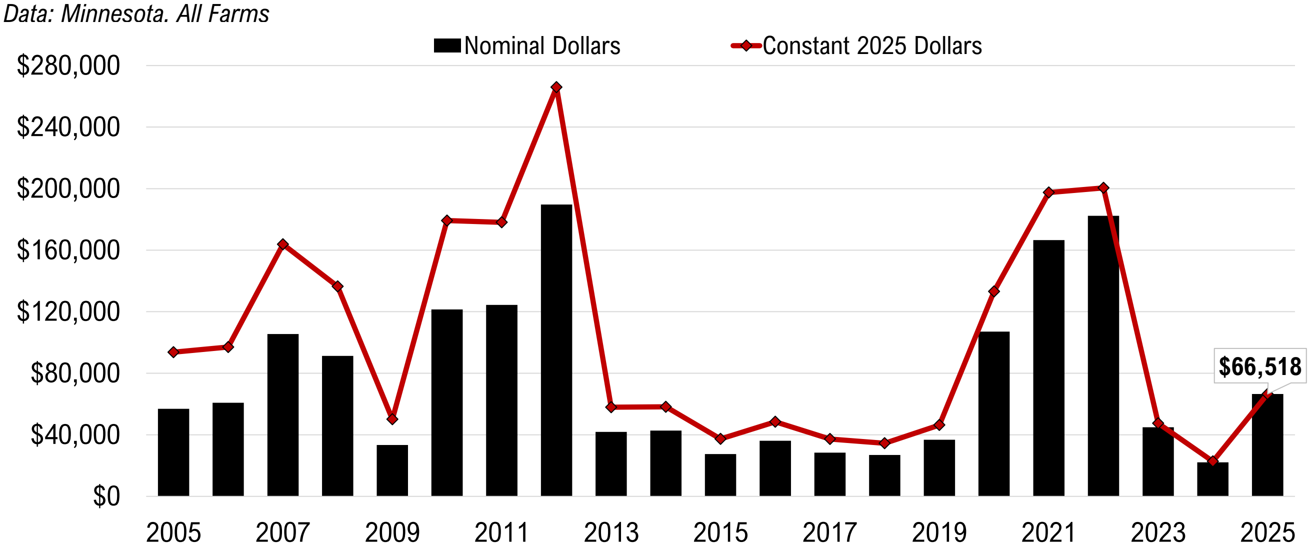
Median Net Farm Income

Data: Minnesota. All Farms



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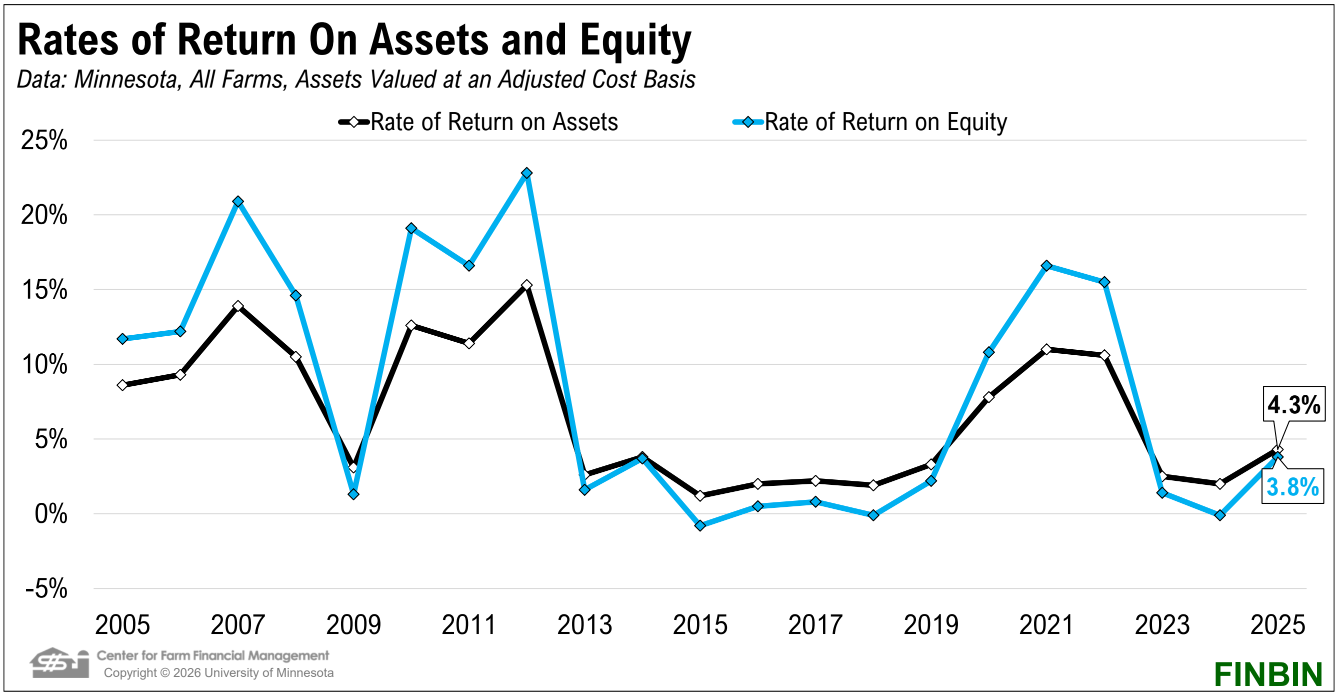

Rates of Return On Assets and Equity
Data: Minnesota, All Farms, Assets Valued at an Adjusted Cost Basis
Rate of Return on Assets
Rate of Return on Equity
25%
20%
15%
10%
5%
0%
-5%
2005
2007
2009
2011
2013
2015
2017
2019
2021
2023
2025
4.3%
3.8%
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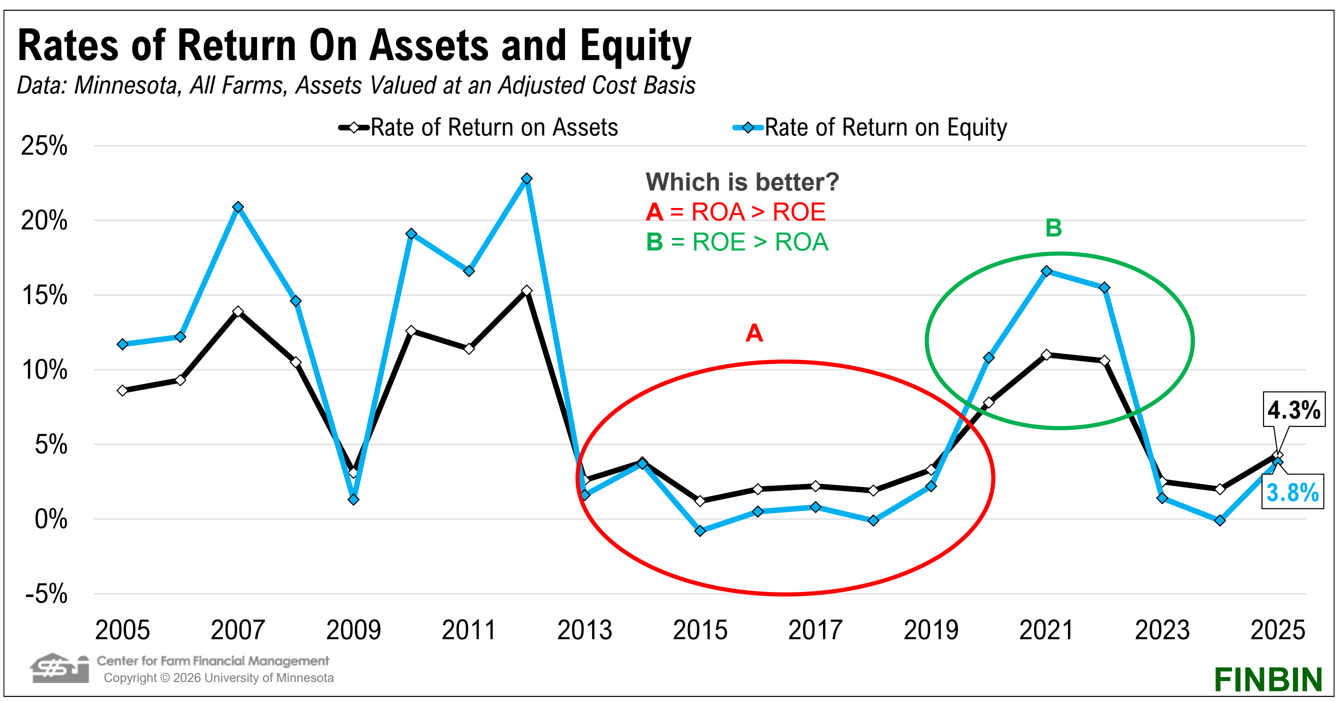

Rates of Return On Assets and Equity
Data: Minnesota, All Farms, Assets Valued at an Adjusted Cost Basis
Rate of Return on Assets
Rate of Return on Equity
Which is better?
A = ROA > ROE
B = ROE > ROA
A
B
25%
20%
15%
10%
5%
0%
-5%
2005
2007
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2021
2023
2025
4.3%
3.8%
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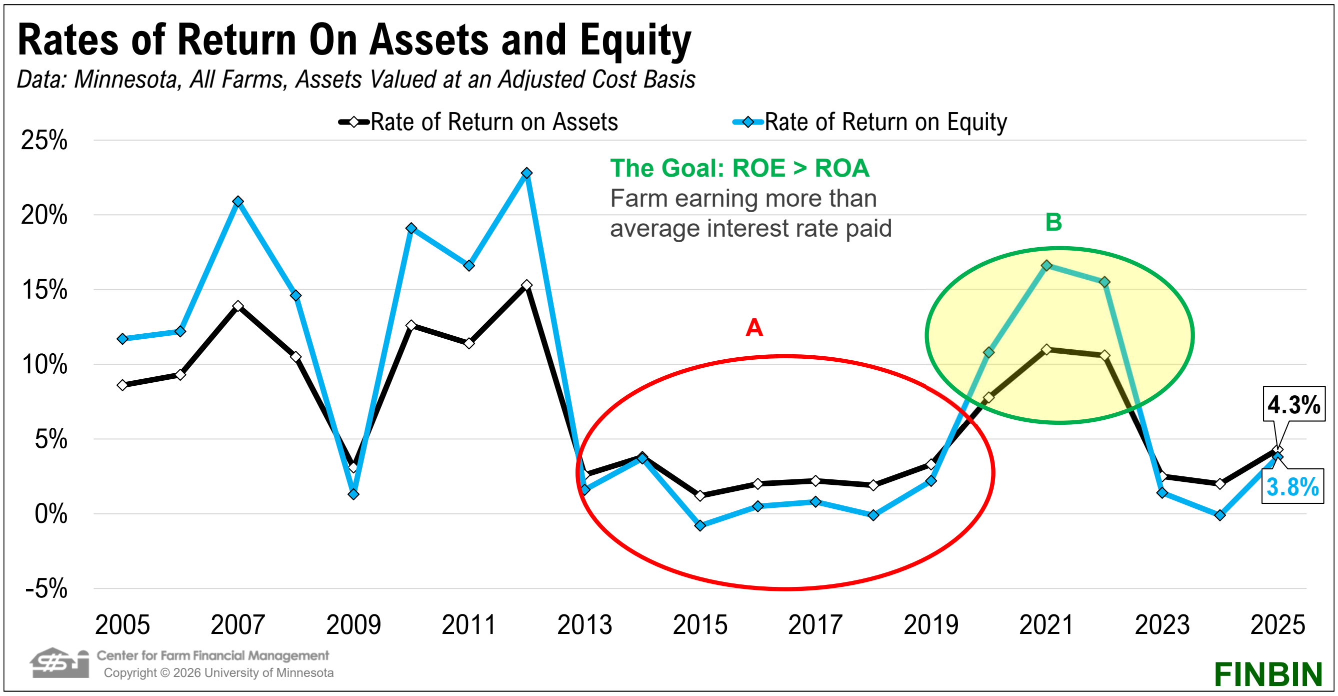

Rates of Return On Assets and Equity
Data: Minnesota, All Farms, Assets Valued at an Adjusted Cost Basis
Rate of Return on Assets
Rate of Return on Equity
The Goal: ROE > ROA
Farm earning more than average interest rate paid
A
B
4.3%
3.8%
25%
20%
15%
10%
5%
0%
-5%
2005
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2021
2023
2025
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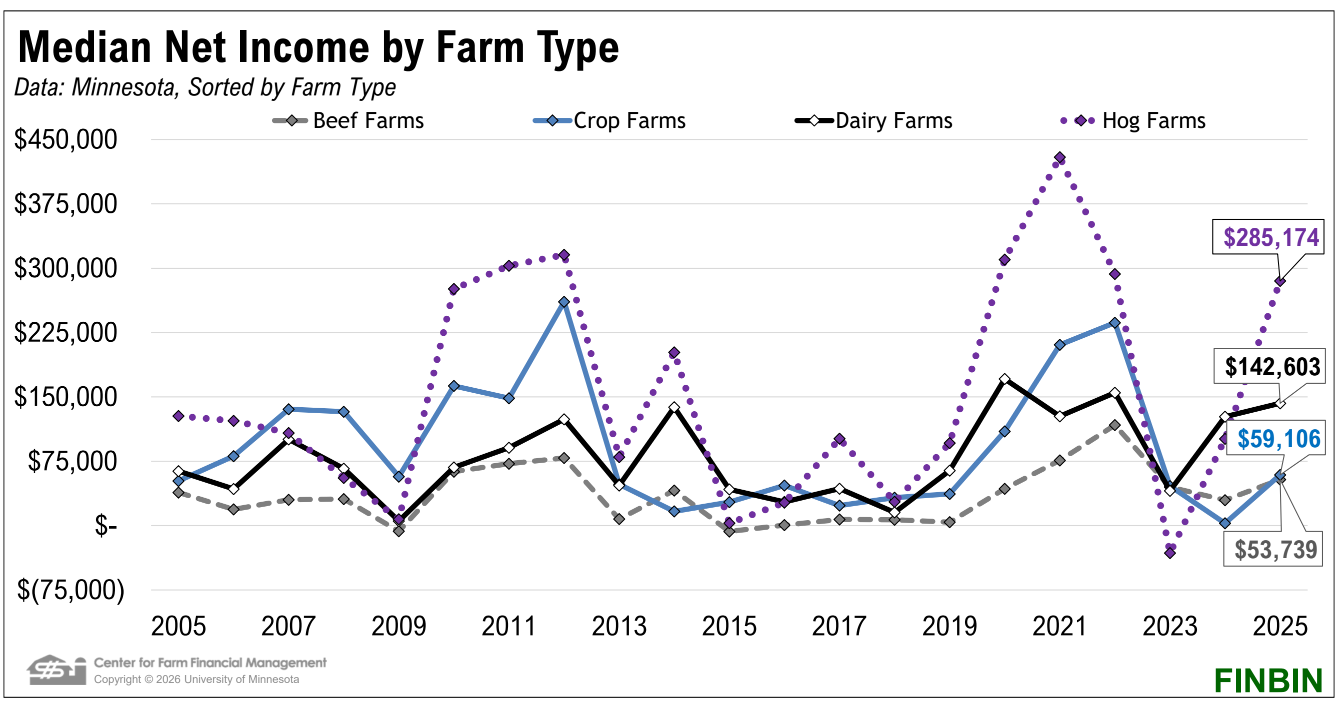

Median Net Income by Farm Type
Data: Minnesota, Sorted by Farm Type
Beef Farms
Crop Farms
Dairy Farms
Hog Farms
$285,174
$142,603
$59,106
$53,739
$450,000
$375,000
$300,000
$225,000
$150,000
$75,000
$-
$(75,000)
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2025
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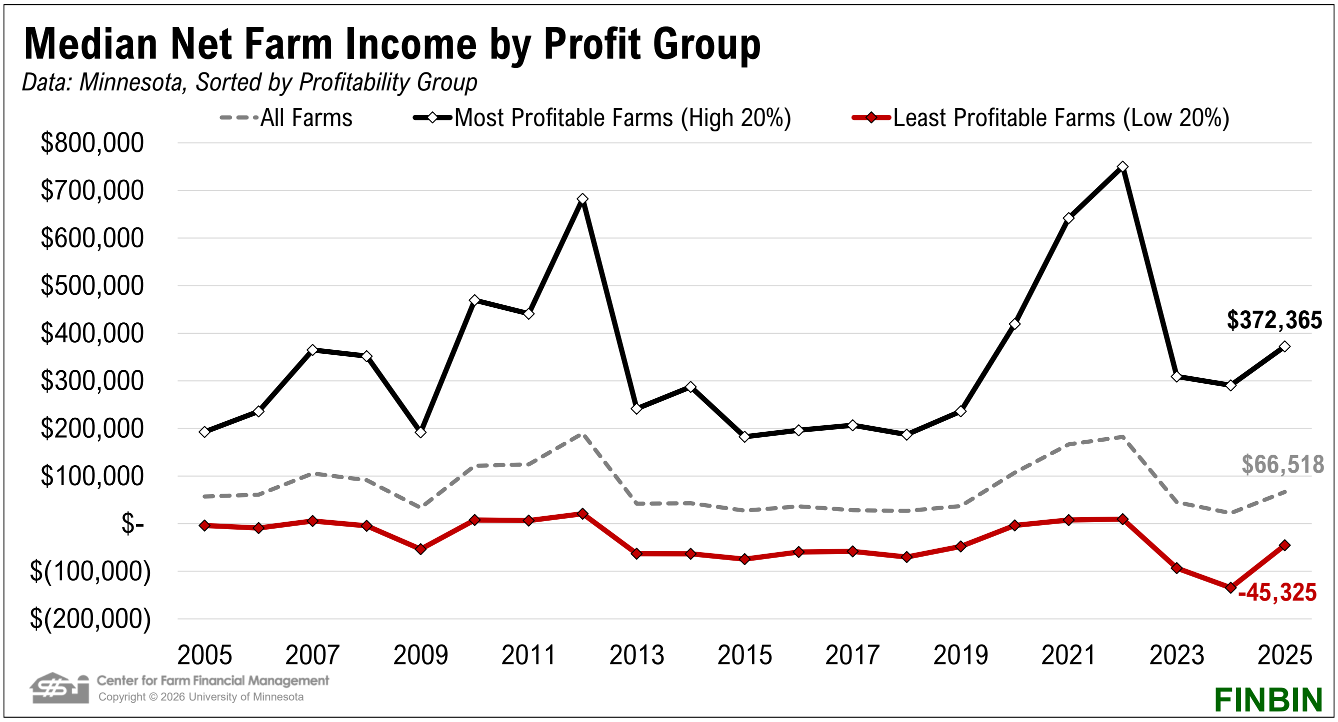

Measures of Profitability - Alternate

- Change in Earned Net Worth %
- Net farm income
- Rate of return on assets (ROA)
- Rate of return on equity (ROE)
- Operating profit margin
- Asset turnover ratio

Farm Finance Scorecard

Alternate PROFITABILITY Ratio

	Vulnerable		Strong
		4% **8%**	
Change in Earned Net Worth (%)			

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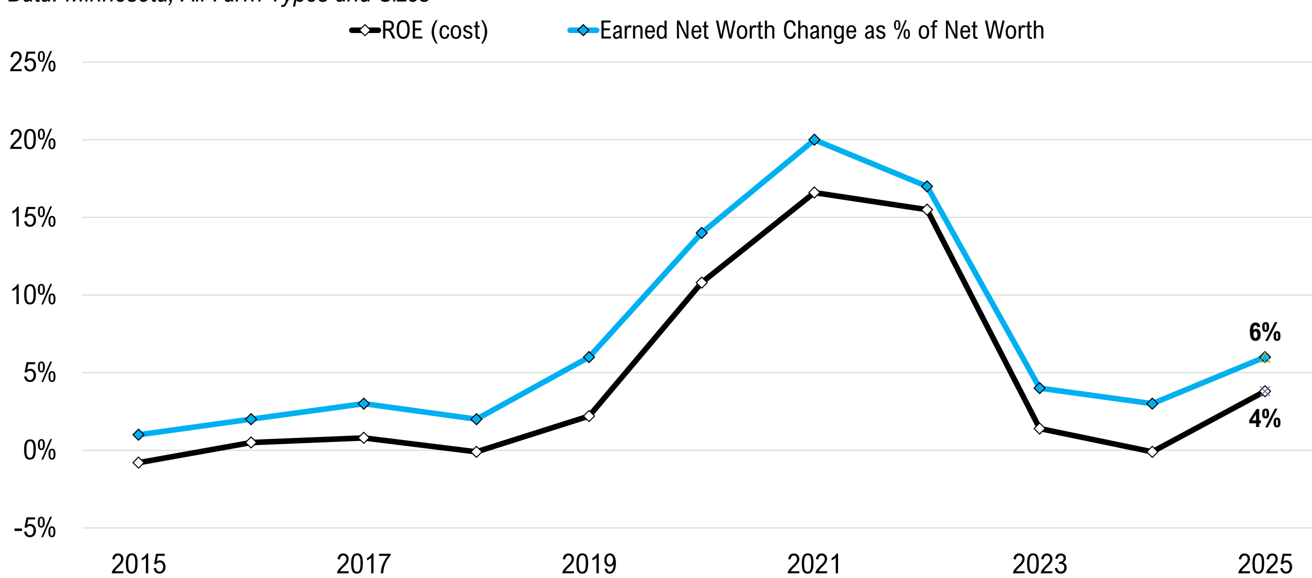
ROE and Earned Net Worth Change %

Data: Minnesota, All Farm Types and Sizes



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Maintaining & Improving **Profitability** Position

- Consider alternative enterprises and income sources
  - Avoid purchases solely for tax purposes
- Weigh asset management decisions
  - Lease
  - Own
  - Custom Hire
- Focus on profit margins – manage costs and price risks
  - Business management versus tax management

Repayment Capacity

Ability of the business to generate enough income to repay its debt and replace assets.

Repayment Capacity Measures

- Debt coverage ratio
- Term debt and finance lease coverage ratio
- Replacement margin coverage ratio

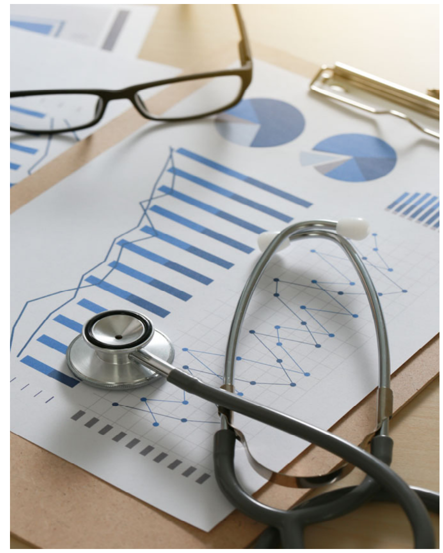
Debt Coverage Calculations

- **(Total) Debt Coverage** – measures the ability of the borrower to cover ALL current interest expenses and scheduled term debt payments

- **Term Debt Coverage** – measures the ability of the borrower to cover scheduled TERM debt payments

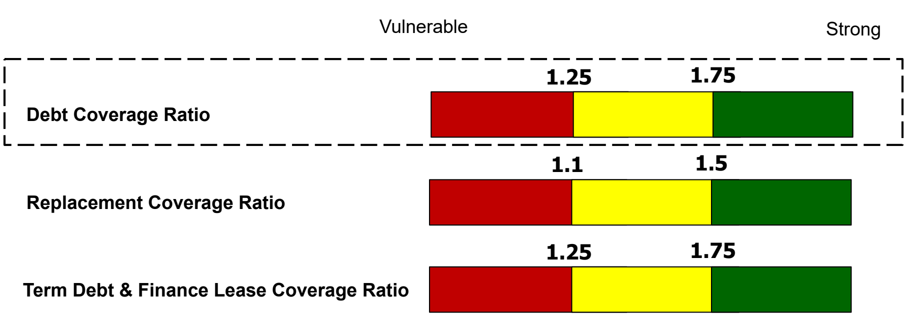
Debt Coverage Ratio

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



Farm Finance Scorecard

Repayment Capacity



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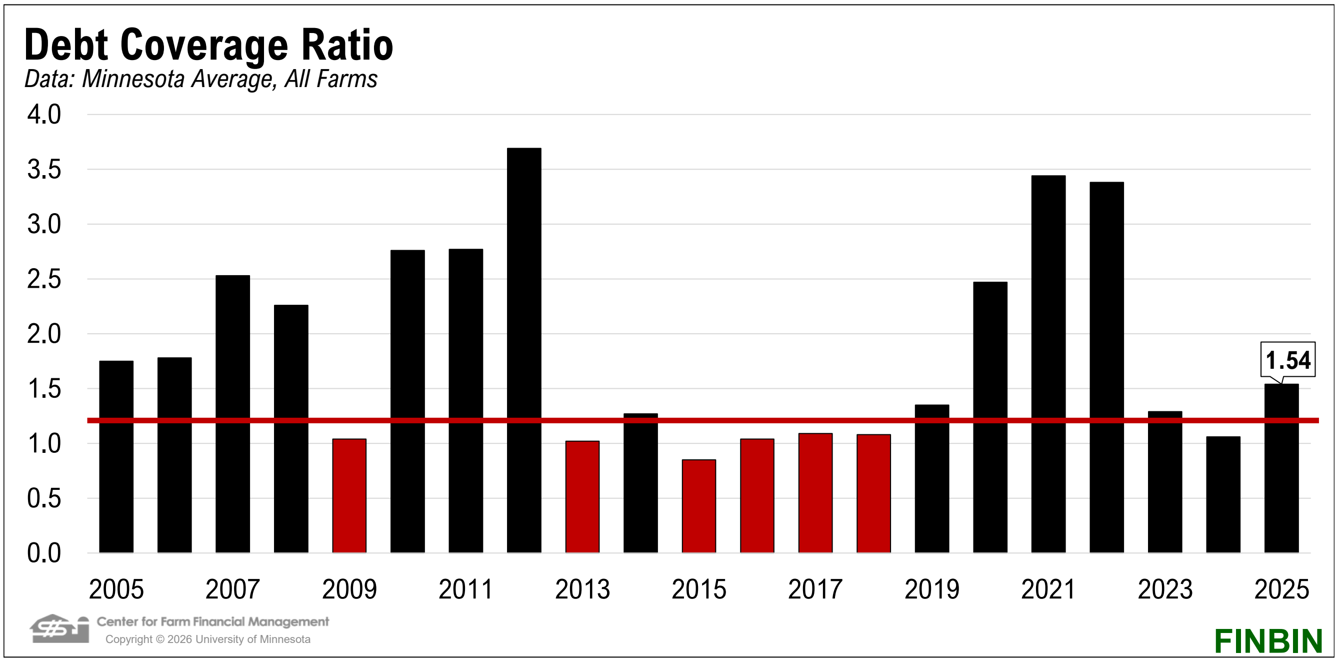
Debt Coverage Ratio
Data: Minnesota Average, All Farms
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
1.54
2005
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2021
2023
2025
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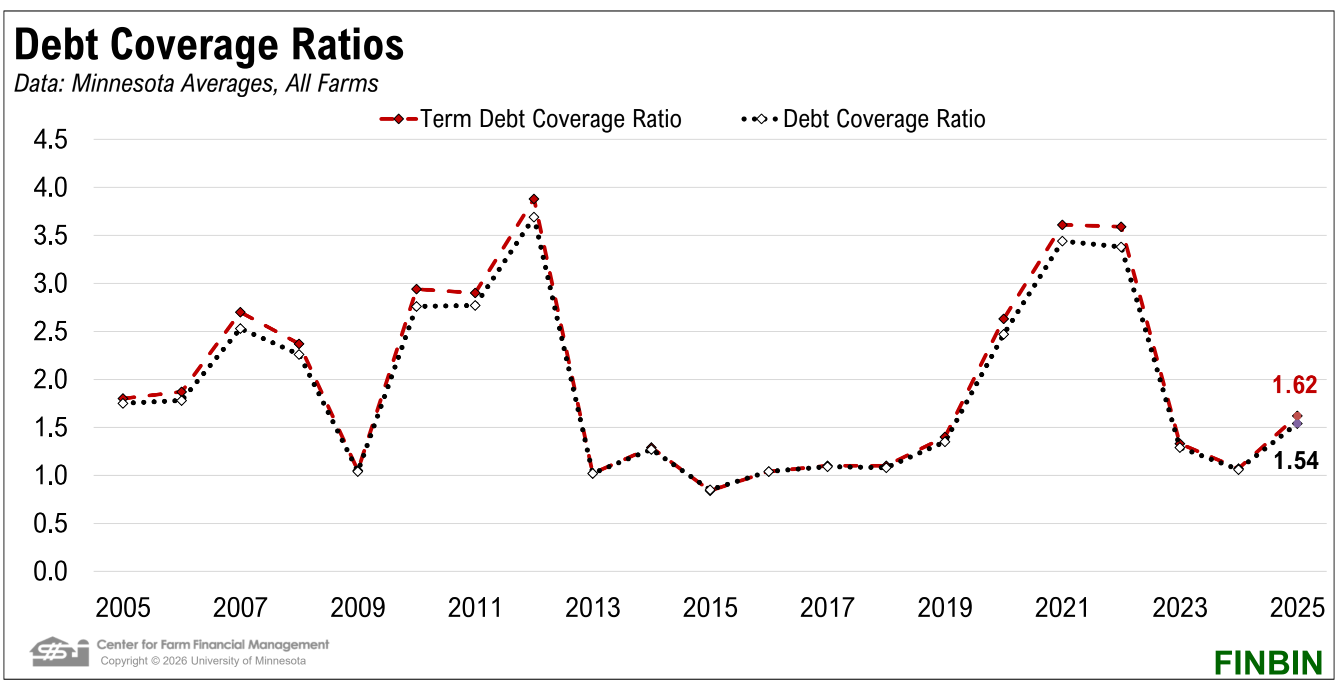
Debt Coverage Ratios
Data: Minnesota Averages, All Farms
Term Debt Coverage Ratio
Debt Coverage Ratio
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
1.62
1.54
2005
2007
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2017
2019
2021
2023
2025
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Maintaining & Improving **<u>Repayment Capacity</u>** Position

- Restructure or re-amortize loans
  - Sell unneeded assets to reduce debt
  - Don't add new debt – reduce capital purchases
- Maximize profits – generate more income
  - Consider off-farm income
- Reduce family living needs from the farm

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Financial Efficiency

Cost control – where is the money going?

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Financial Efficiency Measures

- Operating expense ratio
- Depreciation ratio
- Interest expense ratio
- Net farm income ratio

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Financial Efficiency Ratios

	Operating Expense Ratio
+	Depreciation Expense Ratio
+	Interest Expense Ratio
+	Net Farm Income Ratio
=	100 % of Gross Revenue

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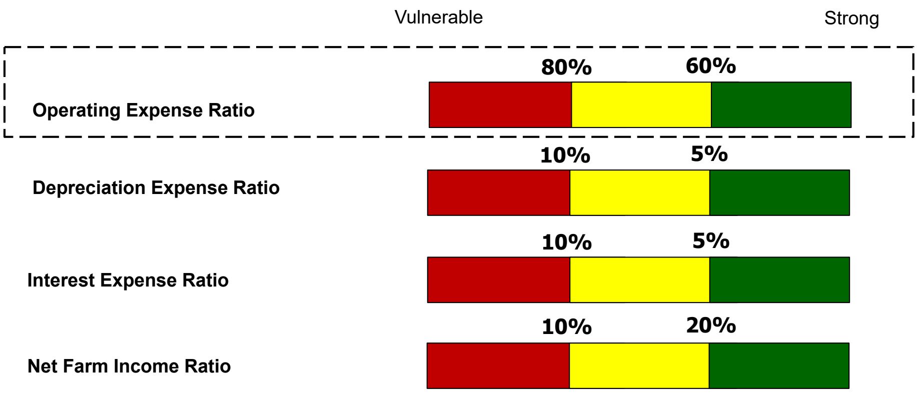
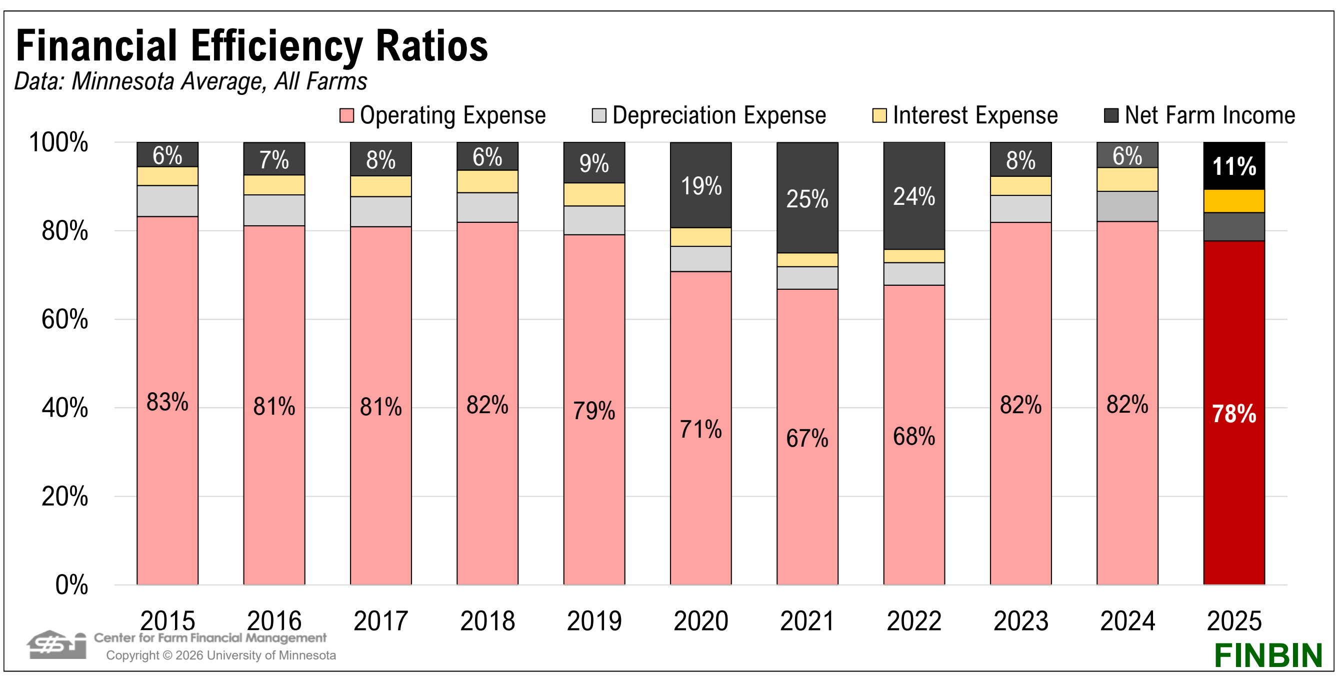
Farm Finance Scorecard

Financial Efficiency





Maintaining & Improving Efficiency Position

- Maximize operational efficiency – maximize profits
  - Scrutinize costs
  - Lock-in revenue
  - Fully employ assets
- Manage debt, payments, and interest rates

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Collateral Analysis

Will the collateral proceeds satisfy loan obligations?

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Other metrics

- Loan to value

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Nate and Sam's Fearless Scorecard

Vulnerable | Strong

	> 75%	65% - 75	< 65%
Loan to value			

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More Tools for You & Your Producers

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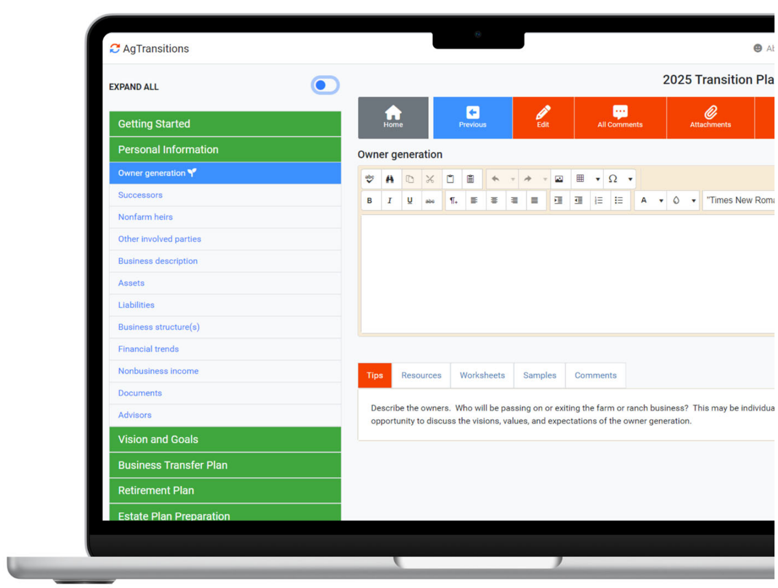
AgTransitions

Moving forward together.

AgTransitions is a free web app designed to help you transition your business to the next generation.



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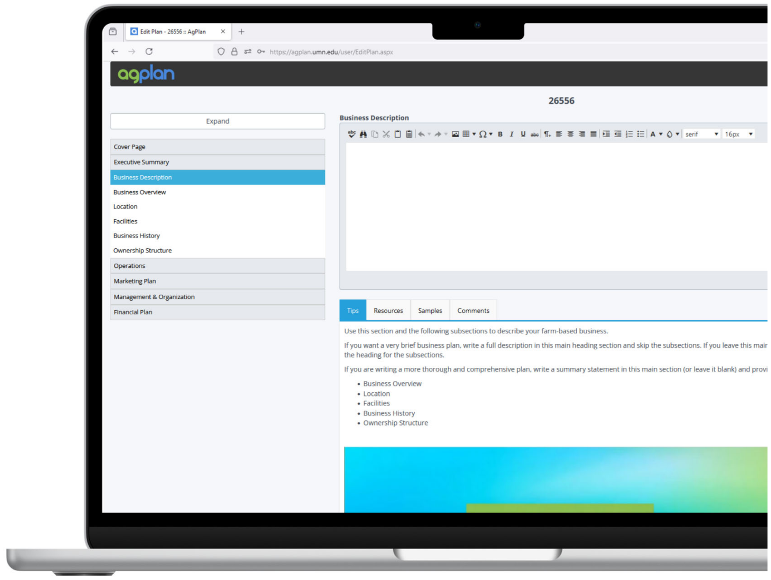
agplan

Developing Your Business Plan with AgPlan

A business plan is your opportunity to tell the world about what your business is all about. AgPlan makes it easy for you.



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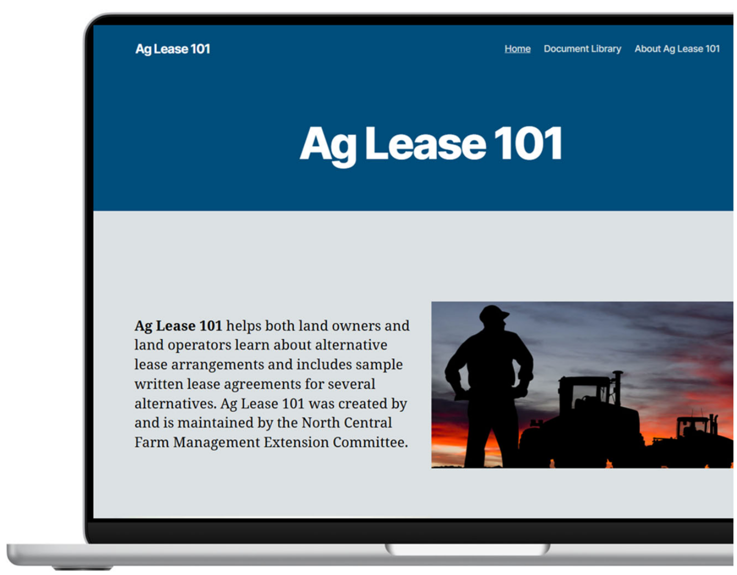
Ag Lease 101

Which lease arrangement fits best for you?

Assists both landowners and land operators explore alternative lease arrangements. Includes sample written lease arrangements for several alternatives.



Ag Lease 101 is a product of the North Central Farm Management Extension Committee

Learn more at aglease101.org

FairRent

Evaluate land rental decisions, including cash, share, and flexible rental agreements with FairRent.

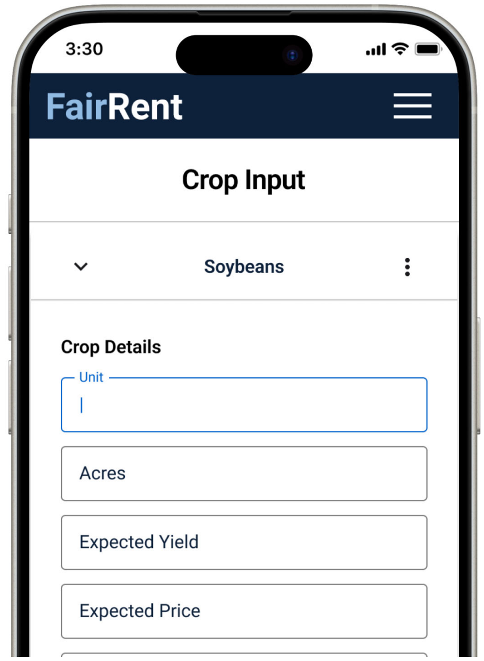
How it works

1
Choose a rental plan
Choose between cash rent, share rent, and seven alternative flexible rental arrangements. The results will help you evaluate potential profits as well as production and price risk.

2
Add your crops
Enter projected yields, prices and expenses for each crop that will be grown. Add crop insurance entries to show how crop insurance can protect profits at low yields and prices.

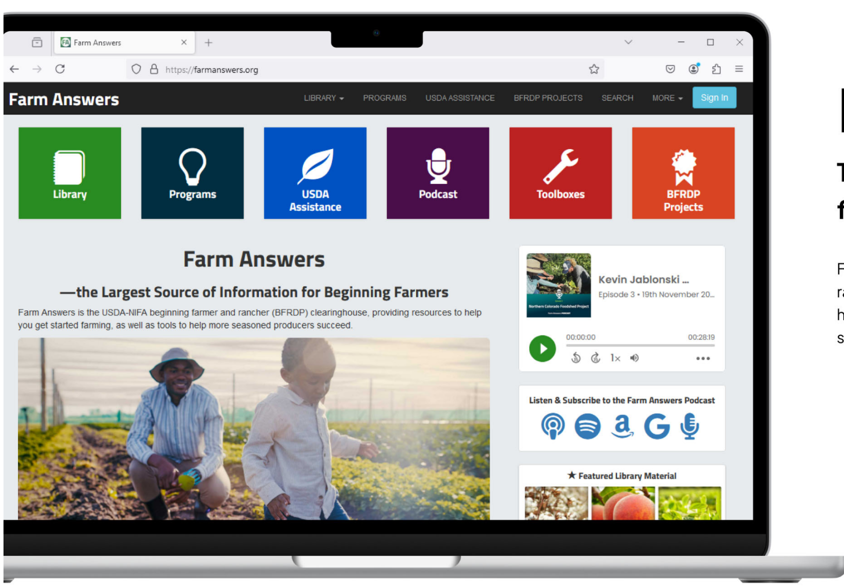
3
Enter Overhead Expenses
Estimating overhead expenses is hard. FairRent makes it easy by distributing whole farm totals equally across all acres farmed.

4
Calculate Report
Bidding on rental land involves a lot of risk. FairRent helps you evaluate that risk by calculating breakevens and profit levels at various combinations of yields and prices.



FairRent is a product of the Center for Farm Financial Management

Learn more at fairrent.umn.edu



Farm Answers

The Largest Source of Information for Beginning Farmers

Farm Answers is the USDA-NIFA beginning farmer and rancher (BFRDP) clearinghouse, providing resources to help you get started farming, as well as tools to help more seasoned producers succeed.

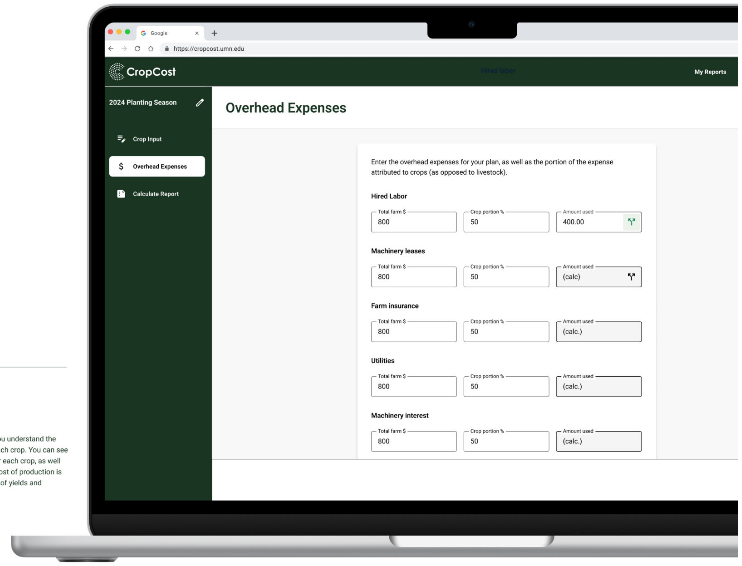
Farm Answers is a product of the Center for Farm Financial Management

Learn more at farmanswers.org

CropCost

Determine the cost of production for each of your crops!

CropCost helps you identify the cost of production for each crop you grow, as well as breakeven cost of production at varying yields and expense amounts.



How it works

1
Choose a plan
Choose between specialty/produce crops or commodity/field crops as your plan type.

2
Add your crops
Enter yields, prices, and expenses for each crop you grow.

3
Enter overhead expenses
Estimating overhead expenses can be hard. CropCost makes it easy by distributing whole farm totals across crops grown.

4
Calculate report
CropCost reports help you understand the cost of production for each crop. You can see the returns estimated for each crop, as well as what the breakeven cost of production is at various combinations of yields and expenses.

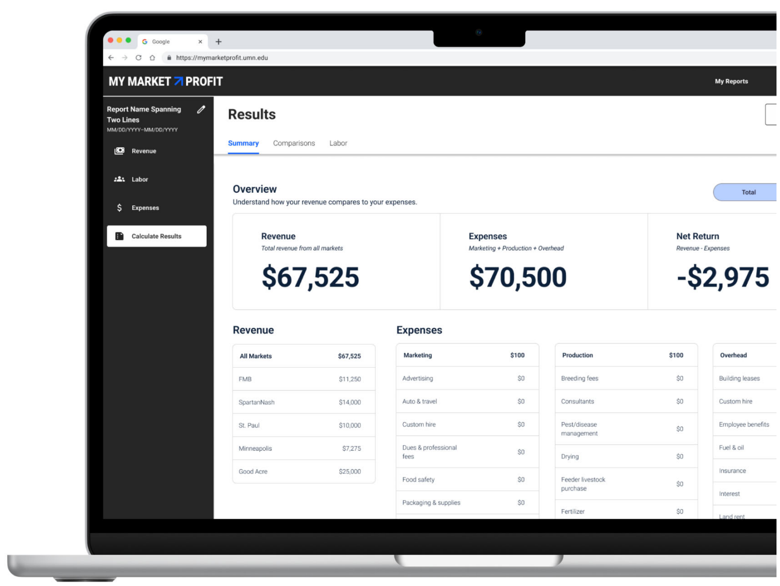
CropCost is a product of the Center for Farm Financial Management

Learn more at cropcost.umn.edu

MY MARKET ↗ PROFIT

Accurately determine your markets' profitability.

With My Market Profit you can identify the costs, returns and profits for each market, so you can make more informed decisions on where to sell your products.



My Market Profit is a product of the Center for Farm Financial Management

Learn more at mymarketprofit.umn.edu