
Financial Stress Testing



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Dealing With Financial Stress

- Diagnosing a farm business problem
- Short term financial stress
- Longer term financial stress
- Is the farm large enough

Diagnosing a Farm Business Problem

- Diagnostic Component

- Identifying the Problem

- liquidity
 - solvency
 - profitability
 - financial efficiency
 - repayment capacity

Example Farm Liquidity Measure

■ Current Ratio

□ (current farm assets) / (current farm liabilities)

| | | |
|-------------------------------|--------|--------|
| 10) TOTAL CURRENT FARM ASSETS | 54,247 | 52,817 |
| 43) TOTAL CURRENT LIABILITIES | 45,199 | 38,238 |

□ $(\$52,817)/(\$38,238) = 1.38$

Low Stress

High Stress



Example Farm Solvency Measure

■ Debt-to-Asset Ratio

□ (total farm liabilities) / (total farm assets)

| | | | |
|--|---------|---------|---|
| 40) TOTAL CURRENT FARM LIABILITIES | 45,199 | 38,238 | |
| 48) TOTAL NON-CURRENT FARM LIABILITIES | 231,504 | 222,071 | + |
| 10) TOTAL CURRENT FARM ASSETS | 54,247 | 52,817 | |
| 24) TOTAL NON-CURRENT FARM ASSETS | 747,100 | 739,330 | + |

□ $(\$260,309)/(\$792.147) = 0.328$ (33%)

Low Stress

High Stress

30%

60% or more



Example Farm Profitability Measure

■ Rate of Return on Farm Assets

- $\{(\text{net farm income from operations}) + (\text{interest expense}) - (\text{opportunity cost for unpaid labor})\} / \{\text{total farm assets}\}$

| | | |
|-------------------------------------|---------|--------|
| 58) Net Farm Income From Operations | (23-57) | 14,345 |
| 56) TOTAL INTEREST EXPENSE | (54+55) | 16,474 |

For Unpaid labor we used \$10,000 (\$5,000 Difference between Off farm income and Family living, Plus \$5,000 Taxes from Actual Cash flow)

For total farm assets we took an average of Beginning and Ending Totals of Current and Non-Current Farm Asset (\$796,746)

$$\square (\$14,345 + \$16,474 - \$10,000) / (\$796,746) = .026$$

Example Farm Profitability Measure

■ ROA 2.6%

Low Stress

High Stress



Example Farm Financial Efficiency Measure

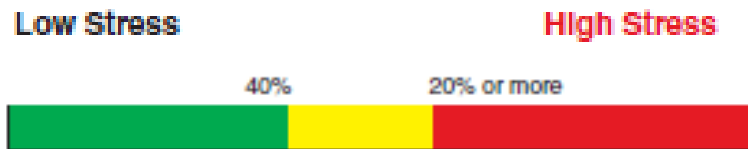
■ Asset Turnover Ratio

□ {gross farm revenue} / {total farm assets}

| | | |
|------------------------|----------|---------|
| 20) Gross Farm Revenue | (5+9+19) | 124,551 |
|------------------------|----------|---------|

For total farm assets we took an average of Beginning and Ending Totals of Current and Non-Current Farm Asset (\$796,746)

□ $(\$124,551) / (\$796,746) = .1563 (15.63\%)$



Example Farm Repayment Capacity Measure

- Term Debt (and Capital Lease) Coverage Ratio
 - (Net Farm Income from Operations + Non-farm Income + Depreciation Expense + Interest on Term Debt (and Capital Leases) – Taxes Paid – Family Withdrawals) / (Principle and Interest Payments to Be made on All Term Debt Next Year)

| | | |
|-------------------------------------|---------|--------|
| 58) Net Farm Income From Operations | (23-57) | 14,345 |
| 13) Wages and Salaries | | 60,000 |

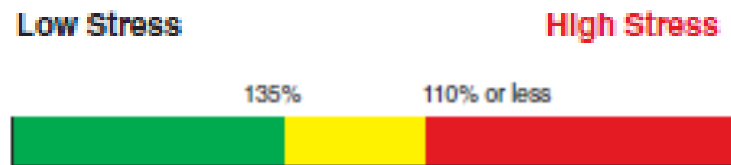
Example Farm Repayment Capacity Measure



| | | | |
|------------------------------------|-------------|--------|-----|
| 52) Depreciation Expense | | 7,770 | |
| 51) Non-Real Estate | - Interest | 385 | |
| 53) Real Estate | - Interest | 9,793 | + |
| 46) Income & Social Security Taxes | | 5,000 | |
| 45) Family Living | | 65,000 | |
| 51) Non-Real Estate | - Interest | 385 | |
| 52) | - Principal | 5,497 | |
| 53) Real Estate | - Interest | 9,793 | |
| 54) | - Principal | 3,937 | Sum |

Example Farm Repayment Capacity Measure

■ $(\$14345 + \$60,000 + \$7,770 + \$10,178 - \$5,000 - \$65,000) / (\$19,612) = 1.13 (113\%)$



Diagnosing a Farm Business Problem

- Diagnostic Component (continued)
 - Identifying Potential Causes
 - Scale
 - Fixed costs spread over too few units
 - Labor supply too large

Diagnosing a Farm Business Problem

□ Identifying Potential Causes (continued)

■ Employment

- Must fully employ the labor resources
- May need to eliminate excess hired labor
- May need a more appropriate mix between farm and off-farm employment
- Add a labor intensive enterprise
- expand

Diagnosing a Farm Business Problem

- Identifying Potential Causes (continued)
 - Efficiency
 - Physical performance
 - Dictates economic performance (returns over costs)
 - May have a financial efficiency problem (asset turnover, etc.)

Diagnosing a Farm Business Problem

□ Identifying Potential Causes (continued)

■ Debt-Leverage

- Too little debt limits growth
- Too much debt accelerates losses
- Influences profitability through interest costs
- Influences liquidity through debt service
- Influences solvency when evaluated relative to collateral

Diagnosing a Farm Business Problem

- Is the problem short term in nature
- Has a longer term shift occurred
- Is the problem external or internal
- Early and accurate assessment of the problem can prevent the need for drastic measures

Short Term Financial Stress

- Localized drought
- Prices
- Other shortfall in current income
- Rising interest rates
- Poor debt structure
- Drop in collateral values

Short Term Financial Stress

- Respond by:
 - Managing cash flow
 - Managing Liabilities
 - Managing Assets
- Early signs generally show up in a cash shortfall

Short Term Financial Stress

- Managing cash flow
 - ❑ Control costs (sharpen pencil)
 - ❑ Re-negotiate cash rents
 - ❑ Reduce capital expenditures (repair rather than replace)
 - ❑ Reduce family withdrawals
 - ❑ Rent out un-used facilities – excess equipment (custom work)
 - ❑ Increase non-farm income

Short Term Financial Stress

■ Manage Liabilities

- ❑ Extend loan terms (buy time)
- ❑ Interest only payments (use only if shortfall is very temporary)
- ❑ Increase collateral to maintain borrowing, or mortgage another parcel of land
- ❑ Reduce debt using off farm sources, or sale of unproductive assets
- ❑ Re-finance at a lower rate

Short Term Financial Stress

- Manage Assets
 - Liquidate cash and investments
 - Sell inventories
 - Sell capital assets
 - Be aware of tax consequences

Longer Term Financial Stress

- The problem is internal
- Strategies to buy time will generally not work. May appear to work in the short run, but problems will re-appear.
- Need to increase profit margins, and asset turnover
- May need to address immediate concerns first (sell assets)

How Big Does the Business Need to Be

■ Internal Dimension

- Low cost – economies of scale
- Meets operators needs for income

■ External Dimension

- Size permits access to markets, information, technology, etc.

Operator Income Needs Analysis

- What is the required level of net income
- What gross income is typically needed to produce this amount of net income
- How much investment will be required to produce this much gross income

Operator Income Needs Analysis

- 1. Net income needed to cover family living, equity growth, etc. (\$15,000.00)
- 2. Net income from operations ratio
 - Net farm income / gross farm revenues (.12)
- 3. Asset turnover ratio
 - Gross farm revenues / total farm assets (.16)
- 4. Gross revenue required
 - Net income needed (1)/NFIFO (2) (\$120,000.00)
- 5. Assets required to generate gross requirement
 - Required gross (4)/Asset turnover (3) (\$750,000.00)

Operator Income Needs Analysis – Assume they want to Farm Full Time

- 1. Net income needed to cover family living, equity growth, etc. (\$65,000.00)
- 2. Net income from operations ratio
 - Net farm income / gross farm revenues (.12)
- 3. Asset turnover ratio
 - Gross farm revenues / total farm assets (.16)
- 4. Gross revenue required
 - Net income needed (1)/NFIFO (2) (\$541,000.00)
- 5. Assets required to generate gross requirement
 - Required gross (4)/Asset turnover (3)
(\$3,400,000.00)

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- OSU Farm and Ranch Stress Test
Publication AGEC-237
 - Please Complete a Quick Survey Regarding
This Webinar
 - https://okstatecasnr.az1.qualtrics.com/jfe/form/SV_8iR8TZLwg6my8Jf
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