

## ***2. Benchmarking Farm Financials During Challenging Times***

### **Robin Reid**

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### **Mark Dikeman**

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*Mark Dikeman is the Associate Director of the Kansas Farm Management Association. Before working in this position, he worked as Coordinator of Professional Development and Training with KFMA and as an Extension Ag Economist in the Holton KFMA office. Mark received a B.S. degree in Animal Sciences and Industry and a M.S. degree in Agricultural Economics from Kansas State University.*

### **Abstract/Summary**

*In these times of low agricultural profitability, knowing your financial ratios and how they compare to similar farms in Kansas can shed light on strengths and weaknesses in the farm business. Robin Reid presents a tool to benchmark 11 common farm financial ratios against different subsets of farms in the Kansas Farm Management Association. Both 10-year averages and recent financial ratios (2016) are used to reveal a distribution of where a farm falls compared to its peers. Mark Dikeman presents a decision tree that points to what might be contributing to vulnerable financial ratios and how improvements can be made.*

# Benchmarking Farm Financials During Challenging Times

Robin Reid  
Extension Associate  
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Mark Dikeman  
Associate Director  
Kansas Farm Management Association



## Balance Sheet

ASSETS:				LIABILITIES AND NET WORTH:			
	January 1	December 31	Average		January 1	December 31	Average
1) Cash	\$13,019	\$7,473	\$10,246	16) Accounts Payable/Accrued Expenses	\$550	\$800	\$675
2) Accounts Receivable	\$205	\$550	\$378	17) Income & Social Security Taxes Payable	\$16,500	\$17,810	\$17,155
3) Fertilizer and Supplies	\$67,905	\$80,600	\$74,253	18) Current Portion: Deferred Taxes	\$0	\$0	\$0
4) Investment in Growing Crops	\$45,563	\$30,375	\$37,969	19) Current Loans Due Within One Year	\$130,048	\$150,000	\$140,024
5) Crops Held for Sale and Feed	\$50,850	\$52,875	\$51,863	20) Current Portion of Term Debt	\$80,578	\$72,019	\$76,299
6) Market Livestock	\$37,800	\$36,750	\$37,275	21) Accrued Interest	\$28,477	\$25,660	\$27,069
7) Other Current Assets	\$0	\$0	\$0	22) TOTAL CURRENT LIABILITIES	\$256,153	\$266,289	\$261,221
8) TOTAL CURRENT ASSETS	\$215,342	\$208,623	\$211,982	23) Noncurrent Portion: Deferred Taxes	\$0	\$0	\$0
9) Breeding Livestock	\$295,100	\$296,200	\$295,650	24) Noncurrent Portion: Intermediate Loans	\$154,933	\$112,497	\$133,715
10) Machinery and Equipment	\$465,035	\$423,279	\$444,157	25) Noncurrent Portion: Long-term Loans	\$526,495	\$496,552	\$511,523
11) Buildings	\$40,201	\$71,040	\$55,621	26) TOTAL NONCURRENT LIABILITIES	\$681,428	\$609,049	\$645,238
12) Investments in Cooperatives	\$25,453	\$27,763	\$26,608	27) TOTAL FARM LIABILITIES	\$937,581	\$875,338	\$906,459
13) Land	\$1,904,000	\$1,904,000	\$1,904,000	28) FARM NET WORTH	\$2,007,549	\$2,055,567	\$2,031,558
14) TOTAL NONCURRENT ASSETS	\$2,729,789	\$2,722,282	\$2,726,036	29) TOTAL LIABILITIES AND NET WORTH	\$2,945,131	\$2,930,905	\$2,938,018
15) TOTAL FARM ASSETS	\$2,945,131	\$2,930,905	\$2,938,018				



# Income Statement

Farm Business Receipts:		
1A) Crop Cash Sales .....	\$503,518	
1B) Ending Crop Inventory .....	\$83,250	
1C) Beginning Crop Inventory .....	\$96,413	
1D) Crop Insurance Proceeds .....	\$0	
1) Accrual Gross Revenue from Crops .....	\$490,356	
2A) Livestock and Milk Cash Sales .....	\$141,045	
2B) Ending Livestock Inventory .....	\$332,950	
2C) Beginning Livestock Inventory .....	\$332,900	
2D) Livestock Purchases.....	\$5,000	
2) Accrual Gross Revenue from Livestock and Milk.....	\$136,095	
3) Agricultural Program Payments .....	\$46,336	
4) Accounts Receivable Adjustment.....	\$345	
5) Other Farm Income .....	\$13,200	
6) ACCRUAL GROSS FARM REVENUE.....		\$686,332

Farm Business Expenses:		
7) Purchased Feed.....	\$21,583	
8) VALUE OF FARM PRODUCTION .....		\$664,749
9) Labor Hired .....	\$40,907	
10) Repairs .....	\$57,129	
11) Seed .....	\$67,074	
12) Fertilizer .....	\$90,685	
13) Herbicide and Insecticide.....	\$69,358	
14) Veterinarian Expense.....	\$6,760	
15) Storage & Marketing .....	\$2,540	
16) Machinery Hire and Lease.....	\$14,545	
17) Fuel and Utilities .....	\$29,179	
18) Property Tax .....	\$1,420	
19) Real Estate Tax.....	\$4,880	
20) General Farm Insurance .....	\$5,470	
21) Crop Insurance Premiums .....	\$15,565	
22) Cash Rent.....	\$46,240	
23) Miscellaneous .....	\$11,150	
24) Expense Inventory Adjustment .....	\$12,945	
25) ACCRUED OPERATING EXPENSES .....		\$497,430
26A) Cash Interest Paid.....	\$44,565	
26B) Accrued Interest Adjustment.....	-\$2,817	
26) Total Interest Expenses.....	\$41,748	
27) Depreciation .....	\$46,947	
28) TOTAL FARM BUSINESS EXPENSES.....		\$586,125
29) NET FARM INCOME.....		\$100,206



# Financial Ratios

## • Liquidity

- Current Ratio=Current Farm Assets/Current Farm Liabilities
- Working Capital= Current Farm Assets - Current Farm Liabilities
- Working Capital Ratio= Working Capital/Gross Farm Revenue

**Case Farm:**

**.81**

**(\$49,239)**

**-7.2%**

## • Solvency

- Debt/Asset Ratio= Total Farm Liabilities/Total Farm Assets

**30.9%**



# Financial Ratios

- Profitability

	<u>Case Farm:</u>
• Rate of Return on Farm Assets (ROA)	2.79%
• Rate of Return on Farm Equity (ROE)	1.98%
• Operating Profit Margin Ratio	12.3%
• Net Farm Income	\$100,206

# Financial Ratios

- Financial Efficiency

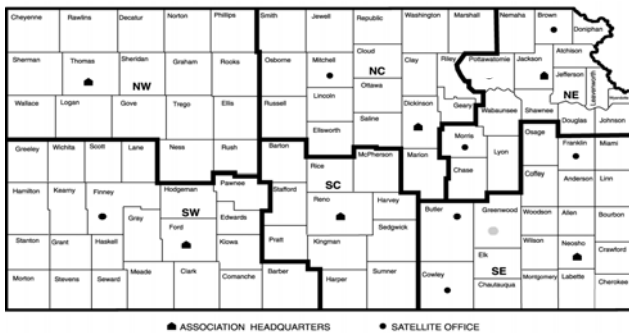
	<u>Case Farm:</u>
• Asset Turnover Ratio	22.6%
• Operating Expense Ratio	72.5%
• Depreciation Expense Ratio	6.8%
• Interest Expense Ratio	6.1%
• Net Farm Income Ratio	14.6%

# Benchmarking

- Year-to-Year comparison of your operation
- Against similar operations



## KSU-Farm Financial Benchmarking Tool



- 1,017 KFMA Farms in 2016 benchmark
- 1,245 KFMA Farms in 10-Year benchmark
  - (6 out of 10 years to be included)

- |                          |                                |                                |
|--------------------------|--------------------------------|--------------------------------|
| -Current Ratio           | -Working Capital Ratio         | -Debt-to-Asset Ratio           |
| -Operating Profit Margin | -Rate of Return on Farm Assets | -Rate of Return on Farm Equity |
| -Asset Turnover Rate     | -Operating Expense Ratio       | -Depreciation Expense Ratio    |
| -Interest Expense Ratio  | -Net Farm Income Ratio         |                                |



# Categories

- State-level
  - Dairy
  - Operator Age (<40 years, 40-60 years, 60+ years)
  - Acres (<500, 500-1000,1000-2000,2000+), Cattle (None, Feedyard, <100 Cows, >100 Cows)
  
- Regional Level
  - Acres
  - Cowherd
  - Backgrounding/Feedyard




Find it on our website  
[www.AgManager.info](http://www.AgManager.info)  
 under "Tools"

- Need Microsoft Excel
- Enable Macros
- Will be updated each year

**KSU-Farm Financial Benchmarking Tool**

A spreadsheet tool to for benchmarking your farm's financial measures based on regions of Kansas, crop acres, and cattle numbers

Version: 8.15.2016



**INTRODUCTION**  
 The KSU-Farm Financial Benchmarking tool is designed for producers to compare their financial ratios to farms of similar region, size and enterprise type. The percentage of farms that falls within a range of ratio values gives a distribution so a producer can see where they rank among their peers. Ten-year averages and past year values give two different distributions to benchmark from.


**INSTRUCTIONS FOR THE USER:**  
 Be sure to "Enable Content" and "Enable Macros" for the spreadsheet to function correctly. Select the tab for what region of Kansas you would like to benchmark against or "State" to benchmark additional categories. Use the dropdown menus in the tool boxes to select the benchmark category. If the benchmark shows N/A, you have mismatched categories and need to "Start Over". You may add your own farm values to be graphed against benchmark values in the green boxes or leave them as 2015 benchmark averages.

**FOR MORE INFORMATION:**

Developed by:	With Assistance From:	
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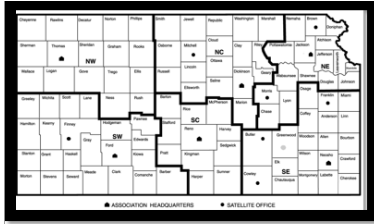
**ACKNOWLEDGEMENTS:**  
 Funded in part through the 2016/2017 CoBank Research Fellow program.

**KANSAS STATE UNIVERSITY** | Agricultural Economics



- Introduction
- State
- NorthWest
- NorthCentral
- NorthEast
- SouthEast
- SouthCentral
- SouthWest
- Balance Sheet
- Income Statement





**BENCHMARK CATEGORY**

Benchmark by:  Select category here using dropdown lists

Category:

Cattle:

Start Over

Print Summary

Enter Your Farm Values

Return to 2016 Averages

**YOUR FARM VALUES\***

Current Ratio:	2.35
Working Capital Ratio:	48.5%
Debt to Asset Ratio:	21.0%
Operating Profit Margin:	-0.1%
Rate of Return on Farm Assets:	0.0%
Rate of Return on Farm Equity:	-1.1%
Asset Turnover Rate:	18.8%
Operating Expense Ratio:	72.2%
Depreciation Expense Ratio:	12.2%
Interest Expense Ratio:	4.4%
Net Farm Income Ratio:	11.2%

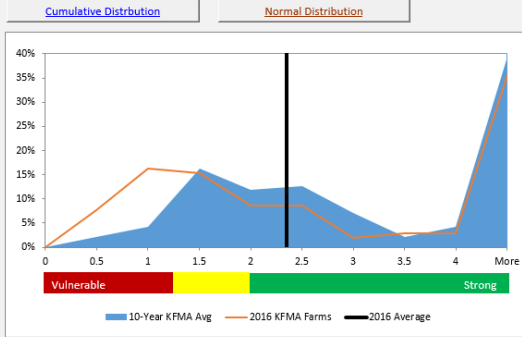
\*Defaults to Averages for 2016 if not entered

### KSU FARM FINANCIAL BENCHMARKING TOOL-State of Kansas

Benchmarked by: Crop Acres Category: 1000-2000 Cattle: <100 Cows

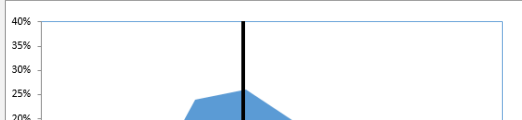
**Current Ratio**

	2016	10-Year
0	0.0%	0.0%
0.5	7.7%	2.1%
1	16.3%	4.2%
1.5	15.4%	16.2%
2	8.7%	12.0%
2.5	8.7%	12.7%
3	1.9%	7.0%
3.5	2.9%	2.1%
4	2.9%	4.2%
More	35.6%	39.4%
Count	104	142
Average	2.3	3.0



**Working Capital Ratio**

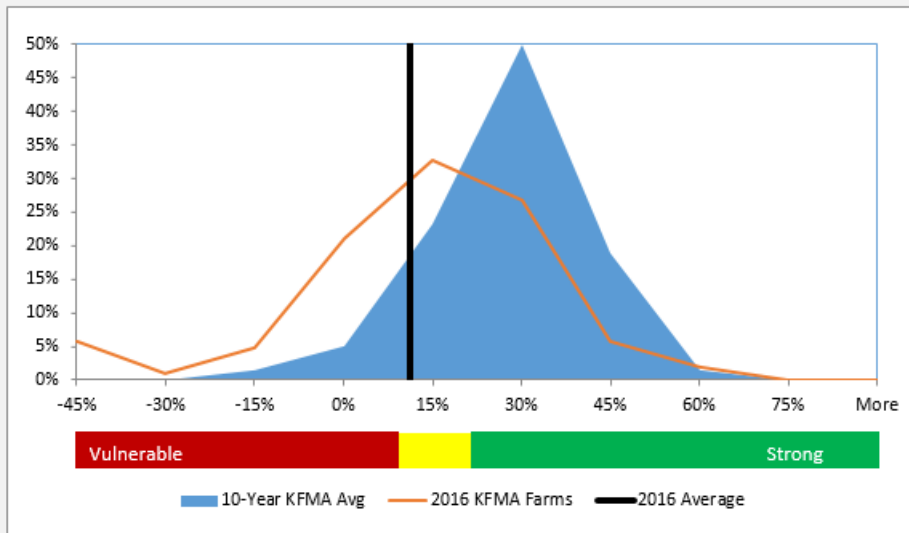
	2016	10-Year
-50%	3.8%	1.4%
-25%	6.7%	0.7%
0%	13.5%	4.2%
25%	18.3%	23.9%
50%	15.4%	26.1%
75%	12.5%	19.0%



### Net Farm Income Ratio

	2016	10-Year
-45%	5.8%	0.0%
-30%	1.0%	0.0%
-15%	4.8%	1.4%
0%	21.2%	4.9%
15%	32.7%	23.2%
30%	26.9%	50.0%
45%	5.8%	19.0%
60%	1.9%	1.4%
75%	0.0%	0.0%
More	0.0%	0.0%
Count	104	142
Average	0.11	0.21

Net Farm Income Avg.  
\$49,696    \$104,832



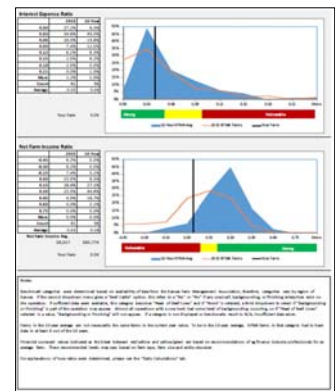
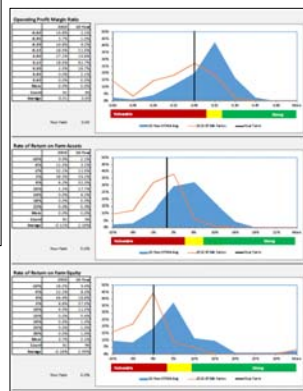
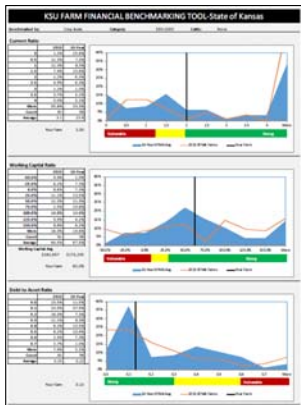
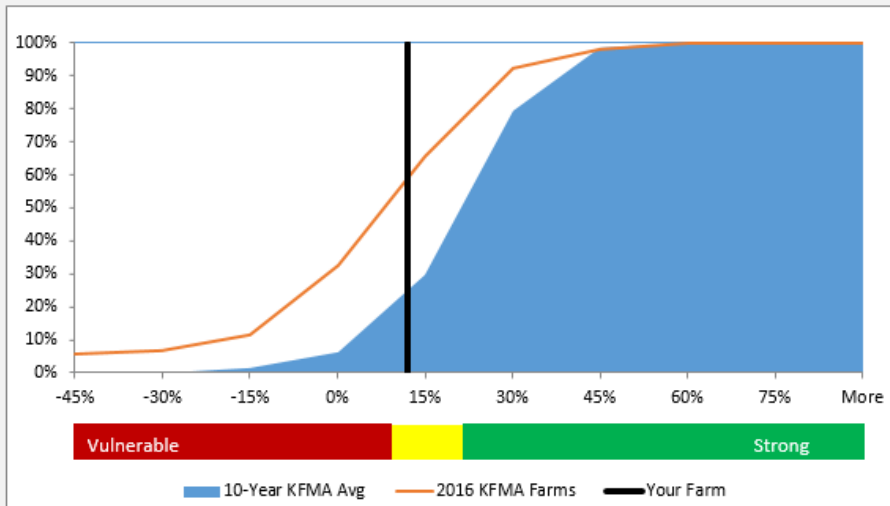
### Net Farm Income Ratio

	2016	10-Year
-45%	5.8%	0.0%
-30%	6.7%	0.0%
-15%	11.5%	1.4%
0%	32.7%	6.3%
15%	65.4%	29.6%
30%	92.3%	79.6%
45%	98.1%	98.6%
60%	100.0%	100.0%
75%	100.0%	100.0%
More	100.0%	100.0%
Count	104	142
Average	0.11	0.21

#### Net Farm Income Avg.

\$49,696    \$104,832

Your Farm    0.12



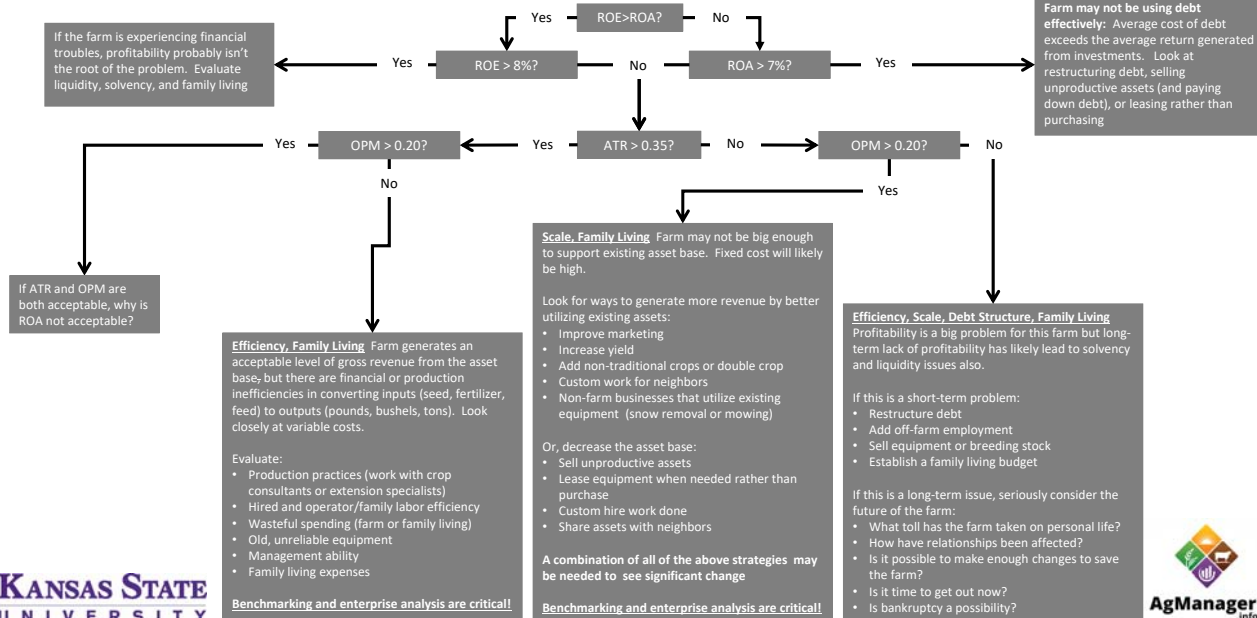


- KSU-Farm Financial Benchmarking tool live demonstration time

## Farms in Financial Distress

- Cause (or causes) of financial distress may be difficult to identify
- Likely did not happen overnight, won't be fixed overnight
- May be exaggerated by people/relationships/emotions
- Commonly linked to problems with:
  - Liquidity
  - Solvency
  - Profitability

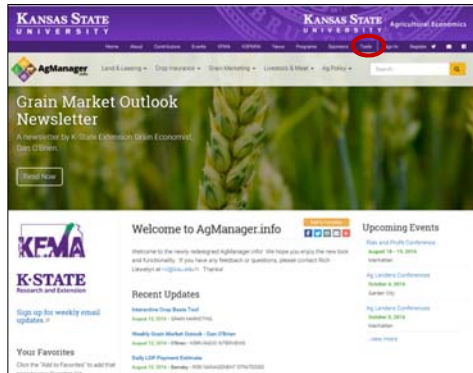
# DuPont Profitability Troubleshooting



## Additional Resources

- ISU File C3-53 – Financial Troubleshooting
- Purdue EC-712-W – Measuring and Analyzing Farm Financial Performance
- Center for Farm Financial Management – Farm Finance Scorecard
- Farm Financial Standards Council – Financial Guidelines for Agriculture

# Time for Questions



Check out our website!  
[www.AgManager.info](http://www.AgManager.info)

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