

Financial Performance and Farm Size

Michael Langemeier¹

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Financial performance often varies by farm type or farm size. This article documents differences in financial performance among farm size categories in the Kansas Farm Management Association.

The following financial performance measures were used in the analysis: total expense ratio, adjusted total expense ratio, economic total expense ratio, profit margin, and asset turnover ratio. The total expense ratio was computed by dividing accrual expenses (cash costs, accrual cost adjustments, and depreciation) by value of farm production. The adjusted total expense ratio was computed by adding unpaid operator and family labor to the expenses included in the total expense ratio and dividing by value of farm production. A ratio below one would indicate that a farm or group of farms is covering accrual expenses and unpaid operator and family labor. The economic total expense ratio was computed by adding the opportunity charge on net worth to the expenses included in the adjusted total expense ratio and dividing by value of farm production. A ratio below one would indicate that a farm is covering accrual expenses, unpaid operator and family labor, and the opportunity charge on net worth. The profit margin ratio was computed by adding interest and subtracting unpaid operator and family labor from net farm income, and dividing the result by value of farm production. The asset turnover ratio was computed by dividing total assets by value of farm production. In addition to reporting financial measures, this article also reports the incidence of financial stress, the percent of farms covering accrual expenses and opportunity costs, and the percent of farms in each profit margin quartile. Farms that were financially stressed were not covering accrual expenses and unpaid operator and family labor, and had a debt to asset ratio above 70 percent.

Farms in the Kansas Farm Management Association with continuous data from 2006 to 2010 were included in the analysis. Table 1 reports the averages for these 1,016 farms. The average total expense ratio, adjusted total expense ratio, and economic total expense ratio was 0.747, 0.865, and 1.045, respectively. Note that the average adjusted total expense ratio was below 1.000. This indicates that, on average, the farms were covering accrual expenses and unpaid operator and family labor. Approximately 65 percent of the farms were able to cover these expenses. In contrast, only 33 percent of the farms were able to cover all costs, including the opportunity charge on net worth. The average profit margin ratio was 0.1834 and the average asset turnover ratio was 0.3259.

Table 2 reports the financial measures for five farm size categories. The farms were sorted into size categories using value of farm production. The total expense ratio was substantially higher for the small farm size category, but similar for farms with a value of farm production greater than \$100,000. The adjusted total expense ratio was below one for farms with a value of farm production greater than \$250,000 while the economic total expense ratio was below one for farms with a value of farm production greater than \$500,000. Because they

¹Michael Langemeier is a Professor in the Department of Agricultural Economics at Kansas State University.

include opportunity costs, comparisons among farms using the adjusted total expense ratio and the economic total expense ratio are more appropriate than comparisons among farms using the total expense ratio. It is particularly problematic to compare the total expense ratio between a group of farms with no hired labor and a group of farms with hired labor. It is important to keep in mind that hired labor is included in the total expenses that make up the total expense ratio, but unpaid operator and family labor is not. The percent of farms with an adjusted total expense ratio and an economic total expense ratio less than one increases with farm size. Approximately 62 and 77 percent, respectively, of the farms with a value of farm production between \$500,000 and \$1,000,000 and greater than \$1,000,000 were covering all accrual expenses and opportunity costs.

The profit margin ratio for farms with a value of farm production above \$500,000 was above the average profit margin ratio. Similarly, the asset turnover ratio for farms with a value of farm production greater than \$500,000 was above the average for all farms. The negative profit margin for farms with a value of farm production below \$100,000 reflects the problem these farms have in covering unpaid operator and family labor. Only 4 percent of the small farms were in the top profit margin quartile (i.e., in the fourth category). In contrast, over 51 percent of the farms with a value of farm production greater than \$1,000,000 were in the top profit margin quartile.

Financial stress was below average for the farms with a value of farm production greater than \$500,000. These farms tend to be able to cover opportunity costs on operator and family labor, making these farms relatively less financially stressed.

This article presented information on financial performance by farm size category. More information on financial performance and the Kansas Farm Management Association can be found on the following web site: www.agmanager.info/kfma.

Table 1. Summary Statistics for 1,016 KFMA Farms with Continuous Data from 2006-2010.

Item	Average
Value of Farm Production (VFP)	\$430,427
Net Farm Income	\$108,994
Interest	\$20,908
Unpaid Family and Operator Labor	\$50,945
Total Assets	\$1,320,806
Total Debt	\$352,880
Total Expense Ratio (TER)	0.747
Adjusted Total Expense Ratio (ATER)	0.865
Economic Total Expense Ratio (ETER)	1.045
Operating Profit Margin Ratio	0.1834
Asset Turnover Ratio	0.3259
Debt to Asset Ratio	0.2672
Percent of Farms with Positive Net Cash Flow	94.59%
Percent of Farms Financially Stressed	4.43%
Percent of Farms with TER less than 1.000	92.13%
Percent of Farms with ATER less than 1.000	65.06%
Percent of Farms with ETER less than 1.000	32.78%
Percent of Farms with VFP less than \$100,000	10.33%
Percent of Farms with VFP between \$100,000 and \$250,000	27.76%
Percent of Farms with VFP between \$250,000 and \$500,000	33.76%
Percent of Farms with VFP between \$500,000 and \$1,000,000	20.18%
Percent of Farms with VFP greater than \$1,000,000	7.97%

Source: Kansas Farm Management Association 2010 Databank.

Table 2. Summary Statistics by Farm Size Category.^a

Item	Value of Farm Production (thousands of dollars)				
	< \$100	\$100 to \$250	\$250 to \$500	\$500 to \$1000	> \$1000
Number of Farms	105	282	343	205	81
Value of Farm Production (VFP)	\$63,324	\$176,631	\$357,289	\$678,570	\$1,482,013
Net Farm Income	\$5,662	\$37,067	\$88,805	\$187,798	\$379,399
Interest	\$5,283	\$10,633	\$18,523	\$28,533	\$67,731
Unpaid Family and Operator Labor	\$30,143	\$41,860	\$51,079	\$61,139	\$83,177
Total Assets	\$512,763	\$810,776	\$1,146,596	\$1,803,251	\$3,660,629
Total Debt	\$80,976	\$166,690	\$302,250	\$497,203	\$1,202,695
Total Expense Ratio (TER)	0.911	0.790	0.751	0.723	0.744
Adjusted Total Expense Ratio (ATER)	1.387	1.027	0.894	0.813	0.800
Economic Total Expense Ratio (ETER)	1.932	1.319	1.083	0.967	0.933
Operating Profit Margin Ratio	-0.3031	0.0331	0.1574	0.2287	0.2456
Asset Turnover Ratio	0.1235	0.2179	0.3116	0.3763	0.4049
Debt to Asset Ratio	0.1579	0.2056	0.2636	0.2757	0.3285
Percent of Farms with Positive Net Cash Flow	76.19%	93.26%	97.08%	99.51%	100.00%
Percent of Farms Financially Stressed	7.62%	7.09%	4.66%	0.49%	0.00%
Percent of Farms with TER less than 1.000	63.81%	89.36%	97.38%	99.51%	97.53%
Percent of Farms with ATER less than 1.000	9.52%	40.43%	77.26%	95.12%	95.06%
Percent of Farms with ETER less than 1.000	2.86%	10.28%	32.65%	61.95%	76.54%
Percent of Farms in First Profit Margin Quartile	84.76%	43.97%	10.50%	2.44%	0.00%
Percent of Farms in the Second Profit Margin Quartile	10.48%	29.79%	32.65%	15.61%	18.52%
Percent of Farms in the Third Profit Margin Quartile	0.95%	14.54%	33.24%	36.10%	29.63%
Percent of Farms in the Fourth Profit Margin Quartile	3.81%	11.70%	23.62%	45.85%	51.85%

^a Farms in the first profit margin quartile have the lowest operating profit margin ratio. Farms in the fourth profit margin quartile have the highest operating profit margin ratio.