

Financial Performance and Farm Type

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This article documents differences in financial performance among farms in the Kansas Farm Management Association (KFMA) based upon farm type. Labor standards and production units are used to designate farm types. Crop farms have at least 65 percent of their labor, paid and unpaid, devoted to crop production. Crop/beef cow and crop/backgrounding farms have at least 35 percent of their labor devoted to beef production. Similarly, crop/dairy farms have at least 35 percent of their labor devoted to dairy production.

To document differences in financial performance, the following measures are used: total expense ratio, adjusted total expense ratio, economic total expense ratio, operating profit margin, and asset turnover ratio. The total expense ratio is computed by dividing accrual expenses (cash costs, accrual cost adjustments, and depreciation) by value of farm production. A ratio below one indicates that value of farm production has covered all accrual expenses. The adjusted total expense ratio is 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 indicates that a farm, or group of farms, has covered accrual expenses, and unpaid operator and family labor. The economic total expense ratio is 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. The opportunity charge on net worth, in addition to accrual expenses and unpaid operator and family labor, are covered when this ratio is below one. The operating profit margin is computed by adding interest and subtracting unpaid operator and family labor from net farm income, and dividing the result by value of farm production. A negative operating profit margin ratio typically indicates that a farm, or group of farms, is not able to cover unpaid operator and family labor. The asset turnover ratio is computed by dividing value of farm production by total assets. In addition to these financial performance measures, this article also reports the incidence of financial stress; the percent of farms covering accrual expenses and opportunity costs; the percent of labor devoted to crop production; and information on crop and livestock accrual income.

Information for KFMA farms with continuous data from 2006 to 2010 is presented in this article. Table 1 reports the averages for these 1,016 farms. The average total expense ratio, adjusted total expense ratio, and economic total expense are 0.747, 0.865, and 1.045, respectively. Note that the average adjusted total expense ratio is below one. This indicates that, on average, value of farm production for this group of farms covered 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

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the farms covered opportunity costs on net worth, as well. The average operating profit margin is 0.1834 and the average asset turnover ratio is 0.3259. Also note that on average these farms devoted approximately 78 percent of their time to crop production.

It is important to compare a farm's financial performance measures with similar farms. With this in mind, Table 2 reports financial performance measures for non-irrigated crop farms, irrigated crop farms, crop/beef cow farms, crop/backgrounding farms, and crop/dairy farms. The average number of cows on the crop/beef cow and crop/dairy farms was 149 and 110, respectively. The total expense ratio was the highest for the crop/backgrounding farms and the lowest for the non-irrigated crop farms. The adjusted total expense ratio and economic total expense ratio for the crop/beef cow, crop/backgrounding, and crop/dairy farms were relatively higher than the corresponding ratios for the crop farms. Because these ratios 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 because unlike unpaid operator and family labor, hired labor is included in the expenses that make up the total expense ratio. The percent of farms covering accrual expenses and unpaid operator and family labor ranged from 29 percent for the crop/backgrounding farms to 89 percent for the irrigated crop farms. The range in the percent of farms covering all costs, or with an economic total expense ratio below one, is also quite wide. Only 8 percent of the crop/beef cow farms covered all costs while approximately 72 percent of the irrigated crop farms covered all costs.

The average operating profit margin ranged from 0.0368 (3.68 percent) for the crop/beef cow farms to 0.2313 (23.13 percent) for the irrigated crop farms. The average asset turnover ratio ranged from 0.1888 for crop/beef cow farms to 0.4468 for irrigated crop farms. Income by crop and livestock enterprise is also reported in Table 2. It is important to note that the beef and dairy incomes reported represent value added income measures. Also note that purchased feed is subtracted from value of farm production, but not from beef and dairy income.

Table 3 reports financial performance measures for non-irrigated crop farms by region of the state. The average expense ratios are relatively lower for farms in eastern and western Kansas. Also, the operating profit margin is relatively higher for farms in eastern and western Kansas. These results are at least partially due to differences in farm size among regions. The average non-irrigated crop farm in eastern and western Kansas that participates in the KFMA program is relatively larger, using value of farm production as a measure of farm size, than the average non-irrigated KFMA farm in central Kansas. Other reasons for regional differences include differences in weather, the mix of crops produced, and livestock production among regions.

It is common for farms to want to compare financial performance with farms in the top quartile or top one-third. There are enough non-irrigated crop farms and crop/beef cow farms to make these comparisons. Table 4 presents financial performance

measures for non-irrigated crop farms by profit margin quartiles. The difference in expense ratios, operating profit margin, and asset turnover ratio among groups is large. Farms in the top quartile (fourth quartile) have an economic total expense ratio that is 35 percent lower than that of farms in the bottom quartile (first quartile). Primarily due to their inability to cover unpaid operator and family labor, farms in the bottom quartile have a negative operating profit margin. In contrast, the average operating profit margin for farms in the top quartile is 0.3192.

Table 5 presents financial performance measures for crop/beef cow farms by profit margin thirds. As with the case with non-irrigated crop farms, differences in financial performance measures among groups are large. Farms in the top one-third (third category) have an economic total expense ratio that is 52 percent lower than the economic total expense ratio for farms in the bottom one-third. None of the farms in the bottom two-thirds in terms of the operating profit margin are able to cover opportunity costs. Approximately 83 percent of the farms in the top one-third are able to cover opportunity costs on unpaid operator and family labor. The average operating profit margin is negative for farms in the bottom profit margin categories (first and second categories). In contrast, the average operating profit margin is 0.1884 for farms in the top one-third profit margin category. The farms in the top one-third profit margin category also have a relatively higher asset turnover ratio.

In addition to benchmarking using the whole-farm information presented in this article, it is also important to examine the relative competitiveness of individual enterprises. Enterprise analysis enables a farm to determine whether a particular enterprise is contributing to a farm's relatively low or high whole-farm financial performance. Additional information on whole-farm and enterprise benchmarks can be found at 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%
Crop Labor Percentage	77.79%

Source: Kansas Farm Management Association 2010 Databank.

Table 2. Summary Statistics by Farm Type.

Item	Farm Type				
	Non-Irrigated	Irrigated	Crop Beef Cow	Crop Backgrounding	Crop Dairy
Number of Farms	620	18	74	17	29
Value of Farm Production (VFP)	\$437,175	\$974,978	\$186,660	\$341,502	\$415,390
Net Farm Income	\$118,652	\$234,146	\$37,403	\$35,711	\$91,521
Interest	\$18,947	\$37,064	\$12,176	\$39,180	\$18,603
Unpaid Family and Operator Labor	\$49,001	\$45,683	\$42,705	\$47,242	\$67,281
Total Assets	\$1,208,969	\$2,182,307	\$988,670	\$1,356,590	\$1,384,277
Total Debt	\$318,586	\$683,020	\$200,036	\$626,376	\$294,293
Total Expense Ratio (TER)	0.729	0.760	0.800	0.895	0.780
Adjusted Total Expense Ratio (ATER)	0.841	0.807	1.028	1.034	0.942
Economic Total Expense Ratio (ETER)	1.004	0.929	1.366	1.205	1.152
Operating Profit Margin Ratio	0.2027	0.2313	0.0368	0.0810	0.1031
Asset Turnover Ratio	0.3616	0.4468	0.1888	0.2517	0.3001
Debt to Asset Ratio	0.2635	0.3130	0.2023	0.4617	0.2126
Percent of Farms with Positive Net Cash Flow	95.48%	100.00%	83.78%	88.24%	93.10%
Percent of Farms Financially Stressed	4.52%	0.00%	2.70%	17.65%	0.00%
Percent of Farms with TER less than 1.000	94.84%	94.44%	72.97%	70.59%	89.66%
Percent of Farms with ATER less than 1.000	73.23%	88.89%	31.08%	29.41%	41.38%
Percent of Farms with ETER less than 1.000	40.16%	72.22%	8.11%	11.76%	10.34%
Crop Labor Percentage	91.40%	98.47%	44.20%	34.87%	24.24%
Wheat Income	\$81,418	\$116,663	\$27,367	\$10,880	\$15,192
Corn Income	\$104,857	\$550,135	\$13,692	\$11,155	\$29,991
Grain Sorghum Income	\$33,126	\$9,082	\$9,620	\$4,170	\$2,972
Soybean Income	\$109,930	\$71,775	\$21,037	\$19,703	\$55,101
Hay and Forage Income	\$11,838	\$34,049	\$5,886	\$26,013	\$4,712
Beef Income	\$32,260	\$9,285	\$112,810	\$313,566	\$4,289
Dairy Income	\$893	\$0	\$0	\$3,117	\$420,593

Table 3. Summary Statistics for Non-Irrigated Crop Farms by Region of the State.

Item	Region		
	East	Central	West
Number of Farms	303	252	65
Value of Farm Production (VFP)	\$445,962	\$404,723	\$522,025
Net Farm Income	\$129,131	\$100,083	\$141,791
Interest	\$19,654	\$16,573	\$24,856
Unpaid Family and Operator Labor	\$50,140	\$48,356	\$46,192
Total Assets	\$1,272,406	\$1,050,489	\$1,527,672
Total Debt	\$330,347	\$281,815	\$406,313
Total Expense Ratio (TER)	0.710	0.753	0.728
Adjusted Total Expense Ratio (ATER)	0.823	0.872	0.817
Economic Total Expense Ratio (ETER)	0.992	1.024	0.989
Operating Profit Margin Ratio	0.2212	0.1688	0.2307
Asset Turnover Ratio	0.3505	0.3853	0.3417
Debt to Asset Ratio	0.2596	0.2683	0.2660
Percent of Farms with Positive Net Cash Flow	96.37%	94.84%	93.85%
Percent of Farms Financially Stressed	4.62%	5.56%	0.00%
Percent of Farms with TER less than 1.000	94.72%	94.05%	98.46%
Percent of Farms with ATER less than 1.000	76.90%	67.86%	76.92%
Percent of Farms with ETER less than 1.000	41.25%	37.30%	46.15%
Crop Labor Percentage	90.21%	91.87%	95.16%
Wheat Income	\$30,454	\$119,768	\$170,306
Corn Income	\$144,194	\$48,855	\$138,602
Grain Sorghum Income	\$8,101	\$56,075	\$60,812
Soybean Income	\$166,034	\$68,961	\$7,233
Hay and Forage Income	\$8,939	\$16,796	\$6,131

Table 4. Summary Statistics for Operating Profit Margin Quartiles, Non-Irrigated Crop Farms.^a

Item	Profit Margin Quartile			
	First	Second	Third	Fourth
Number of Farms	155	155	155	155
Value of Farm Production (VFP)	\$178,984	\$410,982	\$513,456	\$645,279
Net Farm Income	\$16,340	\$82,617	\$137,115	\$238,536
Interest	\$11,133	\$20,068	\$24,349	\$20,238
Unpaid Family and Operator Labor	\$41,380	\$50,035	\$51,776	\$52,813
Total Assets	\$666,766	\$1,032,169	\$1,429,915	\$1,707,026
Total Debt	\$180,311	\$324,633	\$405,385	\$364,013
Total Expense Ratio (TER)	0.909	0.799	0.733	0.630
Adjusted Total Expense Ratio (ATER)	1.140	0.921	0.834	0.712
Economic Total Expense Ratio (ETER)	1.357	1.058	0.993	0.879
Operating Profit Margin Ratio	-0.0777	0.1281	0.2136	0.3192
Asset Turnover Ratio	0.2684	0.3982	0.3591	0.3780
Debt to Asset Ratio	0.2704	0.3145	0.2835	0.2132
Percent of Farms with Positive Net Cash Flow	82.58%	100.00%	100.00%	99.35%
Percent of Farms Financially Stressed	12.26%	5.81%	0.00%	0.00%
Percent of Farms with TER less than 1.000	79.35%	100.00%	100.00%	100.00%
Percent of Farms with ATER less than 1.000	7.10%	86.45%	100.00%	99.35%
Percent of Farms with ETER less than 1.000	0.00%	32.26%	52.90%	75.48%
Crop Labor Percentage	90.04%	89.44%	91.85%	94.27%
Wheat Income	\$45,157	\$88,555	\$89,322	\$102,638
Corn Income	\$21,680	\$79,934	\$122,247	\$195,566
Grain Sorghum Income	\$13,890	\$33,765	\$39,508	\$45,343
Soybean Income	\$35,924	\$90,092	\$139,435	\$174,271
Hay and Forage Income	\$10,808	\$15,468	\$12,532	\$8,544

^a The first quartile is represented by farms with the lowest operating profit margin ratio. The fourth quartile is represented by farms with the highest operating profit margin quartile.

Table 5. Summary Statistics for Operating Profit Margin Thirds, Crop/Beef Cow Farms.^a

Item	Profit Margin Thirds		
	First	Second	Third
Number of Farms	25	25	24
Value of Farm Production (VFP)	\$68,187	\$172,848	\$324,456
Net Farm Income	-\$7,433	\$28,481	\$93,402
Interest	\$7,823	\$11,722	\$17,182
Unpaid Family and Operator Labor	\$34,622	\$44,301	\$49,461
Total Assets	\$696,863	\$1,049,167	\$1,229,618
Total Debt	\$118,551	\$195,853	\$289,273
Total Expense Ratio (TER)	1.109	0.835	0.712
Adjusted Total Expense Ratio (ATER)	1.617	1.092	0.865
Economic Total Expense Ratio (ETER)	2.295	1.487	1.096
Operating Profit Margin Ratio	-0.5020	-0.0237	0.1884
Asset Turnover Ratio	0.0978	0.1647	0.2639
Debt to Asset Ratio	0.1701	0.1867	0.2353
Percent of Farms with Positive Net Cash Flow	64.00%	92.00%	95.83%
Percent of Farms Financially Stressed	0.00%	4.00%	4.17%
Percent of Farms with TER less than 1.000	32.00%	88.00%	100.00%
Percent of Farms with ATER less than 1.000	0.00%	12.00%	83.33%
Percent of Farms with ETER less than 1.000	0.00%	0.00%	25.00%
Crop Labor Percentage	39.58%	43.58%	49.67%
Beef Income	\$49,322	\$105,423	\$186,639
Number of Cows	98	159	193

^a The first profit margin one-third is represented by farms with the lowest operating profit margin ratio. The third profit margin one-third is represented by farms with the highest operating profit margin ratio.