

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 farms have at least 35% of their labor devoted to beef cow production. Similarly, crop/dairy farms have at least 35% 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 2004 to 2008 is presented in this article. Table 1 reports the averages for these 1,062 farms. The average total expense ratio, adjusted total expense ratio, and economic total expense are 0.760, 0.893, and 1.065, 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% of the farms were able to cover these expenses. In contrast, only 28% of the farms covered opportunity costs on net worth, as well. The average operating profit margin is

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0.1604 and the average asset turnover ratio is 0.3305. Also note that on average these farms devote approximately 78% 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 dryland crop farms, irrigated crop farms, crop/beef cow farms, and crop/dairy farms. The total expense ratio was the highest for the irrigated crop farms and the lowest for crop/dairy farms. In contrast, the irrigated crop farms had a relatively lower average adjusted total expense ratio and economic total expense ratio. 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 46% for the crop/beef cow farms to 78% 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. Approximately 4% of the crop/beef cow farms covered all costs while approximately 56% of the irrigated crop farms covered all costs.

The average operating profit margin ranged from 0.0644 (6.44%) for the crop/beef cow farms to 0.1704 (17.04%) for the dryland crop farms. The average asset turnover ratio ranged from 0.1959 for crop/beef cow farms to 0.4753 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 subtracting from value of farm production, but not from beef and dairy income.

Table 3 reports financial performance measures for dryland crop farms by region of the state. The average expense ratios are relatively lower for farms in eastern Kansas. Also, the operating profit margin is relatively higher for farms in eastern Kansas. These results are at least partially due to differences in farm size among regions. The average dryland crop farm in eastern Kansas is relatively larger using value of farm production as a measure of farm size. 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 dryland crop farms and crop/beef cow farms to make these comparisons. Table 4 presents financial performance measures for dryland 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 34% 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 0.2824.

Table 5 presents financial performance measures for crop/beef cow farms by profit margin thirds. As with the case with dryland 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 33% lower than the economic total expense ratio for farms in the bottom one-third. Moreover, none of the farms in the bottom one-third are able to cover opportunity costs. All of the farms in the top one-third are able to cover opportunity costs on unpaid operator and family labor. Approximately 11% of the farms in the top one-third are able to cover the opportunity charge on net worth. The average operating profit margin is negative for farms in the bottom profit margin category (first category). In contrast, the average operating profit margin is 0.1841 for farms in the top one-third profit margin category.

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 1,062 KFMA Farms with Continuous Data from 2004-2008.

| Item | Average |
|---|-------------|
| Value of Farm Production (VFP) | \$355,001 |
| Net Farm Income | \$85,239 |
| Interest | \$19,074 |
| Unpaid Family and Operator Labor | \$47,370 |
| Total Assets | \$1,074,187 |
| Total Debt | \$312,954 |
| Total Expense Ratio (TER) | 0.760 |
| Adjusted Total Expense Ratio (ATER) | 0.893 |
| Economic Total Expense Ratio (ETER) | 1.065 |
| Operating Profit Margin Ratio | 0.1604 |
| Asset Turnover Ratio | 0.3305 |
| Debt to Asset Ratio | 0.2913 |
| Percent of Farms with Positive Net Cash Flow | 93.79% |
| Percent of Farms Financially Stressed | 5.56% |
| Percent of Farms with TER less than 1.000 | 92.28% |
| Percent of Farms with ATER less than 1.000 | 65.07% |
| Percent of Farms with ETER less than 1.000 | 28.34% |
| Percent of Farms with VFP less than \$100,000 | 13.47% |
| Percent of Farms with VFP between \$100,000 and \$250,000 | 34.18% |
| Percent of Farms with VFP between \$250,000 and \$500,000 | 32.11% |
| Percent of Farms with VFP greater than \$500,000 | 20.24% |
| Crop Labor Percentage | 78.11% |

Source: Kansas Farm Management Association 2008 Databank.

Table 2. Summary Statistics by Farm Type.

| Item | Farm Type | | | |
|--|-----------|-------------|------------------|---------------|
| | Dryland | Irrigated | Crop Beef Cow | Crop Dairy |
| Number of Farms | 657 | 18 | 57 | 29 |
| Value of Farm Production (VFP) | \$353,596 | \$754,020 | \$176,119 | \$395,930 |
| Net Farm Income | \$88,927 | \$130,425 | \$39,235 | \$104,065 |
| Interest | \$16,975 | \$40,639 | \$9,816 | \$15,506 |
| Unpaid Family and Operator Labor | \$45,664 | \$43,974 | \$37,704 | \$67,643 |
| Total Assets | \$958,858 | \$1,586,562 | \$899,210 | \$1,230,267 |
| Total Debt | \$276,082 | \$692,617 | \$155,298 | \$249,212 |
| Total Expense Ratio (TER) | 0.749 | 0.827 | 0.777 | 0.737 |
| Adjusted Total Expense Ratio (ATER) | 0.878 | 0.885 | 0.991 | 0.908 |
| Economic Total Expense Ratio (ETER) | 1.032 | 0.980 | 1.329 | 1.106 |
| Operating Profit Margin Ratio | 0.1704 | 0.1685 | 0.0644 | 0.1312 |
| Asset Turnover Ratio | 0.3688 | 0.4753 | 0.1959 | 0.3218 |
| Debt to Asset Ratio | 0.2879 | 0.4366 | 0.1727 | 0.2026 |
| Percent of Farms with Positive Net Cash Flow | 95.59% | 88.89% | 84.21% | 93.10% |
| Percent of Farms Financially Stressed | 5.63% | 5.56% | 1.75% | 6.90% |
| Percent of Farms with TER less than 1.000 | 94.37% | 83.33% | 85.96% | 89.66% |
| Percent of Farms with ATER less than 1.000 | 69.71% | 77.78% | 45.61% | 62.07% |
| Percent of Farms with ETER less than 1.000 | 34.70% | 55.56% | 3.51% | 20.69% |
| Crop Labor Percentage | 91.99% | 97.83% | 54.09% | 22.41% |
| Wheat Income | \$69,491 | \$78,052 | \$25,948 | \$12,251 |
| Corn Income | \$74,210 | \$377,359 | \$9,836 | \$21,251 |
| Grain Sorghum Income | \$28,633 | \$9,871 | \$8,600 | \$2,206 |
| Soybean Income | \$74,417 | \$48,060 | \$17,657 | \$35,397 |
| Hay and Forage Income | \$10,865 | \$48,188 | \$16,589 | \$5,297 |
| Beef Income | \$30,263 | \$10,752 | \$79,934 | \$2,795 |
| Dairy Income | \$927 | \$258 | \$6,663 | \$430,340 |

Table 3. Summary Statistics for Dryland Crop Farms by Region of the State.

| Item | Region | | |
|--|-------------|-----------|-----------|
| | East | Central | West |
| Number of Farms | 300 | 286 | 71 |
| Value of Farm Production (VFP) | \$389,919 | \$326,697 | \$308,472 |
| Net Farm Income | \$106,421 | \$74,920 | \$71,434 |
| Interest | \$19,242 | \$15,200 | \$14,551 |
| Unpaid Family and Operator Labor | \$48,483 | \$44,442 | \$38,671 |
| Total Assets | \$1,077,837 | \$839,010 | \$938,894 |
| Total Debt | \$311,439 | \$252,719 | \$220,798 |
| Total Expense Ratio (TER) | 0.727 | 0.771 | 0.768 |
| Adjusted Total Expense Ratio (ATER) | 0.851 | 0.907 | 0.894 |
| Economic Total Expense Ratio (ETER) | 1.009 | 1.050 | 1.080 |
| Operating Profit Margin Ratio | 0.1979 | 0.1398 | 0.1534 |
| Asset Turnover Ratio | 0.3618 | 0.3894 | 0.3285 |
| Debt to Asset Ratio | 0.2889 | 0.3012 | 0.2352 |
| Percent of Farms with Positive Net Cash Flow | 96.33% | 95.45% | 92.96% |
| Percent of Farms Financially Stressed | 4.33% | 7.34% | 4.23% |
| Percent of Farms with TER less than 1.000 | 95.33% | 93.71% | 92.96% |
| Percent of Farms with ATER less than 1.000 | 77.33% | 63.64% | 61.97% |
| Percent of Farms with ETER less than 1.000 | 39.67% | 30.77% | 29.58% |
| Crop Labor Percentage | 90.99% | 92.06% | 95.90% |
| Wheat Income | \$36,007 | \$97,106 | \$99,732 |
| Corn Income | \$117,239 | \$36,353 | \$44,890 |
| Grain Sorghum Income | \$11,346 | \$43,018 | \$43,728 |
| Soybean Income | \$120,849 | \$43,322 | \$3,478 |
| Hay and Forage Income | \$7,702 | \$14,539 | \$9,434 |

Table 4. Summary Statistics for Operating Profit Margin Quartiles, Dryland Crop Farms.^a

| Item | Profit Margin Quartile | | | |
|--|------------------------|---------------------|-------------|-------------|
| | First | Second | Third | Fourth |
| Number of Farms | 164 | 165 | 164 | 164 |
| Value of Farm Production (VFP) | \$141,722 | \$325,735 | \$420,806 | \$526,393 |
| Net Farm Income | \$13,628 | \$57,773 | \$103,006 | \$181,493 |
| Interest | \$8,031 | \$18,679 | \$20,697 | \$20,485 |
| Unpaid Family and Operator Labor | \$35,729 | \$44,207 | \$49,397 | \$53,331 |
| Total Assets | \$527,470 | \$802,921 | \$1,120,825 | \$1,385,165 |
| Total Debt | \$128,413 | \$286,492 | \$337,376 | \$351,985 |
| Total Expense Ratio (TER) | 0.904 | 0.823 | 0.755 | 0.655 |
| Adjusted Total Expense Ratio (ATER) | 1.156 | 0.958 | 0.873 | 0.757 |
| Economic Total Expense Ratio (ETER) | 1.381 | 1.085 | 1.022 | 0.914 |
| Operating Profit Margin Ratio | -0.0993 | 0.0990 | 0.1766 | 0.2824 |
| Asset Turnover Ratio | 0.2687 | 0.4057 | 0.3754 | 0.3800 |
| Debt to Asset Ratio | 0.2435 | 0.3568 | 0.3010 | 0.2541 |
| Percent of Farms with Positive Net Cash Flow | 84.76% | 99.39% [█] | 98.78% | 99.39% |
| Percent of Farms Financially Stressed | 14.02% | 7.88% | 0.61% | 0.00% |
| Percent of Farms with TER less than 1.000 | 77.44% | 100.00% | 100.00% | 100.00% |
| Percent of Farms with ATER less than 1.000 | 4.88% | 74.55% | 99.39% | 100.00% |
| Percent of Farms with ETER less than 1.000 | 0.00% | 15.15% | 48.78% | 75.00% |
| Crop Labor Percentage | 91.60% | 91.75% | 91.28% | 93.32% |
| Wheat Income | \$41,048 | \$69,474 | \$87,573 | \$79,868 |
| Corn Income | \$15,523 | \$49,535 | \$85,548 | \$146,384 |
| Grain Sorghum Income | \$13,018 | \$28,439 | \$36,855 | \$36,219 |
| Soybean Income | \$19,775 | \$60,224 | \$80,110 | \$137,645 |
| Hay and Forage Income | \$8,007 | \$14,612 | \$12,479 | \$8,341 |

^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 and Beef Cow Farms.^a

| Item | Profit Margin Thirds | | |
|--|----------------------|-----------|-------------|
| | First | Second | Third |
| Number of Farms | 19 | 19 | 19 |
| Value of Farm Production (VFP) | \$104,177 | \$125,989 | \$298,190 |
| Net Farm Income | \$1,525 | \$21,873 | \$94,306 |
| Interest | \$6,879 | \$10,562 | \$12,006 |
| Unpaid Family and Operator Labor | \$32,022 | \$29,675 | \$51,414 |
| Total Assets | \$667,897 | \$713,078 | \$1,316,656 |
| Total Debt | \$98,883 | \$162,476 | \$204,535 |
| Total Expense Ratio (TER) | 0.985 | 0.826 | 0.684 |
| Adjusted Total Expense Ratio (ATER) | 1.293 | 1.062 | 0.856 |
| Economic Total Expense Ratio (ETER) | 1.730 | 1.410 | 1.154 |
| Operating Profit Margin Ratio | -0.2267 | 0.0219 | 0.1841 |
| Asset Turnover Ratio | 0.1560 | 0.1767 | 0.2265 |
| Debt to Asset Ratio | 0.1481 | 0.2279 | 0.1553 |
| Percent of Farms with Positive Net Cash Flow | 63.16% | 89.47% | 100.00% |
| Percent of Farms Financially Stressed | 0.00% | 5.26% | 0.00% |
| Percent of Farms with TER less than 1.000 | 57.89% | 100.00% | 100.00% |
| Percent of Farms with ATER less than 1.000 | 0.00% | 36.84% | 100.00% |
| Percent of Farms with ETER less than 1.000 | 0.00% | 0.00% | 10.53% |
| Crop Labor Percentage | 54.38% | 49.69% | 58.21% |
| Beef Income | \$55,288 | \$73,583 | \$110,933 |
| Number of Cows | 105 | 116 | 156 |

^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.