



LONG-TERM TRENDS IN FARM INCOME

This article documents the long-term trends in value of farm production, net farm income, and the net farm income ratio using Kansas Farm Management Association (KFMA) summary data from 1973 to 2010. Trends in farm income are also compared to inflation over the same time period. Given the relatively high net farm income in 2007, 2008, 2009, and 2010; it is important to relate these years to previous years and determine whether these years were atypical.

Average net farm income for KFMA farms from 1973 to 2010 is illustrated in Figure 1. Average net farm income was above \$100,000 for 2007, 2008, 2009, and 2010. Does this mean that these years were atypical from a profit standpoint? The answer is, not necessarily. To compare profitability over time, it is useful to express net farm income as a percentage of value of farm production. This ratio is called the net farm income ratio and is illustrated in Figure 2. The net farm income ratio averaged 28.09 percent in 2007, 26.09 percent in 2008, 22.80 percent in 2009, and 29.09 percent in 2010. These values were considerably above the long-run average net farm income ratio of

17.92 percent. Moreover, the net farm income ratios in 2007, 2008, and 2010 were three of seven years in which the net farm income ratio was above 25 percent. The only year with higher net farm income ratio than 2010 was 1973 (46.41 percent). Though relatively high in 2007, 2008, 2009, and 2010; the net farm income ratios in these years were not that unusual compared to historical ratio values. What is unusual is to have four years in a row in which the net farm income ratio is above average. The 2007 to 2010 period is the only period since 1973 in which the net farm income ratio has been above average for four consecutive years.

One of the reasons why the incomes from 2007 to 2010 seem so unusual to some individuals is due to their failure to take account of inflation when examining trends in income. The growth rates in value of farm production and net farm income over the 1973 to 2010 periods were 3.51 percent and 4.57 percent, respectively. These growth rates are comparable to the growth rate in the implicit price deflator for personal consumption expenditures of 3.47 percent over the same period. Interestingly, there was not a significant trend in the net farm income ratio over the 1973 to 2010 period.

As I have indicated in previous newsletter articles, profitability (measured using the net farm income ratio, operating profit margin ratio, or a similar measure) can vary significantly among farms. Individual farms are encouraged

Also in this newsletter:

- Financial Performance and Farm Size Pg 3
- Recommendations for Further Reading Pg 6

to compare their five-year average net farm income and operating profit margin ratios to producers in their association, and with producers of similar size and farm type.

*Michael Langemeier, Professor
Department of Agricultural Economics
Kansas State University*

Figure 1. Accrual Net Farm Income, KFMA Farms

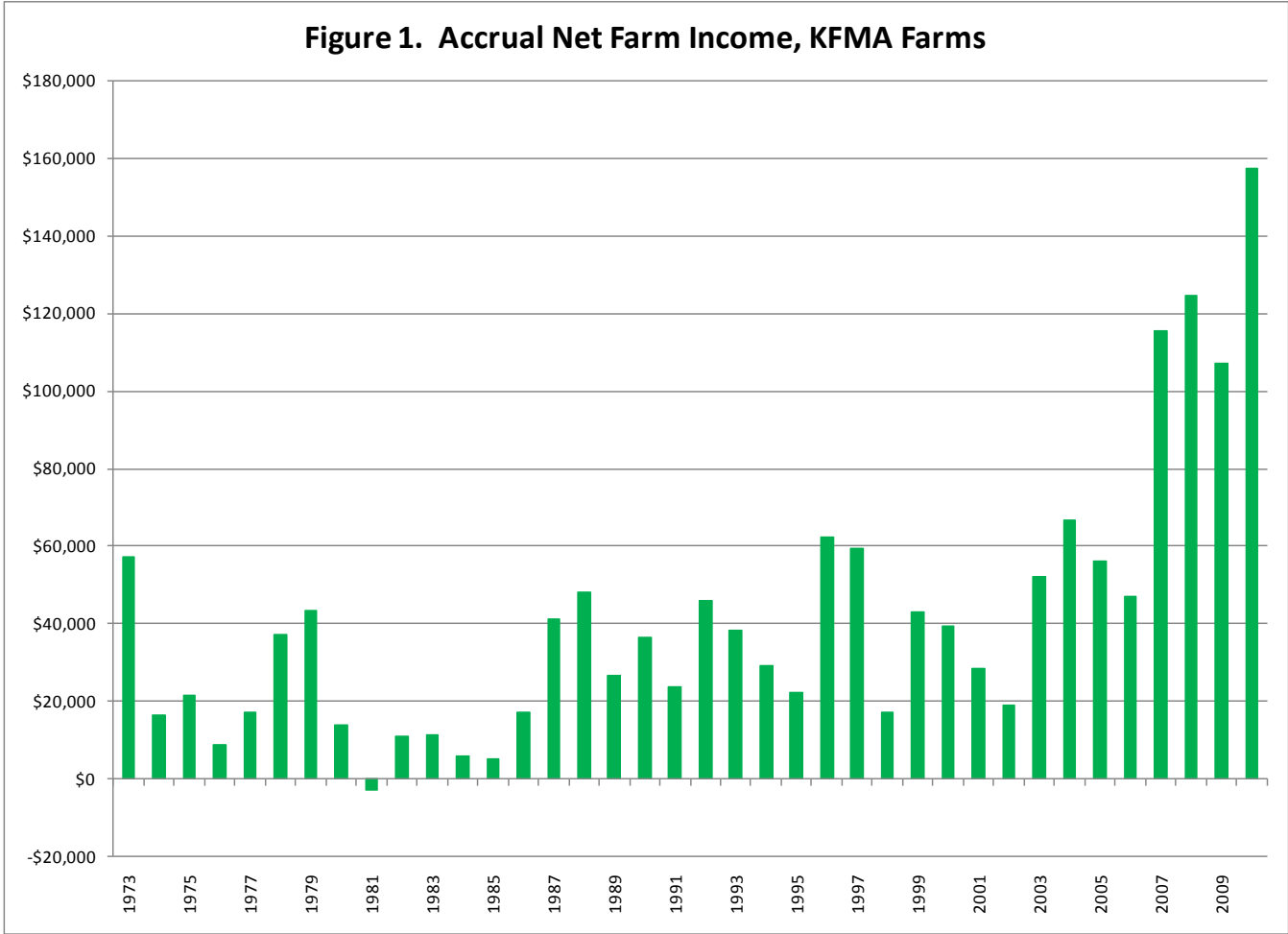
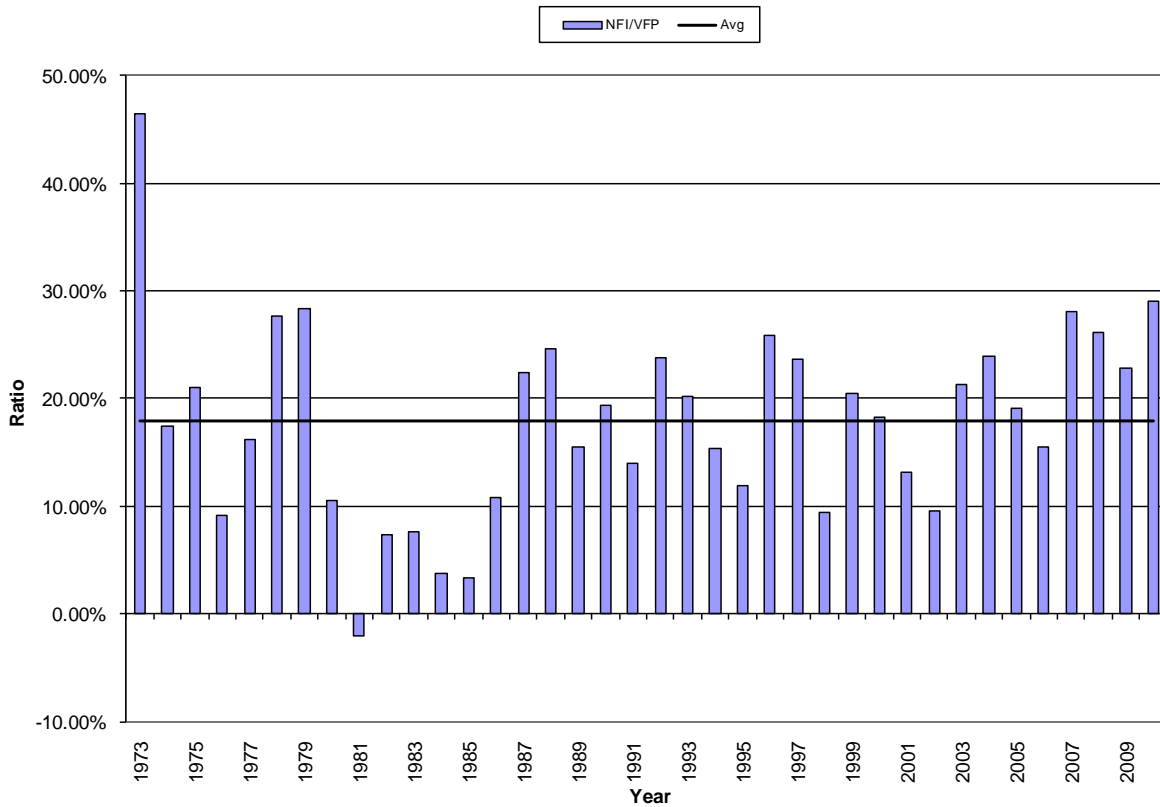


Figure 2. Trend in Net Farm Income Ratio, KFMA Farms



FINANCIAL PERFORMANCE AND FARM SIZE

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 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.

*Michael Langemeier, Professor
Department of Agricultural Economics
Kansas State University*

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.

RECOMMENDATIONS FOR FURTHER READING

The purpose of this section of the newsletter is to briefly discuss articles and web sites that may be of interest to readers. In general, the articles

discussed will not report on original research. Rather, the articles will contain citations to web sites and articles that discuss topics of general

interest.

In an article entitled “Impact of Direct Payments in Kansas” which is posted on the Ag Manager web site (www.agmanager.info), Troy Dumler discusses the magnitude of direct payments per county and computes direct payments as a percentage of crop market value for program crops in Kansas. Due to differences in crops produced and the relative importance of irrigation, average direct payments per county vary from under \$12 per acre to over \$20 per acre. The average direct payment per acre for Kansas is \$15.52. Since 2001, direct payments as a percentage of crop market value have ranged from 4.0 percent in 2010 to 13.3 percent in 2002. The last four years have been excellent crop income years. During these years, direct payments as a percent of crop market value has ranged from 4.0 to 5.4 percent.

Brian Briggeman and Maria Akers have updated agricultural credit conditions for the Kansas City Federal Reserve Bank region (Kansas, Missouri, Nebraska, Oklahoma, and Mountain states) in the first quarter edition of *Survey of Tenth District Agricultural Credit Conditions*. Across the district states, cropland values and cash rents have increased 20 and 17 percent, respectively, during the last year. In general, nonirrigated and irrigated land values increased more than ranchland values. In Kansas, nonirrigated, irrigated, and ranchland values increased 23.8, 18.3, and 11.2 percent, respectively. For new farmland purchases, district bankers indicated that 20 percent of financing came from a cash down payment, 30 percent with a pledge of existing equity, and 50

percent with new debt. More information can be found in the article which is posted to my contributor site on Ag Manager under “Recommendations for Further Reading”.

Antonella Tutino at the Federal Reserve Bank of Dallas has recently written an interesting article entitled “Rational Inattention Guides Overload Brains, Helps Economists Understand Market Behavior”. As the author notes, rational inattention is based on a simple observation: attention is a scarce resource and thus must be budgeted wisely. Researchers have found that people choose how much attention to devote to different subjects so that they can maximize their productivity. Rational inattention models can help explain phenomena related to economic growth, consumption, labor choices, the visibility of sale items, and policy choices. For example, rational inattention can help explain why in aggregate, output contractions are faster than output growth during a typical business cycle. More information on this topic can be found in the article which is posted on my contributor site under “Recommendations for Further Reading”.

The Agricultural Credit Survey information, noted above, can be found on the web site of the Federal Reserve Bank of Kansas City. Specifically, the following link can be used to examine current and past survey results: www.kansascityfed.org/research/indicatorsdata/agcredit.

*Michael Langemeier, Professor
Department of Agricultural Economics
Kansas State University*

The Kansas Farm Management Association (KFMA) Newsletter is distributed monthly to provide farm management information to farm decision makers. Further farm management information can be found on the KFMA program website: www.agmanager.info/kfma; and, on the Extension Agricultural Economics website: www.agmanager.info. The Newsletter is edited by Michael Langemeier, Professor, Department of Agricultural Economics, Kansas State University.



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