



BENCHMARKING AND TREND ANALYSIS

Benchmarking is a process that can be used to identify and implement internal and external best management practices. Moreover, benchmarking can be used as an early warning signal of organizational problems and is an important component to a continuous improvement program. Both internal and external benchmarking is important to farms and ranches. Internal benchmarking involves an examination of the trend in an individual farm's performance. The benefits of internal benchmarking include the establishment of a baseline of acceptable performance, the identification of gaps in existing performance, and the establishment of standards involving common practices and procedures. External benchmarking involves comparing an individual farm's performance to that of similar farms. External benchmarking is a key ingredient in the determination of whether an individual farm has a competitive advantage.

Financial ratios are commonly used to benchmark farms and ranches. Table 1 illustrates financial ratios for a case farm for the 2004-2009 period. The layout in Table 1 is similar to the layout found on the last page of a KFMA member's whole-farm analysis report. Definitions of the financial ratios can also be found on the last page of this report. This case farm would be typed as a crop/cowherd farm.

The farm has a cowherd and produces grain sorghum, wheat, alfalfa, and soybeans. To ensure brevity, this newsletter article will focus on the operating profit margin, the asset turnover ratio, the debt to asset ratio, and the current ratio.

The operating profit margin is computed by adding cash interest paid and subtracting unpaid labor from net accrual farm income, and then dividing the result by value of farm production. The operating profit margin for the case farm ranged from 0.139 (13.9 percent) in 2009 to 0.284 (28.4 percent) in 2008. The last two columns in Table 1 can be used to benchmark the case farm externally or with other farms. Because the example illustrated is a case farm, state averages are used in the last column. The whole-farm analysis report for KFMA members contains benchmark information for their association. The operating profit margin for the case farm for the 2004-2008 period, 0.222 or 22.2 percent, was higher than the state average, 0.159 or 15.9 percent. It is often helpful to benchmark by farm type. The average operating profit margin for the crop/cowherd farm type was only 6.4 percent over the 2004-2008 period. Thus, the operating profit margin for the case farm is considerably higher than that for the average crop/cowherd farm. For more information on benchmarks by farm type, see the paper article entitled "Financial Performance and Farm Type" on my contributor site on AgManager. This case farm would be in the top quartile in terms of the operating profit margin for all KFMA farms, but its operating profit margin ratio would be below the average for this group. The top quartile of KFMA farms with

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continuous data from 2004 to 2008 had an operating profit margin of 28.0 percent.

The asset turnover ratio is computed by dividing value of farm production by average total assets. The asset turnover ratio for the case farm decreased in 2009, primarily due to the decline in value of farm production. Using the information in the last two columns, the average asset turnover ratio for the case farm, 0.245, was below the state average, 0.331. It is important to note that this farm type tends to have relatively lower asset turnover ratios. In fact, the average asset turnover ratio for this farm type over the 2004-2008 period was 0.196.

Due to differences in risk preferences between farmers and ranchers, it does not make a lot of sense to benchmark the debt to asset ratio or the current ratio with other farms and ranches. However, it is still important in most cases to examine trends for a particular farm. The debt to asset ratio has been trending downward and the current ratio has been trending upward for the case farm. A current ratio above 2 is usually used as a standard. The case farm had a current ratio below 2 in 2004 and 2005, and above 2 thereafter. Increased profits likely contributed to the trends in these ratios. The trends in the debt to asset and current ratios would have been different if the case farm had made a major asset purchase, such as land, during the 2004-2009 period. Major asset purchases often require the sale of current assets to help make the down payment and an increase in long-term debt. The sale of current assets would impact the current ratio while the increase in long-term debt would impact the debt to asset ratio.

As a final note on the information in Table 1, it is important to keep in mind when examining the profitlink business trend analysis on the last page of the whole-farm analysis report for an individual KFMA farm that capital gains or losses on land are not included in the return on assets or the return on equity figures presented. Including capital gains or losses, particularly in recent years, would typically increase these

ratios. A producer wanting to compare these ratios to the returns from off-farm investments would need to include capital gains or losses on land in their computation of these ratios.

Table 2, using information from the case farm, illustrates benchmarks of whole-farm information. The layout in this table is similar to the layout found on the last page of a KFMA member's whole-farm analysis report. The first seven items represent internal benchmarks. Trends in these measures for individual farms are important to examine and relate to trends in financial ratios. For instance, if a farm is growing, this growth will likely impact profitability measures such as the operating profit margin as well as the current asset ratio and debt to asset ratio. It is particularly important to examine trends in the change in net worth measure. One of the goals of most businesses is to improve net worth over time so it is important to check whether the five-year average (2004-2008 in this case) is positive. Also, if there is a large difference between net farm income and the change in net worth, the farm may be using a large proportion of net farm income or earnings for non-farm uses. Depending on the goals of the farm and the farm's business structure, this may or may not be problematic. However, for a farm to grow over time, a portion of net farm income needs to be retained and used for asset acquisitions.

The last six items in Table 2 are typically benchmarked using data from other farms. Individual KFMA farms can benchmark these measures with farms in their association. Gross crop value per acre is relatively lower, and machinery investment per acre and crop machinery cost per acre are relatively higher for the case farm. For the case farm, gross crop value, machinery investment, and crop machinery cost per crop acre and harvested acre are the same. This would not be the case for farms that have fallow or double crop acres.

Next month's newsletter will continue the discussion of benchmarks through the use of a

table that compares the case farm information to farms in north central Kansas and a stoplight chart. Updated benchmark information by farm size and farm type will also be presented in future newsletters.

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

Table 1. Profitlink Business Trend Analysis for Case Farm, Financial Ratios.

Financial Ratios	2004 Your Farm	2005 Your Farm	2006 Your Farm	2007 Your Farm	2008 Your Farm	2009 Your Farm	2004-2008 Average	2004-2008 State Avg
Operating Expense Ratio	0.511	0.534	0.503	0.494	0.492	0.557	0.507	0.633
Interest Expense Ratio	0.059	0.066	0.071	0.071	0.051	0.060	0.064	0.056
Depreciation Expense Ratio	0.081	0.077	0.069	0.069	0.059	0.085	0.071	0.078
Net Farm Income Ratio	0.349	0.323	0.357	0.366	0.399	0.298	0.359	0.233
Operating Profit Margin Ratio	0.184	0.174	0.226	0.244	0.284	0.139	0.222	0.159
Asset Turnover Ratio	0.249	0.212	0.235	0.246	0.285	0.218	0.245	0.331
% Return on Assets	0.046	0.037	0.053	0.060	0.081	0.030	0.055	0.053
% Return on Equity	0.047	0.031	0.049	0.055	0.084	0.021	0.053	0.049
Current Ratio	1.690	1.768	2.250	2.844	4.167	5.002	2.544	2.580
Debt to Asset Ratio	0.331	0.264	0.241	0.220	0.191	0.176	0.249	0.300

Table 2. Profitlink Business Trend Analysis for Case Farm, Whole Farm Information.

Whole-Farm Information	2004 Your Farm	2005 Your Farm	2006 Your Farm	2007 Your Farm	2008 Your Farm	2009 Your Farm	2004-2008 Average	2004-2008 State Avg
Value of Farm Production	183,292	191,634	216,182	236,671	287,620	227,831	223,080	350,916
Net Farm Income	63,928	61,917	77,162	86,539	114,635	67,849	80,836	81,686
Change in Net Worth	29,961	21,961	41,218	49,420	75,835	28,324	43,679	55,810
Working Capital	-38,127	-31,480	-3,912	31,573	84,629	102,598	8,537	204,763
Total Acres Operated	2,080	2,080	2,080	2,080	2,080	2,080	2,080	1,940
Total Crop Acres	800	800	800	800	800	800	800	1,280
Harvested Acres	800	800	800	800	800	800	800	1,222
Gross Crop Value per Crop Acre	204	191	227	258	376	312	251	252
Machinery Investment per Crop Acre	160	160	160	172	188	202	168	137
Crop Machinery Cost per Crop Acre	61	65	67	72	81	76	69	60
Gross Crop Value per Harv Acre	204	191	227	258	376	312	251	264
Machinery Investment per Harv Acre	160	160	160	172	188	202	168	144
Crop Machinery Cost per Harv Acre	61	65	67	72	81	76	69	63

CROP, LIVESTOCK, AND INPUT PRICE FORECASTS FROM FAPRI

Long-term price forecasts are often useful for planning purposes. With this in mind, this article briefly summarizes some of price forecasts put together by FAPRI (Food and Agriculture Policy Research Institute) in their latest U.S. Baseline Briefing Book (March 2010).

Table 1 presents prices for the current or most

recent year, and five-year average forecasted prices. The FAPRI baseline presents forecasted prices for 10 years. The five-year averages in table 1 are computed using the first five forecast years in the baseline. Note that crop prices, with the exception of alfalfa, are forecasted using crop years rather than calendar years. Alfalfa, livestock, and input price forecasts use calendar years. It is important to also note that

the crop year prices for the current year for all crops except alfalfa contain a mixture of actual and forecasted prices.

Alfalfa and wheat prices are projected to be lower from 2010 to 2014 than the current year prices while soybean prices are expected to be similar. Conversely, corn, grain sorghum, and sunflower prices are expected to be from 5.5 to 8.0 percent higher. As noted in the baseline, feed grain prices are particularly sensitive to major changes in ethanol policies.

After seeing extended periods where prices were below breakeven, the higher forecasted prices for hogs, beef, and milk presented in table 1 are definitely welcome news. Hog prices in 2010 to 2014 are expected to be 27.4 percent higher than 2009 prices. Feeder prices (Oklahoma City prices for 600 to 650 pound steers) and fed cattle prices (Nebraska direct steer prices) are expected to be 22.3 and 18.4 percent higher, respectively. As can be seen from table 1, milk prices are expected to rebound substantially from the low prices experienced in 2009.

Input prices for production items (which include purchased inputs such as seed, fertilizer, herbicide, fuel, etc.) are expected to increase by 6.7 percent while wages are expected to increase

5.9 percent. Interest rates, which are currently very difficult to predict, are expected to increase by approximately 20 percent.

A broad examination of the relationship between input and output price forecasts, suggests that output price increases are expected to be lower than or similar to the increase in input prices for crops. In contrast, output prices for livestock enterprises are expected to be higher than the input price increases.

Of course, it is important to note that there are a plethora of factors that would change the long-term forecasts discussed above. Some of the biggest factors include biofuel policies, GDP growth, and interest rates. Biofuel policies are assumed to be extended throughout the baseline. Interest rates are expected to increase rather sharply, but remain below the high interest rates of the late 1970s and early 1980s. Finally, real GDP, after declining 2.5 percent in 2009 is expected to increase to 2.6 percent in 2010 and remain at or above this level throughout the forecast period.

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

Table 1. Forecasted Crop, Livestock, and Input Prices.

Item	Current	Forecast	Change
<u>Crop</u>	<u>09/10</u>	<u>10/11-14/15</u>	<u>%</u>
Alfalfa (\$/ton)	124.41	116.26	-6.6%
Corn (\$/bu)	3.60	3.83	6.4%
Grain Sorghum (\$/bu)	3.26	3.44	5.5%
Soybeans (\$/bu)	9.43	9.43	0.0%
Sunflowers (\$/cwt)	15.50	16.74	8.0%
Wheat (\$/bu)	4.92	4.84	-1.6%
<u>Livestock</u>	<u>09</u>	<u>10-14</u>	<u>%</u>
Barrows and Gilts (\$/cwt)	41.24	52.56	27.4%
Feeder Steers (\$/cwt)	101.85	124.54	22.3%
Fed Cattle (\$/cwt)	82.68	97.88	18.4%
Milk (\$/cwt)	12.79	17.57	37.4%
<u>Inputs</u>	<u>09</u>	<u>10-14</u>	<u>%</u>
Production Items (Index; 90-92=100)	179	191	6.7%
Interest (Index; 90-92=100)	154	185	20.1%
Wages (Index; 90-92=100)	187	198	5.9%

Source: FAPRI, University of Missouri, U.S. Baseline Briefing Book, March 2010.

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.

Michael Boehlje has recently written two extension papers pertaining to farm loan renewal. He first stresses the importance of being able to measure profitability. A Schedule

F is a notoriously inaccurate measure of farm profitability. In good years, farmers tend to delay sales and prepay expenses while the process is often reversed in years that are not so good. Profitability needs to be measured using an accrual income statement. It is also useful to project income for the current year using budgets and pro forma financial statements. Second, Boehlje indicates that managing risk through crop insurance and other risk management strategies will become increasingly important. Third, it is important to recognize

that working capital (current assets minus current liabilities) is an important defense against financial stress. Working capital management can be measured using the current ratio (current assets divided by current liabilities) and as a percentage of gross revenue (value of farm production plus livestock purchases plus accrual feed expense). A current ratio above 2 and working capital as a percentage of gross revenue above 25 percent are generally considered adequate. Fourth, Boehlje briefly discusses loan covenants which specify a set of conditions with which the borrower must comply along with the consequences of violating these conditions. Covenants may be related to capital asset purchases or minimum levels of working capital. Violating covenants often results in higher interest rates. The two articles by Boehlje can be found on my contributor site under “Recommendations for Further Reading”.

Ben Bernanke, the Chairman of the Board of Governors of the Federal Reserve System testified in front of the U.S. House of Representatives on February 24 and March 25. In this testimony, Bernanke discusses economic outlook, monetary policy, transparency,

regulatory reform, and possible exit strategies for actions taken by the Federal Reserve since 2008. As he indicates the job market remains relatively weak. He notes that during the last two and one-half years the Federal Reserve has developed programs that have improved liquidity, reduced interest rates, and purchased Treasury securities, mortgage-backed securities, and agency debt. The policies related to reduced interest rates and security purchases have yet to be unwound. These testimonies can be found on my contributor site under “Recommendations for Further Reading”.

The About.com web site for management (www.management.about.com) contains a wealth of information pertaining to management topics including a section on benchmarking. The benchmarking section defines the concept and briefly discusses why a firm would want to benchmark as well as what can be benchmarked.

*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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