THE BENEFITS OF FINANCIAL BENCHMARKING TO FARMERS IN THE UNITED STATES

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Abstract

Benchmarking is a powerful management tool that agricultural producers can use to manage risk and improve profitability. Benchmarking allows producers to evaluate how they are doing compared to other producers, helps them identify where their business can be improved, and helps them provide high quality documentation to their lenders. The key to benchmarking is the databases of actual farm data that provide the benchmarking information. Where does the data come from and how do producers get access to the data? In the United States, publicly available databases have almost exclusively been developed from farms and ranches that participate in farm management associations and farm business management education programs. The Center for Farm Financial Management works in partnership with the farm business management education groups in Minnesota and several other states to make meaningful financial benchmarks available on the FINBIN website. The 2,401 Minnesota farms included in the FINBIN database represent a broad cross-section of Minnesota production agriculture. This paper summarizes some of the benchmarks available to producers through the FINBIN database based on 2009 financial results.

Keywords: benchmarking, financial performance, profitability

Subtheme: Business & finance

Benchmarking is a powerful management tool that agricultural producers can use to manage risk and improve profitability. The August 2010 issue of the Prairie Farmer[26] asks, "Just how healthy is your farm? It's a question more farm businesses are asking as they analyze financial statements and work with lenders to fine-tune their operations. And yet how can you answer that question? For most businesses, the answer is to benchmark the operation. To benchmark means to compare your numbers to those of another, similar business and in agriculture the idea is gaining momentum."

As an example of how important benchmarking is becoming to producers, Doane's Strategic Planning Quarterly Summer 2010[27] issue states, "We did a poll last year of possible subjects for in-depth coverage at our www.doane.com website. This topic (benchmarking) came in third, outvoted by only two other subjects; both having to do with improved marketing skills."

Why is the demand for benchmarking growing so much in agriculture? Benchmarking allows producers to evaluate how they are doing compared to other producers, helps them identify where their business can be improved, and helps them provide high quality documentation to their lenders.

[26] Vogt, W., *Benchmark Your Farm, Enhance Its Financial Health.* Prairie Farmer, August 2010
[27] *The Critical Role of "Benchmarking" Your Farm's Financial Performance*, Doane's Strategic Planning Quarterly, Summer 2010

March 2011 - ISBN 978-92-990056-7-5 - www.ifmaonline.org - Congress Proceedings

For example, producers can use benchmarking to evaluate their feed cost per hundred-weight of milk produced compared to farms of similar size, or to compare their cost of production for corn to the costs incurred by the 20 percent most profitable corn producers. Benchmarking lets producers investigate machinery costs of similar sized farms or explore what contributed to differences in their cost per bushel versus producers in their specific geographic area. Producers considering organic production can look at the actual costs and returns of existing organic producers.

Benchmarking is also a valuable tool for lenders, researchers, and policy makers. Lenders want to know how a customer's costs compare to other producers of the same crops or livestock. Benchmarking helps identify credit risks. Benchmarking databases provide invaluable research opportunities, the ability to identify best management practices, and provide a powerful resource to evaluate public policy proposals.

The key to benchmarking is the databases of actual farm data that provide the benchmarking information. Where does the data come from and how do producers get access to the data? In the United States, publicly available databases have almost exclusively been developed from farms and ranches that participate in farm management associations and farm business management education programs. These programs historically have been associated with either a land grant university or a community/technical college system.

The Center for Farm Financial Management works in partnership with the Minnesota State Colleges and Universities Farm Business Management Education program and the Southwest Minnesota Farm Business Management Association to make financial benchmarks available on the FINBIN website (www.finbin.umn.edu). The 2,401 Minnesota farms included in the FINBIN database represent a broad cross-section of Minnesota production agriculture. These farm represent about 3 percent of the farms in the state and 10% of commercial farms with total sales of over $100,000[28]. This paper summarizes some of the benchmarks available to producers through the FINBIN database based on 2009 financial results.

Profitability

Median net farm income was $33,417 for the 2,401 Minnesota farms that participated in Minnesota Farm Business Management programs in 2009, a major decrease from 2008 levels. Incomes were down for the second consecutive year following six years of continuous increases. In inflation adjusted dollars, these farms had he third lowest earnings in the fourteen years included in FINBIN. Net farm income is the farm's contribution to covering family living expenditures, income taxes, retirement savings, and reinvestment in the business.

The average net farm income was $53,780, significantly higher than the median (middle) farm. This indicates that the most profitable farms were profitable enough to increase the average for all farms.

[28] *Farm Business and Household Survey Data: Customized Data Summaries from ARMS*, Economic Research Service, United States Department of Agriculture, 2008

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Looking only at averages disguises the wide variation in profitability across farms. The median farm income for the most profitable 20% of these farms was $192,261; the median income for the least profitable 20% was a loss of $54,266.

Government payments were up slightly from 2008, apparently due to MILC payments to dairy producers. The average farm received $21,210 in total government payments in 2009 compared to $19,227 in 2008. Government payments represented 3.4 % of gross farm revenue and 39.4% of net farm income. Crop related government payments in 2009 were almost exclusively direct payments, with virtually no LDP or counter-cyclical (CCP) income.

The average farm earned a 3.1% rate of return on assets (assets valued at adjusted cost basis), much lower than the 10.5% average for 2008 and the lowest of the fourteen years included in FINBIN. The average return on equity was 1.3%. The goal for any farm or for the industry as a whole is for ROE to be higher than ROA. When this is the case, borrowed capital earned more than its cost (ROA was higher than the average interest rate paid on borrowed capital). This past year was the first year since 2001 that borrowed capital has not covered its cost for these farms.

Asset valuation is a major factor in measuring rates of return. When assets are valued at estimated market value, ROA and ROE were somewhat higher, at 4.4 % and 4.7%, respectively. This includes capitalized returns from estimated asset value changes during the year. This might be a better measure to evaluate potential future movement of investment into and out of these farms.

Liquidity

With profits down, these farms lost some, but not all, of the liquidity gains that they made in 2007 and 2008. The average farm in the FINBIN database had a current ratio of 1.72:1 at the end of 2009. While a current ratio of 2:1 is a general goal for many businesses, 1.7:1 is historically a strong position for these farms.

Current ratios were reduced in 2001 by low crop yields and prices. Since then, the current ratio of these farms improved steadily until 2009. Current ratios tightened in 2009 as both the value of current assets decreased as total current liabilities increased. Current assets decreased by $22,000 while current liabilities increased by $16,000 for the average farm.

Working capital to gross revenue is perhaps a better measure of liquidity in that it relates the level of liquidity to business size. For this group of farms, working capital was 29.1% of gross revenue at the end of 2009. In general, 25% is a goal figure for this measure so these farms, as a group, were in a strong liquidity position at the end of 2009. It is somewhat surprising that these farms were able to maintain their liquidity position in a year of dramatically reduced profits.

While the average farm in the entire group was in a strong liquidity position at the end of 2009, there was a great deal of difference within the group.

- Dairy farms, on average, had only 14% of a year's gross income in working capital.
- Specialized hog farms, those without significant crop sales, averaged 3% working capital to gross.

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- Highly leveraged farms, those with debt to asset ratios over 60%, had only 3% working capital to revenue while those with less debt (debts to assets under 40%) had over 53% of a year's gross income in working capital.

Solvency

The average debt to asset ratio for participating farms improved very slightly in 2009, down from 45 to 44%. This is counter-intuitive in a year when profits were down dramatically. The likely explanation is that producers tried to mask their lack of earned net worth growth by increasing the valuation of farm assets. Debts include deferred liabilities, an estimate of the taxes that would have to be paid if assets were liquidated.

Table 1 shows the impact of financial leverage (or debt to asset position) on financial performance for these farms. This table illustrates the increased risk faced by highly leveraged farms in low profit years. In previous high-profit years, these farms were able to leverage borrowed capital to multiply their earnings growth. In 2009 however, these farms suffered major setbacks as interest costs far exceeded the earnings of borrowed capital.

Debt to Asset Ratio	Under 40%	Over 60%
Number of farms	915	583
Rate of return on assets	4.0 %	1.1 %
Rate of return on equity	3.7 %	-13.8 %
Current ratio	3.10:1	1.06:1
Working capital to revenue	53.0 %	3.2 %
Term debt coverage	1.78:1	0.48:1

Table 1: Impact of Financial Leverage, 2009

While debt to asset ratios have not changed a great deal in recent years, there have been major changes on the balance sheets of these farms. The average farm is growing rapidly. In constant dollars, total assets have increased by more than $970,000 in the past fourteen year period. Total debt increased by just over $430,000 over the same period. As a result, the average farm has gained over $530,000 of real net worth growth over the past thirteen years. This equates to 9% growth in net worth per year.

Net worth increases can have two major sources – those resulting from earnings, either farm or non-farm, and those resulting from asset appreciation. The producers who contribute to FINBIN track both cost and market values of their assets so it is possible to separate these components.

- Over this thirteen year period, 77% of the net worth growth was earned. Retained earnings result when farm and non-farm income exceed the amount consumed by family expenditures and income taxes.
- The remaining 23% of net worth growth resulted from asset appreciation.

It should be noted that the individual farms included in FINBIN change somewhat each year, as some farms exit and new farms join the contributing educational programs.

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Debt Repayment Ability

Term debt coverage ratio (TDCR) compares dollars available for debt repayment after family living and taxes versus scheduled debt repayment on intermediate and long-term debt. While other measures of business soundness, such as current ratio and debt to asset ratio, tend to change very little from year to year, TDCR shows much more variation. Therefore, it is probably a better indicator of year-to-year financial stress. A TDCR of 1.0 indicates that dollars generated for debt repayment exactly equalled scheduled payments.

The debt repayment capacity of these farms fell dramatically in 2009. The average farm generated only $1.03 of earnings to pay each $1.00 of scheduled term debt payments. Most lenders are very concerned when TDCR declines below 1.1:1. Again, the averages mask the variation in repayment capacity between farms and different groups of farms.

- Specialized hog operations (those that generated over 70% of their income from hog sales) had a negative TDCR (-1.13), indicating that they were far from earning enough to cover any scheduled payments.
- Specialized dairy operations (those that generated over 70% of their income from milk sales) earned enough to repay only 0.22 per dollar of scheduled payments.
- Of the major types of farm, only cash crop farms generated a TDCR over 1.0:1, on average. Crop farms had a TDCR of 1.52:1.
- When sorted based on gross sales, only mid-sized farms, grossing between $250,000 and $1 million, had a TDCR over 1.0:1, on average. Farms with gross sales of over $1 million had a TDCR of 0.95:1.

Lenders will look at many of these farms with much closer scrutiny and will require more documentation, especially from highly leveraged livestock operations, than in past years.

Type of Farm

Farms were categorized based on 70% of gross receipts from the respective enterprise. For this report, hog, dairy and beef farms were categorized based on 70% of gross receipts from the livestock enterprise or a combination of that enterprise plus crop sales.

Profits were down for all major types of farm in 2009. Most crop farms were still relatively profitable but down from previous years. Livestock farms were much less profitable than crop farms and all suffered decreases from the previous year.

Crop Farms

The 1,271 crop farms in the 2009 group earned a median net farm income of $60,101, down from the previous two years when the median level exceeded $130,000. The average rate of return on assets (ROA) for crop farms (assets valued at adjusted cost basis) was 5.3%, down from 13.5% in 2008.

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Crop Farms	2007	2008	2009
Median net farm income	$135,633	$132,748	$60,101
Rate of return on assets	16.5%	13.5%	5.3%
Net worth change	$172,550	$142,839	$97,918

Table 2: Crop Farm Returns

Prices received for corn, soybeans, and wheat were down from 2008 levels. Corn and wheat yields were strong while soybean yields were up slightly from the previous year. Costs per acre of corn on cash rented land increased by 12% while soybean and spring wheat costs were relatively constant. Corn seed was up by 23%, fertilizer by 35%, and cash rent by 9%.

Dairy Farms

2009 was a very difficult year for the dairy farms in this group. The median net farm income for the 544 dairy farms in this group was just $5,384, down from $66,373 in 2008. The average dairy farm had a negative return on assets and lost net worth.

Dairy Farms	2007	2008	2009
Median net farm income	$100,530	$66,373	$5,384
Rate of return on assets	14.2%	8.1%	-1.2%
Net worth change	$128,876	$78,645	$-7,368

Table 3: Dairy Farm Returns

After two years of historically high prices, the price received for milk decreased by 30% in 2009. While costs of production were also down, producers were unable to cut costs enough to remain profitable. Feed costs decreased by 11% as did total cost per cow. Production per cow was virtually unchanged for the fourth consecutive year.

Hog Farms

The 119 hog farms had a second consecutive year of sharply reduced profits. The median hog farm earned a net farm income of $7,415 compared to $55,524 in 2008. This group includes all types of hog operations, including those who produce pigs and those who only finish hogs. These farms are larger, on average, than the other farm types with total assets of over $3 million compared to $1.9 million for all other types of farm. The average pig producer earned a rate of return on assets of -2.8% and lost almost $50,000 of net worth.

Hog Farms	2007	2008	2009
Median net farm income	$107,888	$55,524	$7,415
Rate of return on assets	7.7%	2.0%	-2.8%
Net worth change	$117,383	$31,649	$-49,790

Table 4: Hog Farm Returns

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One of the most startling results from 2009 was the reduction in the number of hog enterprises, especially farrow-to-finish with only 17 farms included in the database. Farrow–to-finish enterprises lost $27 per head sold. Wean-to-finish producers lost almost $20 per head.

Beef Farms

There were 137 beef operations in this group of farms. Beef producers had the lowest median profit level of any group, with a median net farm loss of $6,534, down from a $30,921 profit the previous year. This group includes beef cow-calf operations and cattle grow/finish operations. The average beef farm earned a 0.6 % ROA in 2009 with assets valued at adjusted cost basis. Even with low returns, the average beef producer increase their net worth by over $38,000 but this increase resulted from non-farm earnings and increased valuation of assets.

Beef Farms	2007	2008	2009
Median net farm income	$30,116	$30,921	-6,534
Rate of return on assets	9.3%	6.1%	0.6%
Net worth change	$98,586	$46,200	$38,766

Table 5: Beef Farm Returns

Cow-calf producers lost over $200 per cow in 2009. For the consecutive year, cow-calf operators lost over $100 per cow. They again experienced a price decrease for their calves at the same time as their costs increased.

For the second consecutive year, cattle finishers did not cover their costs of production, although losses were not as substantial as in 2008. The average cattle finisher lost $39 per head.

Size of Farm

Earnings were down for all sizes of farm in 2009. Three-hundred-ninety (390) of the 2,401 farms grossed over $1,000,000. Those largest farms netted $109,384, down substantially from $340,104 in 2008. It is important to note that the largest farms often support multiple families. Farms that grossed under $500,000 supported 1.2 operators per farm, on average, while those that grossed over $1,000,000 had 1.6 operators.

Consistent with previous years, the smallest farms had very low or negative earnings. There were 233 farms that grossed $100,000 or less in 2009. These farms include beginning farmers who may be farming with the help of parents, exiting farmers who are maintaining a connection to the farm, and part-time operators. Farms that grossed $100,000 or less lost $1,809, on average. There are exceptions, but generally farms had to gross over $100,000 before they made significant earnings. The smallest farms generally rely on non-farm sources for most of their income. The average farm that grossed less than $100,000 earned $41,413 in non-farm income in 2009.

Rates of return were down for all sizes of farm from 2008 levels. Returns generally increased with size for farms with gross sales under $1 million. As in 2007 and 2008, there was a downturn for farms that earned over $1 million. In 2009, this downturn probably had more to do with type of farm than farm size. Many of the largest farms, based on gross sales, are specialized livestock

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operations that experienced low earnings and sometimes substantial losses in 2009. As in previous years, very small farms, as a group, earned very low rates of return.

Data Sources

The Minnesota data included in FINBIN is provided by producers who are participants in farm business management education programs throughout the state. The majority of the farms included (2,306 farms) are participants in the Minnesota State Colleges and Universities (MnSCU) Farm Business Management programs. The remaining farms (95 farms) are members of the Southwest Minnesota Farm Business Management Association.

Table 6 compares the farms included in FINBIN to all Minnesota farms based on USDA-Economic Research Service data for 2008. Based on these figures, FINBIN includes 13% of Minnesota farms that grossed over $250,000 and 16% of all Minnesota farms that grossed over $1,000,000. Thus, the FINBIN database includes a substantial share of Minnesota commercial producers. Because these farms choose to be involved in these educational programs, they are not a random sample of Minnesota farms. There may be characteristics of farms that participate in these educational programs that make them different from other farms in the state.

Sales Class	Number of Farms in FINBIN	Percent of Farms in FINBIN	Total Minnesota Farms	Percent of Minnesota Farms
< $100,000	233	10%	58,401	72%
$100,001 - 250,000	496	21%	9,400	12%
$250,001 - 500,000	708	30%	6,400	8%
$500,000 - 1,000,000	574	24%	4,430	6%
> $1,000,000	390	16%	2,371	3%

Table 6: Size of Farms included in FINBIN vs. Minnesota Farm Population

The farm financial data is processed through several levels of screening for accuracy and completeness. While it is impossible to verify accuracy of every data point, every effort is made to verify the integrity of each set of farm financial data included in the database.

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