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# **Financial Characteristics of North Dakota Farms 2007-2008**

**Andrew L. Swenson**

**Department of Agribusiness and Applied Economics  
Agricultural Experiment Station  
North Dakota State University  
Fargo, ND 58105-5636**

## **CONTACT INFORMATION**

We would be happy to provide a single copy of this publication free of charge. You can address your inquiry to: Edie Watts, NDSU, Department of Agribusiness and Applied Economics, P.O. Box 6050, Fargo, ND, 58108-6050, Ph. 701-231-7441, Fax 701-231-7400, e-mail [edie.watts@ndsu.edu](mailto:edie.watts@ndsu.edu). This publication is also available electronically at this web site: <http://agecon.lib.umn.edu/>.

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## **Abstract**

The performance of over 500 North Dakota farms, 2007-2008, is summarized using 16 financial measures. Farms are categorized by geographic region, farm type, farm size, gross cash sales, farm tenure, net farm income, debt-to-asset, and age of farmer to analyze relationships between financial performance and farm characteristics. Five-year averages, 2003-2007, and farm financial trends for the 1999-2008 period are also presented. In 2008, median and average acreage per farm was 2,000 and 2,578, respectively. Median and average cash farm revenue was \$464,464 and \$607,623, respectively. Over 70% of farms were crop farms and 47 percent of farms had gross sales exceeding \$500,000. Median age of farm operators was 47.

Financial measures for 2008 and 2007 were much superior to those in other years for the 1999-2008 period. The highest median net farm income was \$127,791 in 2007, followed by \$114,520 in 2008. The lowest was \$27,729 in 2001. The Red River Valley and crop farms typically had stronger profitability, solvency, and repayment capacity from 1999 to 2008 than other regions and farm types, respectively. Exceptions were 2007 when the central regions had the best regional performance and 2005 when the south central region and livestock farms had better performance. The 2008 and 2007 median net farm income for crop farms was \$170,181 and \$171,838, respectively, compared to only \$14,343 and \$25,531 for livestock farms.

Farms with sales less than \$250,000 were over twice as likely to have debt-to-asset higher than 70 percent than were farms with sales greater than \$250,000. Farms that own some crop land, but less than 40 percent were more likely to be crop farms, farm more acreage, have larger sales, and be more profitable. As expected, solvency and percent of crop land owned increased with farmer age. In 1999, 2000, 2003, 2004, 2007 and 2008 the rate of return on equity exceeded the rate of return on assets, which indicates that debt capital was employed profitably. Interest expense as a percent of gross revenue declined in 2007 and 2008 because of sharp increases in gross revenue, after increasing in 2005 and 2006 because of higher debt and interest rates.

**Keywords:** Farm financial management, farm management, farm income, liquidity, solvency, profitability, repayment capacity, financial efficiency, financial benchmarks, tenure, North Dakota.

## INTRODUCTION

Financial statements such as the balance sheet and income statement provide a structured format to summarize financial information so it is more manageable for decision making. It is helpful to further simplify or summarize information contained in financial statements into key measures of financial performance. However, the calculation of a financial measure can be fruitless unless there is a meaningful basis of comparison to evaluate the number. Two methods of comparison are:

- ❶ **Past performance.** The progress of a business can be monitored by constructing financial measures on a periodic basis and comparing present to past performance.
- ❷ **Industry benchmarks.** The average or median of a financial measure from several similar businesses provides a good point of reference. There are statewide farm record programs in some states, including North Dakota. Each farm has its own unique aspects, so the most appropriate comparison would be farms that have similar enterprises and resources.

Whatever method of comparison is used, it is imperative that the procedures for construction of financial statements and performance measures are consistent over time and between farms to ensure an "apples-to-apples" comparison.

The Farm Financial Standards Task Force (FFSTF), which was formed by the American Bankers Association in 1989, has provided recommendations of standards for financial statement construction and the calculation of 16 measures of financial performance. These recommendations were adopted, in most part, by the North Dakota Farm Business Management Education Program and are the basis for the benchmarks presented in this publication. The Appendix has an explanation of the financial measures used in this study.

The purpose of this study is to provide information to producers, lenders, educators, and others on the financial performance of a sample of North Dakota farms. Table 1 lists the median operator age, farm size and selected financial factors, 1999-2008. The

data are from financial summaries of farms participating in the North Dakota Farm Business Management Education program. In this study, the median and upper and lower quartiles of 16 financial performance measures are presented for all farms in the data set and for groupings of farms by characteristic such as farm type, farm size, and age of producer. The results can be used by producers and lenders to evaluate the financial performance of a farm. Also, trends can be identified and relationships between farm characteristics and financial measures can be analyzed. However because of the small number of farms in this study, the results should be used cautiously and only be considered guidelines.

## SOURCE OF DATA

About 700 farms are enrolled in the North Dakota Farm Business Management Education program. Instructors educate and assist producers in record keeping and review data for completeness and accuracy. Instructors use the Finpack farm financial management software program to generate financial summaries. From 1999-2008, the financial summaries of over 500 farms each year were considered usable for this study.

About 85 percent of the same farms are in the study from one year to the next. Annual turnover occurs from changes in farm management program enrollment and the level of farms completing their records by a cutoff date.

The farms in this study are larger and the age of the farm operators younger than the state average. In 2008, there were 32,000 farms in North Dakota with agricultural production of at least \$1,000. Only 12,000, or 37%, had gross receipts greater than \$100,000, whereas 90% of the 532 farms in this study exceed that sales volume (median gross sales was \$464,464). The farms in the study are more representative of operations that provide the primary source of net family income. The average age of farm operators in this study is 45 compared to 56 for the state average.



## INTERPRETATION OF RESULTS

Each financial measure was calculated for each farm. Refer to the Appendix for definitions of the financial measures and an explanation of asset valuation and accrual adjustments.

Farms were grouped by characteristics such as region, type of farm, and size and were sorted in order from strongest to weakest by each of the 16 financial measures. The **median** is the midpoint value of the financial measure: one-half of the farms in the category had a higher value and one-half had a lower value than the median. The **upper quartile** is the value that was exceeded by one-fourth of the farms, and the **lower quartile** is the value that was exceeded by three-fourths of the farms. (Another definition of lower quartile is the value for which one-quarter of the farms in the category had a weaker value.)

Individual farm operators and lenders can use this study for benchmarks of comparison if their financial measures are calculated similarly. For example, a farm operator 30 years of age may compare his/her profitability and financial efficiency with those of other young operators. Or, a lender may compare the solvency and repayment capacity of producers who rent all their crop land. This study also can be used to look at relationships and trends. What is the relationship between age of farmer and rate of return on equity? How has operating profit margin of livestock farms changed over time?

One ratio is not sufficient to make conclusions about the overall financial performance of a farm business. For example, a crop farm may have a debt-to-asset ratio of 60%, which is worse than the median value of 46.9% (shown on table 6) for the crop farm enterprise category. However, other factors such as profitability, total assets, and age of operator should also be considered.

Also, a farm can be adversely affected by extraordinary circumstances. Profitability in the low quartile may not be reflective of management capability if the farm had localized bad weather that was not experienced by many other producers in the farm category.

Caution must be used when analyzing the tables because a small number of farms increases the possibility that results may not be representative of a farm category. In this study for 2008, there are only 51 farms with sales less than \$100,000, 59 mixed livestock-crop enterprise farms, and 87 livestock farms. Also in 2008, there are only 61 and 82 farms in the net farm income categories of \$20,000 to \$49,999 and \$50,000 to \$99,999, respectively.

Performance of the Red River Valley region may not be representative of the central or northern areas of the Red River Valley because nearly all valley farms in the study are from the south. Also since 2003, there was a lack of farms in the northern portion of the west region. Lastly, the livestock farm type is dominated by the beef cow-calf enterprise.

There are some strong correlations between two or more classifications, so it is difficult to associate a financial measure with an individual farm characteristic.

For example, the profitability of livestock, in comparison to crop farming, is reflected in farm categories that had a disproportionate number of livestock farms, such as the west region, farms with greater than 40% crop land ownership, and farms with less than \$100,000 sales. Also, comparison of farms by enterprise type, farm size and gross sales can be affected by regional performance. The Red River Valley has the highest proportion, relative to other regions, of crop farms, farms of less than 2,000 acres, and farms with gross income greater than \$500,000.

Table 1 shows the 10-year trends in financial performance and farm characteristics. Table 2 lists the farm characteristics and percentage distribution for 2008 and the breakout of these characteristics by region of North Dakota. Tables 3 through 11 display the median and quartiles of 16 financial measures by farm characteristics. Figures 1 through 16 display relationships between selected farm characteristics and financial measures. A summary of highlights by farm characteristics is also presented.

**TABLE 1. MEDIAN FARM SIZE, FARM OPERATOR AGE, AND FINANCIAL FACTORS OF FARMS PARTICIPATING IN THE NORTH DAKOTA FARM BUSINESS MANAGEMENT EDUCATION PROGRAM, 1999-2008.**

	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999
Number of Farms	532	531	509	520	522	513	513	532	553	539
	-----Median-----									
Age of Operator	47	47	46	46	46	45	44	44	44	43
Farm Size (acres)	2,001	2,000	1,966	1,998	2,002	1,995	2,033	1,937	1,916	1,921
Gross Cash Revenue	464,464	353,252	281,751	281,667	265,524	247,757	220,781	216,697	205,659	190,676
Total Farm Assets	995,609	810,426	688,802	684,181	652,575	612,437	575,606	543,860	549,636	520,094
Total Farm Liabilities	419,979	371,180	348,102	338,657	323,805	305,268	284,828	287,068	274,640	266,401
Current Ratio	1.8	1.7	1.2	1.2	1.3	1.4	1.3	1.2	1.4	1.4
Working Capital	128,854	103,063	20,660	27,812	35,264	39,712	29,099	21,910	36,612	29,643
Debt-to-asset (%)	48.4	50.0	57.5	54.8	54.3	54.3	53.3	55.5	53.9	55.5
Rate of Return on Farm Assets (%)	10.6	15.7	4.7	4.9	6.1	7.0	5.7	4.1	7.6	8.4
Rate of Return on Farm Equity (%)	15.8	25.3	2.4	4.3	6.7	8.4	4.4	3.2	7.7	9.0
Operating Profit Margin (%)	20.8	29.3	12.2	12.9	15.1	17.4	14.5	12.1	20.6	21.6
Net Farm Income	114,520	127,791	35,980	42,286	44,912	49,181	38,079	27,729	45,085	42,009
Term Debt Coverage Ratio	2.7	3.3	1.2	1.3	1.5	1.6	1.3	1.0	1.6	1.5
Term Debt & Capital Repayment Margin (\$)	67,276	86,825	5,378	10,110	18,752	21,012	10,628	301	17,768	17,973
Asset Turnover Ratio	0.52	0.56	0.38	0.39	0.40	0.42	0.37	0.38	0.42	0.38
Operating Expense Ratio (%)	66.9	58.2	72.5	71.1	69.2	66.8	68.8	70.9	63.3	61.2
Depreciation Expense Ratio (%)	4.1	4.3	5.6	6.0	6.0	5.9	5.6	5.9	5.3	5.7
Interest Expense Ratio (%)	4.4	5.2	7.2	6.0	5.6	5.6	6.6	7.6	7.8	8.4
Net Farm Income Ratio (%)	24.2	30.6	14.2	16.0	18.6	19.6	17.3	14.0	21.7	22.4

# FARM CLASSIFICATION AND HIGHLIGHTS

## ALL FARMS

### Highlights

- Some consistent trends over the past ten years, 1999-2008, for farms enrolled in the North Dakota Farm Business Management Education Program are:
  - farms are getting larger as measured by median gross revenue which increased 143%, and by median farm assets and liabilities, which increased 91% and 58%, to \$995,609 and \$419,979, respectively.
  - farmers are getting older; the median age increased from 43 to 47.
- Liquidity and solvency measures and interest expense as a percent of gross revenue were the best in 2008 for the 1999-2008 period. The superior year for all other financial measures was 2007. Costs were highest in history in 2008, followed by 2007, but crop prices set record highs during that two year period. Dry edible bean and winter wheat yields set records in 2007. Crop yields were generally strong in 2007 and 2008, although the west was dry in 2008. Median net farm income was \$114,520 in 2008 and \$127,791 in 2007.
- Financial performance in 2006 was the second lowest in the 1999-2008 period. Good crop prices and record sugarbeet yields were not enough to offset high input costs and severe drought in the west and portions of central North Dakota. Profit declined in 2005 from 2004 despite record corn, soybean, sunflower, and flax yields and high cattle prices. Input costs were high and portions of the state, particularly the northeast, had production problems. Financial performance in 2004 was strong albeit down from 2003. High costs and poor row crop yields were offset by crop insurance, high spring wheat, canola and field pea yields and strong beef cow-calf profit and flax prices.
- Median net farm income in 2003, \$49,181, was the third highest in the 1999-2008 period. A good wheat and barley crop, strong crop prices and livestock profit, and disaster aid legislated in 2003, for crop losses that occurred in 2001 and 2002, all contributed. Profit increased 37% in 2002 from higher prices and lower production costs. Profit in 2001 was lowest in 1999-2008 period because of lower government subsidies and higher crop production costs with continued low commodity prices. Financial performance was strong in 1999 and 2000, despite low crop prices, because of extraordinary government and crop insurance payments and higher beef prices. Also, at the time, yields and acreage of corn, soybeans and sugarbeets were at record levels.
- Median current ratio was 1.8 in 2008 and 1.7 in 2007 after ranging between 1.2 to 1.4 from 1999 to 2006. Median debt-to-asset in 2007 improved to 50% and to 48.4% in 2008, the best in the 1999-2008 period. It was only 57.5% in 2006 which was the worst during the past 10 years.
- In 2007, median rates of return on equity and assets exploded to 25.3% and 15.7%, respectively, but dropped in 2008 to 15.8% and 10.6%, respectively, which are still high historically. In the 1999-2008 period, the years that ROE exceeded ROA, which indicated that debt capital was employed profitably, were 1999, 2000, 2003, 2004, 2007, and 2008.
- Median term debt coverage ratio and term debt and capital repayment margin were 2.7 and \$67,276, respectively, in 2008, down from 3.3 and \$86,825 in 2007. Prior to 2007, the ten year highs were 1.6 and \$21,012, respectively, in 2003.
- Interest expense as a percent of gross revenue declined from 1999 to 2004, but increased in 2005 and 2006 because of higher debt and interest rates. It declined sharply in 2007, to 5.2%, and in 2008, to 4.4% because of much stronger gross revenue. Median net farm income as a percent of gross revenue was 24.2% in 2008 and 30.6% in 2007. It ranged from 22.4% and 14.0% between 1999 and 2006.

**TABLE 2. FARM CLASSIFICATIONS AND PERCENT DISTRIBUTION OF FARM TYPES WITHIN REGIONS, NORTH DAKOTA FARM BUSINESS MANAGEMENT EDUCATION PROGRAM, 2008.**

Farm Group Category	Number of Farms (532)	Percentage	Farm Group Category Breakout by Region			
			Red River Valley	North Central	South Central	West
Region			98	184	157	93
Red River Valley	98	18.4				
North Central	184	34.6				
South Central	157	29.5				
West	93	17.5				
Farm Enterprise			-----percentage-----			
Crop	386	72.6	99.0	82.1	65.6	37.6
Livestock	87	16.4	1.0	13.0	15.9	39.8
Mixed	59	11.1	0.0	4.9	18.5	22.6
Farm Sales						
\$99,999 or less	51	9.6	3.1	6.5	11.5	19.4
\$100,000 - \$249,999	93	17.5	15.3	16.8	17.2	21.5
\$250,000 - \$499,999	140	26.3	17.3	27.7	28.7	29.0
\$500,000 or more	248	46.6	64.3	48.9	42.7	30.1
Farm Size						
1,999 acres or less	265	49.8	72.4	42.4	53.5	34.4
2,000 acres or more	267	50.2	27.6	57.6	46.5	65.6
Cropland Tenure						
Full tenant	105	19.7	22.4	15.2	19.1	26.9
1-20 percent owned	134	25.2	32.7	31.0	14.0	24.7
21-40 percent owned	116	21.8	30.6	17.9	25.5	14.0
41 percent or more owned	162	30.5	14.3	34.2	36.9	29.0
Farm Income						
\$19,999 or less	111	20.9	4.1	15.2	19.7	51.6
\$20,000 - \$49,999	61	11.5	10.2	7.6	13.4	17.2
\$50,000 - \$99,999	82	15.4	11.2	16.8	19.7	9.7
\$100,000 or more	278	52.3	74.5	60.3	47.1	21.5
Debt-to-asset Ratio						
0 - 40 percent	208	39.1	44.9	43.5	33.1	34.4
41 - 70 percent	221	41.5	38.8	38.6	47.8	39.8
71 percent or more	103	19.4	16.3	17.9	19.1	25.8
Farmer Age						
39 years or younger	159	29.9	30.6	31.5	28.0	29.0
40 - 49 years	152	28.6	31.6	25.5	26.8	34.4
50 years or older	221	41.5	37.8	42.9	45.2	36.6

## **REGION**

Farms are classified in one of four geographic regions in North Dakota, based on the location of their Farm Business Management program. However, farms enrolled in the Bismarck program are classified as "west" or "south central" according to which side of the Missouri River the farm is located. Also, some farms that are enrolled in the Casselton and Wahpeton programs are not in the Red River Valley and are classified as south-central. The southern area of the "west" region is better represented than the northern area. The northern area of the Red River Valley has little representation. Locations of North Dakota Farm Business Management programs that participated in the 2008 summaries are:

Red River Valley: Wahpeton and Casselton

North Central: Bottineau, Devils Lake, Langdon, Minot, and Rugby

South Central: Bismarck, Carrington, Jamestown, and Napoleon

West: Bismarck, Dickinson, Glen Ullin and Williston

### **Highlights**

- In 2008 the median farm size increased from the Red River Valley (1,416 acres, all crop land) to the west region (2,945 acres, including pasture). Median farm size was 2,309 acres (1,954 crop acres) in the north central region and 1,839 acres (1,375 crop acres) for the south central region .
- Several farm characteristics are strongly related to region. Red River Valley farms are more likely to be crop farms and typically have smaller total acreage (crop land and pasture) but larger total farm sales, assets, and liabilities than farms in other regions.
- In 2008, the incidence of livestock and mixed enterprise farms ranged from only 1% in the Red River Valley to 62% in the west.
- In 2007, each region attained their strongest median net farm income over the prior 10 year period. In 2008, the Red River Valley increased to \$201,875 from \$115,712 in 2007, the north central region was similar in 2008, \$149,156 compared to \$157,109 in 2007, but the south central dropped to \$92,127 from 127,790
- The median net farm income of the west region dropped to \$18,956 from \$77,136 in 2007. In 2006, it had the lowest median net farm income, \$689, of any region over the past 10 years. The west had drought in 2006 and 2008 and livestock profit was low in 2006-2008.
- The median current ratio in 2008 was 1.9 in the Red River Valley and north central regions. It was 1.7 in the west and 1.6 in the south central region. The five year average, 2003-2007, median current ratio was 1.3 in the north central region and 1.4 in the other regions.
- In 2008, median debt-to-asset improved substantially to 47.3% for the Red River Valley and 44.4% for the north central regions but deteriorated slightly to 47.7% and 55.4% in the south central and west regions, respectively.
- The five year average, 2003-2007, median term debt coverage ratio ranged from 2.1 in the Red River Valley to 1.4 in the west region. In 2008 it was highest, 3.8, in the Red River Valley and lowest, 1.0, in the west region.
- The median operating expense (all expenses except depreciation and interest) as a percent of gross revenue in the Red River Valley, 65.1%, was similar to 2007. In 2007, it was less than 60% for other regions of the state. That was the only instance, 1999-2008, that any region achieved less than 60%. However, this financial measure deteriorated for the non-valley regions in 2008.

## FARM ENTERPRISE

Farms were classified as “crop” if 70% or more of total sales were from crops, and “livestock” if livestock sales accounted for 70% or more of total sales. The remaining farms were classified as “mixed”. The “livestock” farm type is dominated by the beef cow-calf enterprise.

### Highlights

- In 2008, 73% of farms were classified as crop, 16% as livestock and 11% were mixed enterprise farms.
- In the west region 40% of farms were classified as livestock in 2008, compared to 1% in the Red River Valley, 13% in the north central and 16% in the south central regions.
- In every year, 1999-2008, crop farms were larger than livestock and mixed enterprise farms as measured by median total assets, total liabilities, and gross income. The only year in which median net farm income of both livestock and mixed enterprise farms exceeded that of crop farms was in 2005. Profitability of livestock farms was similar to crop farms in 2001.
- For every financial measure, crop farms either in 2007 or in 2008 had the best performance of any year and farm type during the entire 1999-2008 period. For example, median rate of return on equity debt coverage ratio were 37% in 2007 and 21.7% in 2008. These far exceeded the previous 10-year high of 12% which occurred in 2003 for crop farms.
- Livestock farms had their best financial performance in 2005. It is the only year in the 1999-2008 period where livestock farms had better solvency and rates of return on assets and equity than crop farms.
- In 2008, median net farm income for crop farms of \$170,181 was similar to \$171,838 in 2007, but for livestock farms it declined 44% to \$14,343 and mixed enterprise farms declined 49% to \$33,562.
- A higher asset turnover ratio for crop farms is typical. In 2008, the median was .60, .22, and .31 for crop, livestock and mixed enterprise farms, respectively. The five year average, 2003-2007, median asset turnover was .51 for crop farms, .26 for livestock farms (predominantly beef cow-calf farms) and .33 for mixed enterprise farms.
- Crop farms had the highest median term debt coverage ratio, 3.7 in 2008, compared to 0.8 for livestock farms. Livestock farms had the highest in 2005, 2004 and 2001, compared to other farm types.
- In 2008, the median interest expense as a percent of gross revenue decreased to 3.6% for crop farms, 8.0% for livestock farms, and 7.0% for mixed enterprise farms. Every year, 1999-2008, crop farms had the best measure.
- In 2008, crop farms had the best performance in converting gross income into net income, 26.7%, compared to 7.7% for livestock farms. However in the 2004-2005 and 1998-2001 periods, livestock farms had a better ratio than crop farms.

Figure 1. Median Total Farm Assets and Liabilities by Farm Type, 2008, N.D. Farm Mgt Program

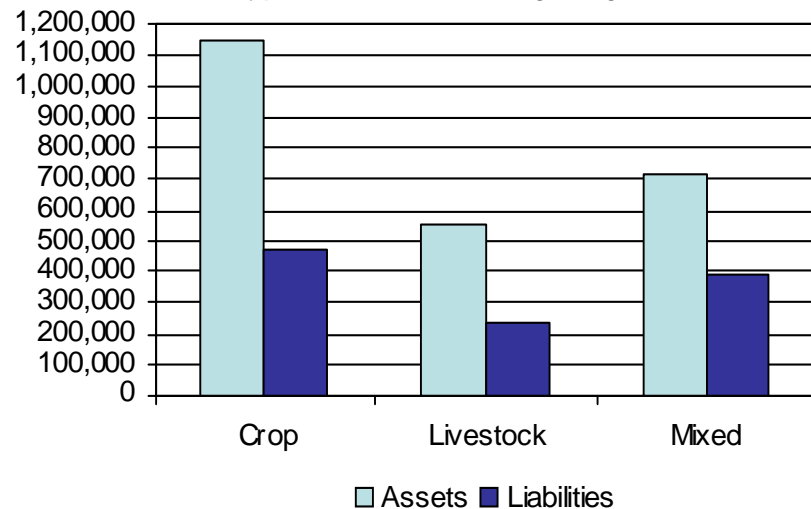


Figure 2. Median Net Farm Income by Farm Type, 1999-2008 N.D. Farm Mgt Program

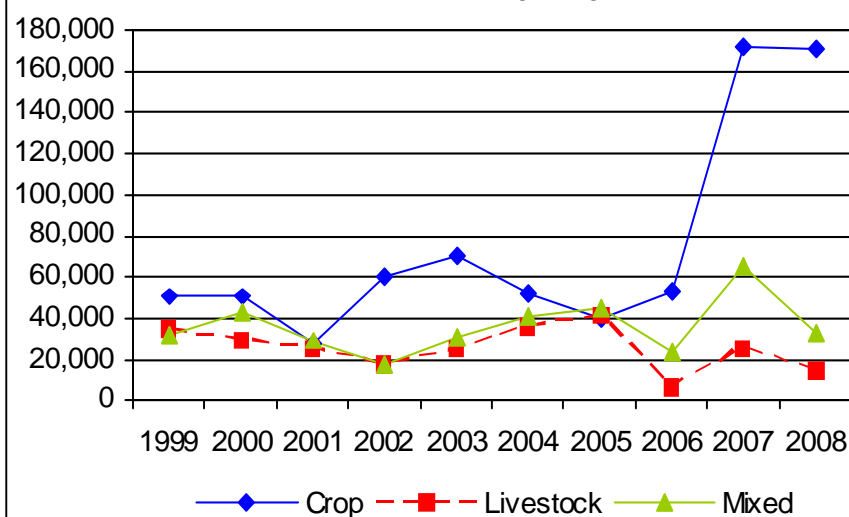


Figure 3. Median Rate of Return on Assets by Farm Type, 1999-2008, N.D. Farm Mgt Program

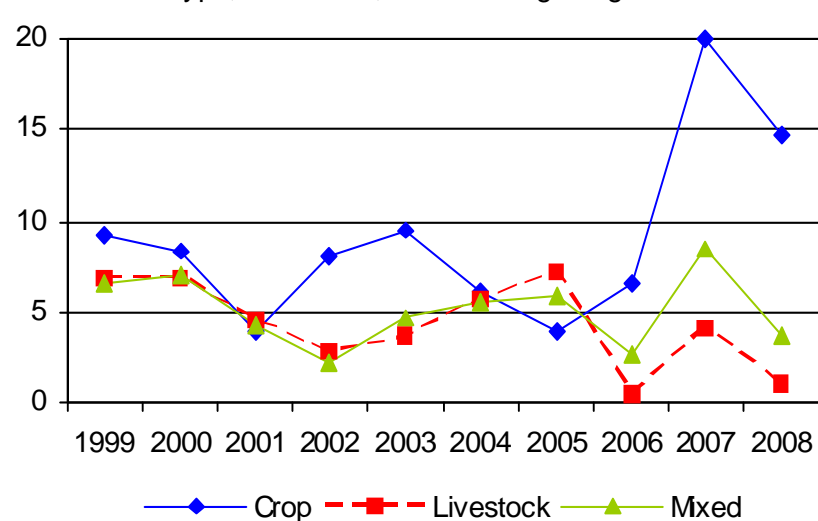
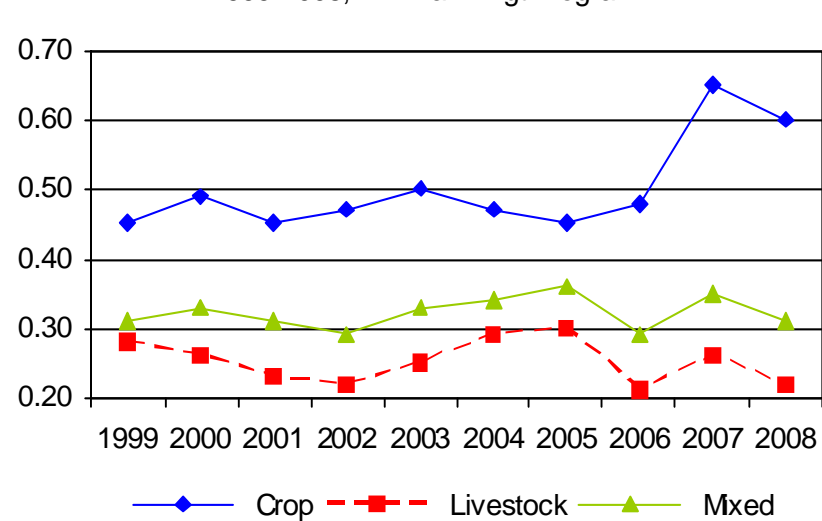


Figure 4. Median Asset Turnover Ratio by Farm Type, 1999-2008, N.D. Farm Mgt Program



## FARM SALES

Farms were classified in one of four cash farm sales categories. Farm sales include cash receipts from crop and livestock sales, government payments, and other farm income.

The categories were:

- less than \$100,000
- \$100,000 to \$249,999
- \$250,000 to 499,999
- \$500,000 or more

### Highlights

- Median farm sales were \$466,464 in 2008 and average farm sales were \$607,623. The percentage of farms with over \$500,000 of sales has increased from 8% in 1999 to 21% in 2006, 33% in 2007 and 47% in 2008.
- Gross sales are correlated to region and farm type. In 2008, 64% of Red River Valley farms had sales in excess of \$500,000, compared to 30% in the west region. Also, crop farms were six times more likely to have sales in excess of \$500,000 than were livestock farms.
- Young farmers typically have lower sales than older farmers. However, farmers between the ages of 40 and 49 are more likely to have farm sales greater than \$500,000 than farmers 50 years and older.
- A strong direct relationship between the level of gross sales and financial performance is typical.
- In 2008, median net farm income decreased 23%, to \$9,106, for farms with less than \$100,000 sales, 50%, to \$28,510, for farms with sales \$100,000 to \$249,999, 38%, to \$87,755, for farms with sales \$250,000 to \$499,999, and 13%, to \$257,152, for farms with sales greater than \$500,000.
- Farms with low sales typically have worse solvency. The median debt-to-asset was 63.1%, 55.8%, 48.3%, and 40.9% for the lowest to highest farm sale groups, respectively, in 2008.
- Typically, repayment capacity is directly related to amount of sales. The five-year average, 2003-2007, median term debt coverage ratio was 1.3, 1.3, 2.0, and 2.3 for the lowest to highest farm sale categories, respectively. In 2007 and 2008, farms with sales greater than \$500,000 had extremely high median term debt coverage ratios of over 4.0.
- Farms with greater sales use a smaller portion of gross revenue for interest expense. In 2008, the interest expense as a percent of gross revenue was 11.0%, 6.8%, 4.9%, and 3.2% for the lowest to highest farm sale groups, respectively.
- Debt capital is employed profitably if rate of return on equity exceeds the rate of return on assets. In the 10-year period, from 1999 to 2008, this occurred in nine of the years for farms with greater than \$500,000 sales and none of the years for farms with less than \$100,000 sales.



Figure 5. Median Total Farm Assets and Liabilities by Farm Sales, 2008, N.D. Farm Mgt Program

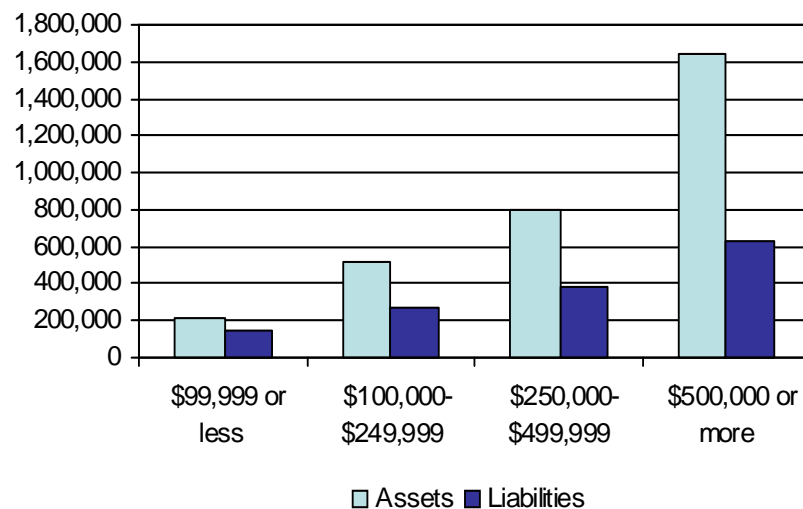


Figure 6. Median Net Farm Income by Farm Sales, 1999-2008, N.D. Farm Mgt Program

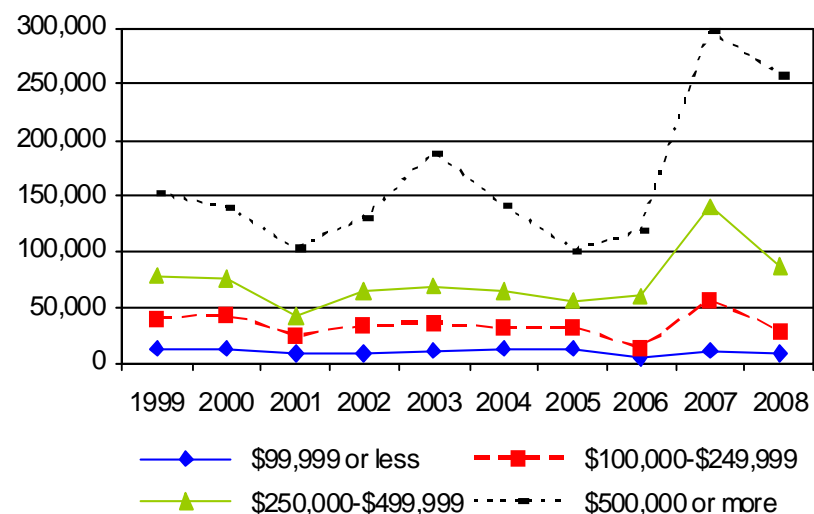


Figure 7. Median Term Debt Coverage Ratio by Farm Sales, 1999-2008, N.D. Farm Mgt Program

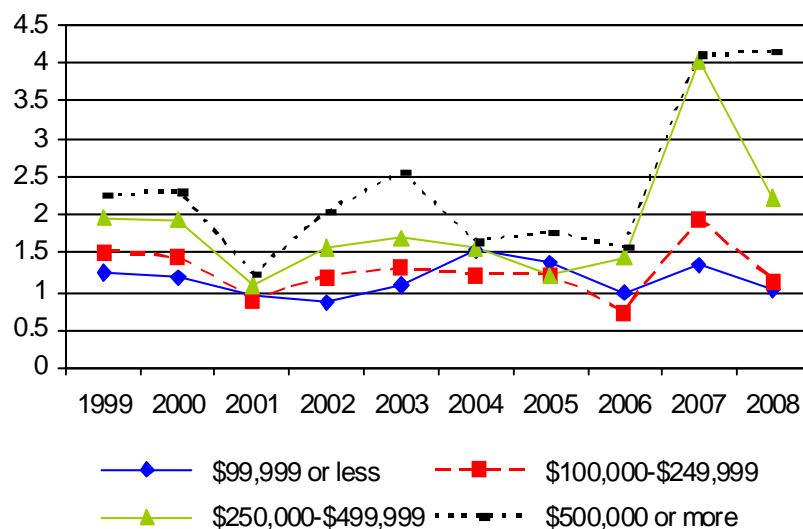
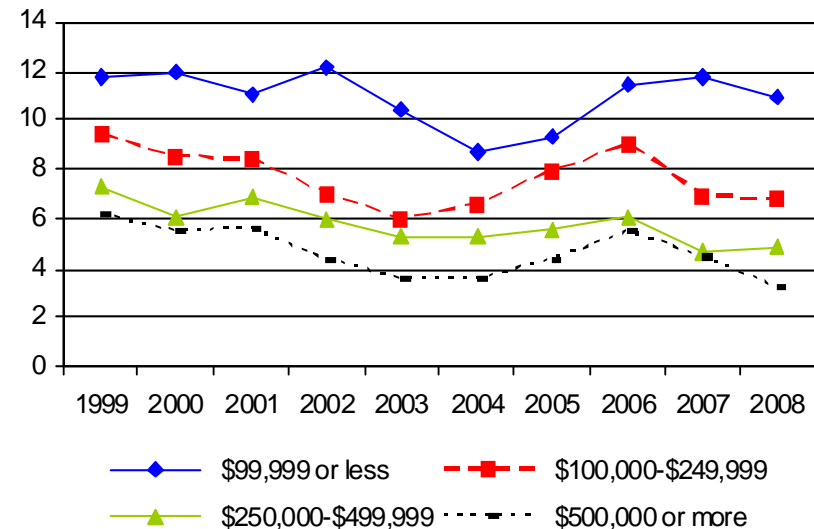


Figure 8. Median Interest Expense as a Percent of Gross Revenue, by Farm Sales, 1999-2008, N.D. Farm Mgt Program



## FARM SIZE

Both crop and pasture acres were included in determining farm size.

Farm size categories were:      1,999 acres or less  
   2,000 acres or more

### Highlights

- Because of less pasture land and more productive crop land, only about one-fourth of the Red River Valley farms were larger than 2,000 acres, compared to two-thirds of west region farms and about one-half of farms in the central regions.
- From 1999 to 2007, mixed enterprise farms were slightly more likely to be larger than 2,000 acres than were crop or livestock farms, but in 2008, 52% of crop farms were over 2,000 acres compared to 45% of livestock farms and 49% of mixed enterprise farms.
- In 2006 through 2008, less than one-third of farmers under 40 years old operated more than 2,000 acres compared to two-thirds of farmers between 40 and 49 years old and about one-half of farmers over 50 years or older.
- As expected, farms with greater than 2,000 acres have greater assets, liabilities, sales and profitability than smaller farms. Larger farms also have better solvency. Median debt-to-asset was 54% for farms less than 2,000 acres and 43% for larger sized farms in 2008.
- In 2008, median net farm income was \$62,035 for farms with less than 2,000 acres and \$205,321 for farms with more than 2,000 acres. Historically, farms with more than 2,000 acres have over twice the net farm income of the small farm group.
- Median current ratio in 2008 was 1.9 for farms larger than 2000 acres and 1.7 for farms with less than 2000 acres. The five year average, 2003-2007, median current ratio was 1.4 for both farm size groups.
- Median term debt coverage ratio in 2007 and 2008, as typical, was better for farms with more than 2,000 acres than for smaller farms, but was the same, 1.15, in 2006. Although smaller acreage farms generate less farm cash income, they tend to have more non-farm income than larger farms.
- Financial efficiency measures of farm size groups tend to be similar. This indicates that greater profitability of farms larger than 2,000 acres is due to larger sales volume and/or greater operator labor efficiencies, not lower operating expenses per dollar of sales.

## CROPLAND TENURE

This is a classification of the portion of crop land that is rented. Four categories were used.

Full tenant  
1-20 percent owned  
21-40 percent owned  
41 percent or over owned

### Highlights:

- Substantial ownership of crop land is less likely in the Red River Valley. Slightly over one out of ten Red River Valley farms owned more than 40% of the crop land they operated, compared to one-third of farms in other regions.
- Crop land ownership increases with age. In 2008, farmers 50 years or older were four times more likely to own more than 40% of their crop land than young farmers. Four of ten young farmers rented all of their crop land, compared to one of ten farmers 50 years or older.
- Operators of livestock and mixed enterprise farms own a greater portion of their crop land than crop farms. Between one-third and one-half of livestock farms and mixed enterprise farms own more than 40% of the crop land that they operate, compared to one-fourth of crop farms.
- Interestingly, small farms (less than 2,000 acres) were more likely to either own no crop land or to own more than 40% of crop land than were large farms (more than 2,000 acres).
- Farms that own some land, but not a lot, are typically the most profitable. Farms in the 1 to 20% crop land ownership category, followed by farms with 20-40% crop land ownership, are also most likely to be crop farms, farm more acreage, and have larger sales.
- During 1999 to 2008 there is no clear relationship between current ratio and land tenure.
- Farms with greater crop land ownership typically have better solvency. The five year average, 2003-2007, median debt-to-asset ratio was 60.8% for farms with no crop land ownership, 57.0% for farms with 1-20% crop land ownership, 53.7% for farms with 21-40% crop land ownership, and 48.5% for farms with crop land ownership greater than 40%. One reason could be that older, more established farmers own a greater portion of their crop land.
- In 2008, median net farm income ranged from \$213,096 for farms with 1 to 20% crop land ownership to \$57,565 for farms that rent all crop land.
- Typically, the lower profit of farms with greater than 40% crop land ownership, compared to farms with 1 to 40% crop land ownership, is associated with the fact these farms are more likely to also be in livestock, low sales, and small size farm categories and less likely to be in the Red River Region.
- Farms with a smaller proportion of crop land ownership have fewer land assets and land interest costs and therefore have higher asset turnover ratios and lower interest expense as a percent of gross revenue.

Figure 9. Median Net Farm Income by Crop Land Tenure, 1999-2008, N.D. Farm Mgt Program

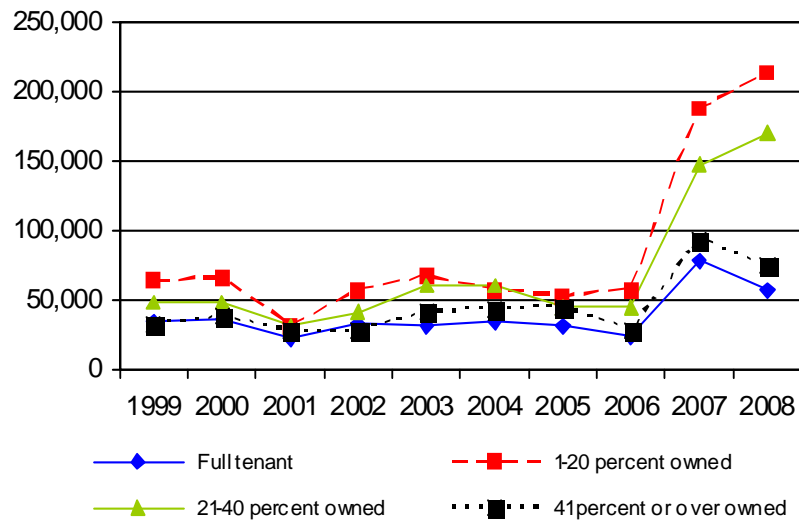


Figure 10. Median Asset Turnover Ratio by Crop Land Tenure, 1999-2008, N.D. Farm Mgt Program

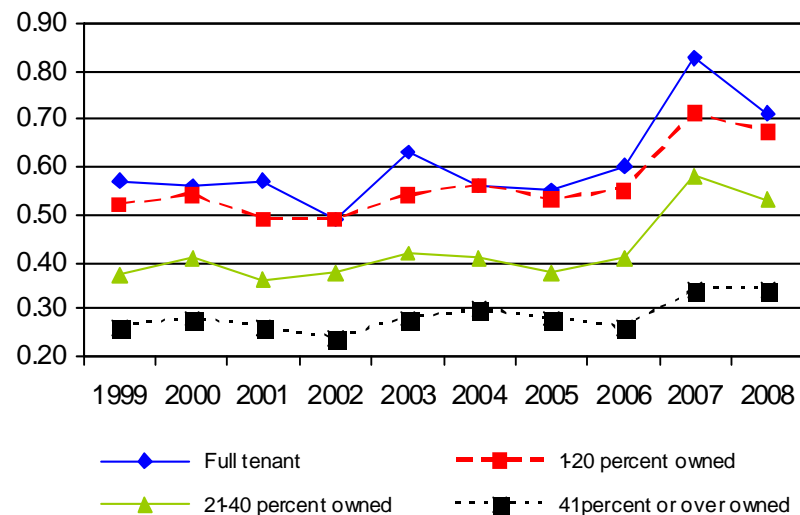


Figure 11. Median Net Farm Income by Debt-to-Asset Group, 1999-2008, N.D. Farm Mgt Program

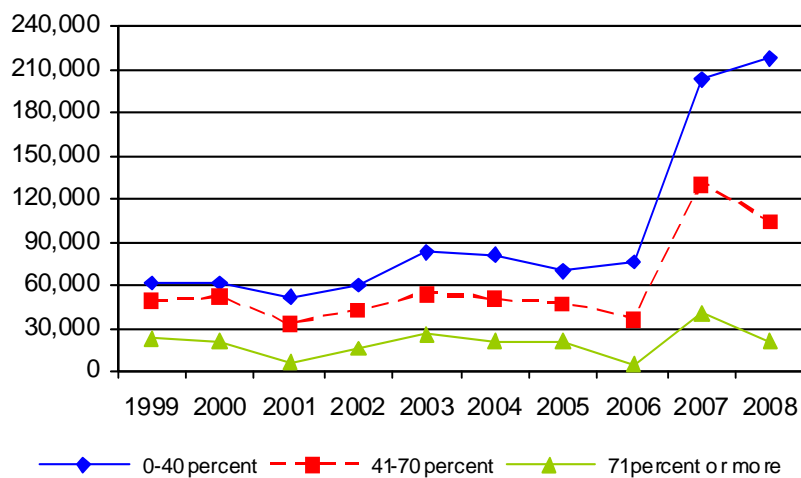
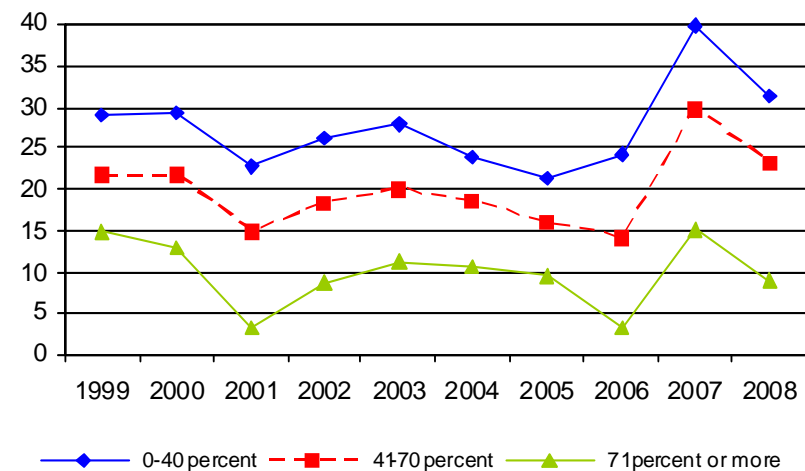


Figure 12. Median Net Farm Income as a Percent of Gross Revenue by Debt-to-Asset Group, 1999-2008, N.D. Farm Mgt Program



## NET FARM INCOME

Four levels of net farm income were used to group farms.

\$19,999 or less  
\$20,000 - \$49,999  
\$50,000 - \$99,999  
\$100,000 or more

### Highlights

- Farm profit is volatile and the largest change occurred in 2007. Year-to-year changes in median net farm income within regions and farm types averaged about 60% the past 10 years. Volatility is less when all farms are grouped together. Statewide, the median net farm income decreased 10% in 2008, but increased 255% in 2007 after declining 15%, 6%, and 9% in the years 2006, 2005, and 2004, respectively.
- The highest median net farm income in the 1999-2008 period was \$127,791 in 2007 followed by \$114,520 in 2008 and \$49,181 in 2003. The lowest was \$27,729 in 2001.
- The Red River Valley region had the highest median net farm income every year from 1999 to 2008, except for 2005 and 2007. The west region farms had the lowest median net farm income six of the ten years.
- Typically, crop farms have been more profitable than livestock farms. In 2008, two-thirds of crop farms had net farm income greater than \$50,000 compared to one out of ten of livestock farms. About six of ten livestock farms earned less than \$20,000.
- As expected, net farm income is strongly associated with farm sales and farm size. In 2008, 70% of farms with sales greater than \$250,000 had net farm income greater than \$100,000. About 70% of farms with less than \$100,000 sales earned less than \$20,000. Two-thirds of farms larger than 2,000 acres had net farm income greater than \$100,000, compared to about one-third smaller farms.
- In all years, from 1999 to 2008 except one, farmers 40 to 49 years old had higher median net farm income than farmers that were younger or older. The exception was older farmers in 2006.
- Solvency, liquidity, repayment capacity, and financial efficiency were strongly correlated with net farm income.
- Low-debt farms (less than 40% debt-to-asset) are typically three to four times more likely to have net farm income in excess of \$100,000 than high-debt farms (greater than 70% debt).

## DEBT-TO-ASSET RATIO

Three ranges of debt-to-asset ratio were used to group farms.

- 0 - 40 percent
- 41 - 70 percent
- 71 percent or more

### Highlights

- Median debt-to-asset of all farms improved to 48.4% in 2008, from 50.0% in 2007 after ranging from 53.3% to 57.5% between the years 1999 to 2006.
- The median debt-to-asset of farms in the north central region was the best in 2007 and 2008 compared to other regions. However, the Red River Valley had the best solvency from 1999 to 2006.
- Crop farms had the best solvency (lowest debt-to-asset) among farm types during the past ten years, except for livestock farms in 2005.
- Large farms (greater than 2,000 acres) and farms with high sales (greater than \$500,000 sales) always had lower median debt-to-asset than other farm size and farm sales groups, respectively, during the 1999-2008 period.
- There is a strong inverse relationship between level of debt and liquidity, repayment capacity, profitability and financial efficiency measures. As debt-to-asset increases, these measures deteriorate.
- In 2008, farms in the low, medium and high debt-to-asset categories had median current ratios of 3.5, 1.5 and 1.0; term debt coverage ratios of 5.5, 2.3 and 0.8; interest expense as a percent of gross revenue of 2.4, 5.2 and 8.2; and net farm income as percent of gross revenue of 31.4, 23.1 and 8.9, respectively.
- In 2007 and 2008, farms with sales less than \$100,000 were over three times as likely to be in the high debt group compared to farms with sales greater than \$500,000.
- As expected, percent debt-to-asset tended to decrease as age of farmer increased. In 2008, median debt-to-asset was 60.4% for farmers younger than 40 years, 51.1% for farmers 40-49 years and 38.4% for farmers 50 years or older.
- Median net farm income for the low debt-to-asset category was a 10 year high in 2008, \$218,042. It was \$104,110 and \$20,849 for the medium and high debt-to-asset categories, respectively.
- In 2008, three out of four farms with low debt had net farm income greater than \$100,000, compared to less than one out of four high-debt farms.

## FARMER AGE

Three groups were used to classify farms by age of operator:

39 years or less  
40 - 49 years  
50 years or older

### Highlights

- In 2008, 30% of farm operators were under 40 years old and 29% were 40 to 49 years old. The percent of farmers 50 and older has steadily increased from 19% in 1996 to 41% in 2008.
- Prior to 1999, the age of farmers tended to increase slightly from east to west, but from 1999 to 2008, the age distribution of farm operators has been similar across regions.
- Farmers in the middle age group have typically had more total farm assets and liabilities, higher gross sales, larger farms and been more profitable than the younger or older age groups. An exception was 2006, when the median net farm income was highest for farmers older than 50 years.
- In 2007, the highest median net farm income during the 1999-2007 period was achieved for each age group. In 2008, it dropped 28% to \$55,012 for farmers under 40 years old, 7% to \$152,317 for farmers 40-49 years old, and 2% to \$132,454 for farmers 50 years and older.
- Median total assets were lowest, 1999-2008, for farm operators less than 40 years old and were most often the greatest for farmers between 40 and 49 years old. However, median total assets of the older age group of farmers (50 years and older) is close to the asset level of the middle age group.
- As expected, there is a higher percent of crop land owned, and the percent of farm debt tends to decrease as the age of the farm operator increases. In 2008, median debt-to-asset was 60.8% for farmers less than 40 years old, 57.1% for farmers in the 40 to 49 age group and 38.4% for farmers 50 or older.
- In 2007 and 2008, median current ratio improved with farmer age. However, the five-year average, 2003-2007, median current ratio was similar between age groups. It was 1.5 for farmers older than 50 years and 1.4 for the middle and young age groups.
- In each year, 1999-2008, the young age group of farmers employed assets more efficiently than farmers 50 and older. The young group had much fewer total assets and higher debt-to-asset, but achieved better median measures of ROA, ROE, and asset turnover.

Figure 13. Median Total Farm Assets and Liabilities by Farmer Age, 2008, N.D. Farm Mgt Program

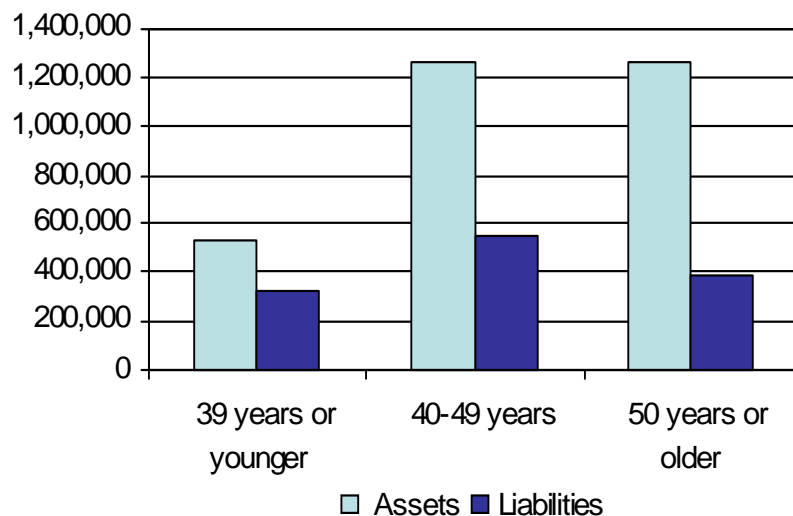


Figure 14. Median Net Farm Income by Farmer Age, 1999-2008, N.D. Farm Mgt Program

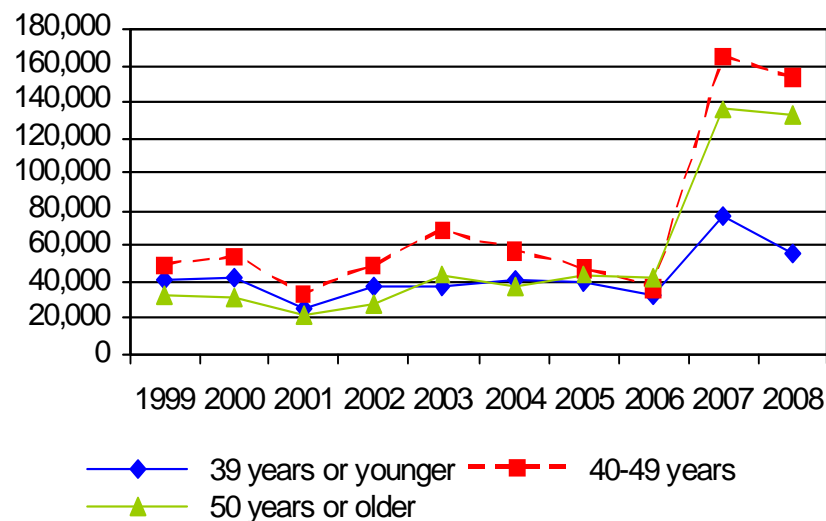


Figure 15. Median Term Debt Coverage Ratio by Farmer Age, 1999-2008, N.D. Farm Mgt Program

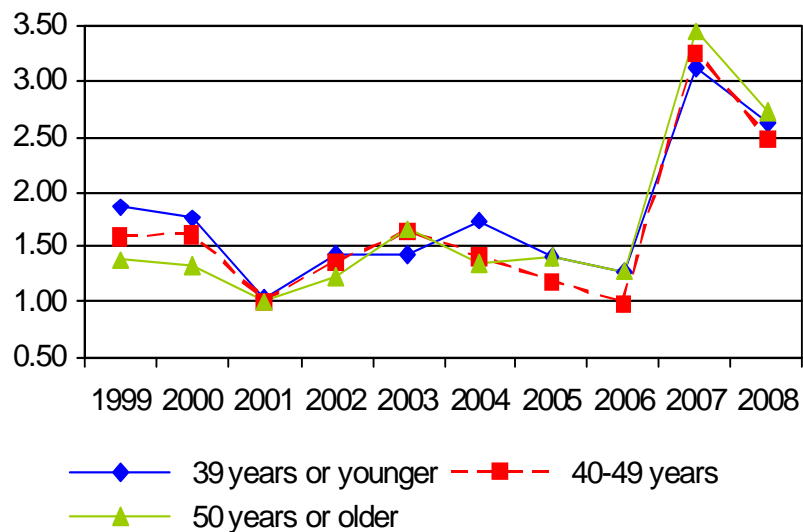
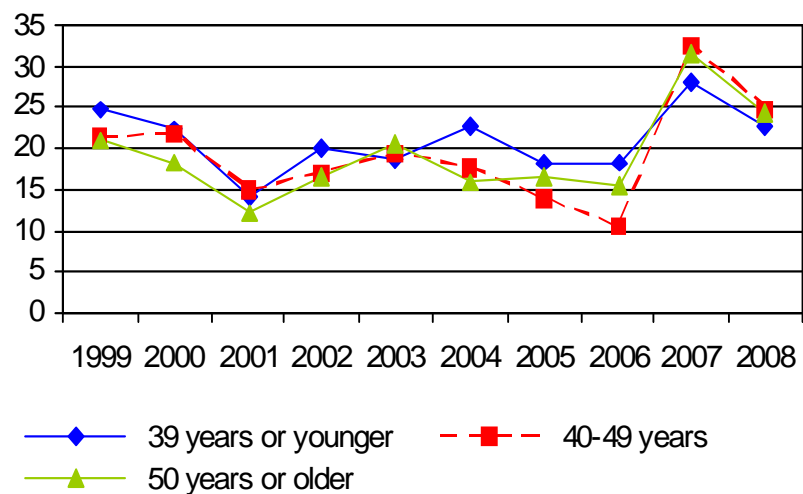


Figure 16. Median Net Farm Income as a Percent of Gross Revenue by Farmer Age, 1999-2008, N.D. Farm Mgt Program





**TABLE 3. CURRENT ASSETS AND CURRENT LIABILITIES, QUARTILE VALUES FOR 2008, MEDIAN VALUES FOR 2007, AND 5-YEAR AVERAGE, 2003-2007, OF MEDIAN VALUES, NORTH DAKOTA FARM BUSINESS MANAGEMENT EDUCATION PROGRAM PARTICIPANTS**

Farm Group	2008			2007 Median	Average of 2003-2007 Medians	2008			2007 Median	Average of 2002-2006 Medians
	Upper Quartile	Lower Quartile	Median			Upper Quartile	Lower Quartile	Median		
	Current Farm Assets (\$)					Current Farm Liabilities (\$)				
All Farms	599,894	150,175	325,622	267,746	195,198	69,096	277,034	156,221	138,121	121,433
Region										
Red River Valley	672,153	276,892	461,952	347,877	282,236	85,619	360,615	201,776	168,155	152,332
North Central	621,608	168,903	360,498	267,186	186,626	73,842	261,841	155,661	133,319	122,673
South Central	575,513	149,033	309,919	258,562	189,746	72,293	285,455	160,754	138,121	111,882
West	394,371	76,281	193,354	216,841	162,516	34,773	226,818	108,398	90,935	92,596
Farm Enterprise										
Crop	646,237	246,009	422,444	330,574	234,272	85,619	315,863	189,198	156,310	142,261
Livestock	220,143	49,982	118,077	146,147	115,749	26,569	141,477	74,548	84,787	68,453
Mixed	337,073	83,199	182,000	192,460	161,930	52,087	258,211	150,486	134,455	115,924
Farm Sales										
\$99,999 or less	70,695	30,037	43,122	45,822	45,441	17,988	59,136	34,242	27,464	31,438
\$100,000-\$249,999	166,562	76,800	120,768	141,061	119,496	33,418	147,600	80,237	85,670	90,061
\$250,00-\$499,999	371,382	192,710	286,074	292,678	246,771	78,254	220,321	142,346	148,507	155,455
\$500,000 or more	907,043	432,074	596,919	579,630	501,127	151,038	430,119	262,240	262,106	277,960
Farm Size										
1,999 acres or less	370,410	80,623	188,765	173,313	123,047	36,177	180,082	92,192	87,256	85,838
2,000 acres or more	827,710	299,508	526,318	397,828	281,901	134,815	398,844	232,710	185,985	170,556
Cropland Tenure										
Full tenant	338,634	90,104	159,902	170,142	123,034	31,517	175,750	85,094	80,464	75,732
1-20 percent owned	739,294	292,697	492,094	378,843	258,016	126,800	375,534	242,155	180,702	169,777
21-40 percent owned	667,685	253,738	442,146	338,298	250,237	108,960	344,445	194,803	175,780	148,838
41 percent or more owned	525,459	136,779	301,950	233,296	174,064	50,657	233,676	135,562	111,106	98,380
Net Farm Income										
\$19,999 or less	174,958	47,882	105,024	64,251	83,383	32,880	159,639	71,304	53,822	82,438
\$20,000-\$49,999	252,884	52,563	150,012	104,780	130,002	34,500	196,217	81,512	59,845	91,807
\$50,000-\$99,999	311,796	154,248	251,970	180,970	212,519	80,431	193,132	134,814	133,048	131,937
\$100,000 or more	839,168	380,833	556,341	421,500	420,864	118,404	376,505	223,857	176,427	179,063
Debt-to-Asset Ratio										
0-40 percent	788,322	263,180	480,015	365,126	279,514	40,131	223,821	122,363	104,123	87,073
41-70 percent	550,227	162,293	304,013	267,746	200,000	92,563	353,842	189,528	168,155	145,315
71 percent or more	313,714	66,752	150,012	122,352	117,773	60,760	282,407	159,659	123,106	129,315
Farmer Age										
39 years or younger	328,667	65,368	159,902	164,449	137,339	32,449	206,434	91,262	86,267	90,672
40-49 years	685,463	253,738	468,105	396,800	268,193	124,410	391,604	226,946	186,479	160,090
50 years or older	636,061	200,571	390,275	314,582	207,312	77,408	253,134	159,619	145,793	114,216

**TABLE 4. LIQUIDITY MEASURES, QUARTILE VALUES FOR 2008, MEDIAN VALUES FOR 2007, AND 5-YEAR AVERAGE, 2003-2007, OF MEDIAN VALUES, NORTH DAKOTA FARM BUSINESS MANAGEMENT EDUCATION PROGRAM PARTICIPANTS.**

Farm Group	2008			2007 Median	Average of 2003-2007 Medians	2008			2007 Median	Average of 2003-2007 Medians
	Upper Quartile	Lower Quartile	Median			Upper Quartile	Lower Quartile	Median		
	Current Ratio					Working Capital(\$)				
All Farms	3.2	1.2	1.8	1.7	1.4	313,549	25,678	128,854	103,063	45,302
Region										
Red River Valley	3.4	1.3	1.9	1.5	1.4	379,278	53,352	189,770	81,341	66,493
North Central	3.3	1.4	1.9	1.8	1.3	355,831	38,778	158,805	118,495	43,765
South Central	3.1	1.1	1.6	1.8	1.4	289,760	20,240	112,922	102,855	47,149
West	2.8	1.1	1.7	1.8	1.4	172,742	9,008	66,822	77,357	33,788
Farm Enterprise										
Crop	3.9	1.4	1.9	1.9	1.4	385,221	60,952	183,960	144,369	56,050
Livestock	2.6	1.0	1.4	1.5	1.5	87,993	-4,390	23,365	38,304	32,206
Mixed	1.8	1.1	1.3	1.3	1.3	118,502	6,691	31,471	48,000	29,943
Farm Sales										
\$99,999 or less	2.0	0.8	1.2	1.4	1.3	22,326	-4,675	9,008	12,165	10,911
\$100,000-\$249,999	2.5	1.0	1.4	1.5	1.3	71,053	-1,149	28,016	44,442	25,944
\$250,000-\$499,999	3.0	1.3	1.7	1.8	1.4	202,459	43,995	109,716	127,864	70,338
\$500,000 or more	3.8	1.4	2.2	1.9	1.6	511,851	148,533	296,493	266,699	166,732
Farm Size										
1,999 acres or less	2.9	1.1	1.7	1.6	1.4	159,494	13,601	65,008	55,989	26,937
2,000 acres or more	3.4	1.3	1.9	1.8	1.4	450,043	84,725	231,809	175,945	80,693
Cropland Tenure										
Full tenant	3.1	1.2	1.7	1.7	1.4	152,274	15,093	57,836	51,760	23,585
1-20 percent owned	3.0	1.3	1.9	1.8	1.3	407,992	87,494	204,514	162,052	62,071
21-40 percent owned	3.6	1.3	1.8	1.8	1.4	380,911	56,227	186,000	139,756	62,793
41 percent or more owned	3.4	1.2	1.7	1.7	1.5	308,400	25,778	103,810	80,642	45,463
Net Farm Income										
\$19,999 or less	1.8	0.8	1.2	1.1	1.0	40,343	-10,525	15,093	3,324	-2,561
\$20,000-\$49,999	1.9	1.0	1.3	1.3	1.3	71,302	-2,820	25,237	18,039	22,497
\$50,000-\$99,999	2.7	1.2	1.7	1.3	1.4	152,896	27,909	76,665	46,328	56,261
\$100,000 or more	4.1	1.5	2.4	2.2	2.1	491,439	140,663	289,827	210,487	194,987
Debt-to-Asset Ratio										
0-40 percent	7.5	2.4	3.5	3.4	2.9	566,607	142,935	345,256	260,174	169,716
41-70 percent	1.9	1.2	1.5	1.6	1.3	203,862	30,371	104,154	97,337	42,982
71 percent or more	1.3	0.8	1.0	1.1	1.0	26,033	-21,276	2,720	12,634	-979
Farmer Age										
39 years or younger	2.8	1.1	1.5	1.6	1.4	140,207	8,092	43,941	52,542	28,901
40-49 years	2.8	1.2	1.7	1.7	1.4	365,200	39,877	167,114	154,763	60,806
50 years or older	3.7	1.4	2.0	1.8	1.5	394,523	65,148	175,439	133,459	60,870

**TABLE 5. TOTAL ASSETS AND TOTAL LIABILITIES, QUARTILE VALUES FOR 2008, MEDIAN VALUES FOR 2007, AND 5-YEAR AVERAGE, 2003-2007, OF MEDIAN VALUES, NORTH DAKOTA FARM BUSINESS MANAGEMENT EDUCATION PROGRAM PARTICIPANTS**

Farm Group	2008			Average of		2008			Average of	
	Upper Quartile	Lower Quartile	Median	2007 Median	2003-2007 Medians	Upper Quartile	Lower Quartile	Median	2007 Median	2003-2007 Medians
	<b>Total Farm Assets(\$)</b>					<b>Total Farm Liabilities(\$)</b>				
All Farms	1,660,651	566,053	995,609	810,426	689,684	214,930	701,025	419,979	371,180	337,402
Region										
Red River Valley	2,178,222	731,901	1,291,156	1,074,880	979,931	222,241	820,125	538,443	464,105	410,688
North Central	1,643,445	604,653	1,067,327	821,509	684,257	214,770	654,296	412,225	376,520	348,014
South Central	1,747,352	571,630	937,187	729,034	631,411	241,084	660,360	391,153	328,729	303,550
West	1,231,219	333,030	785,627	721,027	587,064	146,989	617,150	378,392	336,936	293,008
Farm Enterprise										
Crop	1,873,483	697,478	1,147,886	905,581	774,777	265,160	763,103	472,047	407,129	366,657
Livestock	937,979	287,036	553,430	631,933	550,836	121,331	430,031	230,128	268,800	249,046
Mixed	1,222,441	438,479	712,016	753,276	625,247	211,975	557,795	391,350	382,080	331,554
Farm Sales										
\$99,999 or less	346,903	135,149	221,316	211,973	247,548	71,907	224,987	146,989	127,586	141,995
\$100,000-\$249,999	691,108	303,353	509,443	540,672	496,117	115,616	391,350	272,410	271,732	265,100
\$250,000-\$499,999	1,153,516	610,900	799,072	810,426	802,184	214,930	563,806	382,900	356,255	375,034
\$500,000 or more	2,458,216	1,182,109	1,648,933	1,634,051	1,562,997	411,004	973,569	638,195	669,496	658,240
Farm Size										
1,999 acres or less	1,000,061	318,359	627,035	576,734	491,159	146,989	479,621	283,274	280,019	247,153
2,000 acres or more	2,224,890	985,795	1,460,520	1,194,172	970,535	354,116	880,669	572,028	511,976	446,853
Cropland Tenure										
Full tenant	826,453	215,393	460,508	414,081	352,040	103,765	414,434	183,719	177,576	188,634
1-20 percent owned	1,846,458	804,266	1,157,622	893,366	742,574	354,635	797,593	549,736	475,715	411,807
21-40 percent owned	2,083,023	781,249	1,259,945	1,089,917	880,776	290,995	808,066	548,370	465,635	402,026
41 percent or more owned	1,736,579	608,086	1,106,042	922,010	772,627	229,028	644,413	394,001	343,675	328,642
Net Farm Income										
\$19,999 or less	703,957	285,123	508,010	399,410	436,850	129,851	467,862	266,648	217,655	260,152
\$20,000-\$49,999	803,313	247,264	500,987	474,292	510,168	139,607	479,621	268,910	238,291	278,078
\$50,000-\$99,999	961,363	512,408	727,298	655,711	722,267	205,560	475,898	316,557	363,135	350,066
\$100,000 or more	2,256,240	1,075,191	1,532,277	1,169,532	1,331,323	323,597	834,430	571,035	442,926	448,476
Debt-to-Asset Ratio										
0-40 percent	2,201,890	810,935	1,392,936	1,149,451	980,985	132,208	528,260	290,267	251,953	205,455
41-70 percent	1,508,967	567,170	952,871	796,720	708,322	299,775	808,225	489,977	461,208	397,401
71 percent or more	938,327	308,588	608,569	538,710	497,653	275,430	775,710	489,583	456,979	421,637
Farmer Age										
39 years or younger	939,715	242,855	537,506	539,234	488,659	131,278	572,635	321,148	309,671	288,447
40-49 years	1,997,138	755,222	1,255,789	1,068,841	859,191	338,850	950,625	545,686	475,170	423,924
50 years or older	1,873,602	684,476	1,256,434	1,055,175	791,933	222,454	698,923	396,653	333,665	304,841

**TABLE 6. SOLVENCY MEASURES, QUARTILE VALUES FOR 2008, MEDIAN VALUES FOR 2007, AND 5-YEAR AVERAGE, 2003-2007, OF MEDIAN VALUES, NORTH DAKOTA FARM BUSINESS MANAGEMENT EDUCATION PROGRAM PARTICIPANTS.**

Farm Group	2008			Average of		2008			Average of		2008			Average of	
	Upper Quartile	Lower Quartile	Median	2007 Median	2003-2007 Medians	Upper Quartile	Lower Quartile	Median	2007 Median	2003-2007 Medians	Upper Quartile	Lower Quartile	Median	2007 Median	2003-2007 Medians
	Debt-to-Asset (%)					Equity-to-Asset (%)					Debt-to-Equity				
All Farms	29.9	64.6	48.4	50.0	54.2	70.1	35.4	51.6	50.0	45.8	0.4	1.8	0.9	1.0	1.2
Region															
Red River Valley	27.8	60.5	47.3	51.2	49.5	72.2	39.5	52.7	48.8	50.5	0.4	1.5	0.9	1.0	1.0
North Central	28.7	62.4	44.4	48.9	55.3	71.3	37.6	55.6	51.1	44.7	0.4	1.7	0.8	1.0	1.2
South Central	32.3	65.5	49.7	49.3	52.8	67.7	34.5	50.3	50.7	47.2	0.5	1.9	1.0	1.0	1.1
West	33.7	71.5	55.4	55.0	59.3	66.3	28.5	44.6	45.0	40.7	0.5	2.5	1.2	1.2	1.5
Farm Enterprise															
Crop	28.8	60.6	46.9	47.7	52.0	71.2	39.4	53.1	52.3	48.0	0.4	1.5	0.9	0.9	1.1
Livestock	32.3	76.3	57.7	59.0	57.9	67.7	23.7	42.3	41.0	42.1	0.5	3.2	1.4	1.4	1.4
Mixed	35.5	76.5	53.8	57.0	59.5	64.5	23.5	46.2	43.0	40.5	0.6	3.3	1.2	1.3	1.5
Farm Sales															
\$99,999 or less	49.2	82.8	63.1	63.8	64.1	50.8	17.2	36.9	36.2	35.9	1.0	4.8	1.7	1.8	1.8
\$100,000-\$249,999	37.6	77.8	55.8	57.8	59.7	62.4	22.2	44.2	42.2	40.3	0.6	3.5	1.3	1.4	1.5
\$250,000-\$499,999	28.7	63.4	48.3	48.5	51.5	71.3	36.6	51.7	51.5	48.5	0.4	1.7	0.9	0.9	1.1
\$500,000 or more	26.3	56.8	40.9	45.5	46.1	73.7	43.2	59.1	54.5	53.9	0.4	1.3	0.7	0.8	0.9
Farm Size															
1,999 acres or less	34.0	70.5	54.2	56.6	58.7	66.0	29.5	45.8	43.4	41.3	0.5	2.4	1.2	1.3	1.4
2,000 acres or more	27.7	58.0	42.8	45.4	50.1	72.3	42.0	57.2	54.6	49.9	0.4	1.4	0.7	0.8	1.0
Cropland Tenure															
Full tenant	29.9	74.3	52.4	58.3	60.8	70.1	25.7	47.6	41.7	39.2	0.4	2.9	1.1	1.4	1.6
1-20 percent owned	32.0	61.8	46.6	52.9	57.0	68.0	38.2	53.4	47.1	43.0	0.5	1.6	0.9	1.1	1.3
21-40 percent owned	28.0	60.6	47.7	49.7	53.7	72.0	39.4	52.3	50.3	46.3	0.4	1.5	0.9	1.0	1.2
41 percent or more owned	26.8	65.2	47.5	45.5	48.5	73.2	34.8	52.5	54.5	51.5	0.4	1.9	0.9	0.8	0.9
Net Farm Income															
\$19,999 or less	43.9	86.2	67.5	73.9	71.4	56.1	13.8	32.5	26.1	28.6	0.8	6.2	2.1	2.8	2.5
\$20,000-\$49,999	47.9	73.8	61.7	56.9	58.9	52.1	26.2	38.3	43.1	41.1	0.9	2.8	1.6	1.3	1.4
\$50,000-\$99,999	29.3	62.9	50.0	61.6	52.4	70.7	37.1	50.0	38.4	47.6	0.4	1.7	1.0	1.6	1.1
\$100,000 or more	25.1	54.4	39.0	41.7	38.2	74.9	45.6	61.0	58.3	61.8	0.3	1.2	0.6	0.7	0.6
Debt-to-Asset Ratio															
0-40 percent	15.1	32.9	25.2	25.8	25.5	84.9	67.1	74.8	74.2	74.5	0.2	0.5	0.3	0.3	0.3
41-70 percent	48.2	61.2	54.4	55.9	56.0	51.8	38.8	45.6	44.1	44.0	0.9	1.6	1.2	1.3	1.3
71 percent or more	75.4	90.5	82.4	82.0	82.7	24.6	9.5	17.6	18.0	17.3	3.1	9.5	4.7	4.6	4.8
Farmer Age															
39 years or younger	41.4	74.8	60.8	62.7	65.5	58.6	25.2	39.2	37.3	34.5	0.7	3.0	1.6	1.7	1.9
40-49 years	32.7	66.0	51.1	52.8	54.0	67.3	34.0	48.9	47.2	46.0	0.5	1.9	1.0	1.1	1.2
50 years or older	22.4	54.1	38.4	40.2	44.8	77.6	45.9	61.6	59.8	55.2	0.3	1.2	0.6	0.7	0.8

**TABLE 7. RATE OF RETURN ON ASSETS AND RATE OF RETURN ON EQUITY PROFITABILITY MEASURES, QUARTILE VALUES FOR 2008, MEDIAN VALUES FOR 2007, AND 5-YEAR AVERAGE, 2003-2007, OF MEDIAN VALUES NORTH DAKOTA FARM BUSINESS MANAGEMENT EDUCATION PROGRAM PARTICIPANTS.**

Farm Group	2008			2007 Median	Average of 2003-2007 Medians	2008			2007 Median	Average of 2003-2007 Medians
	Upper Quartile	Lower Quartile	Median			Upper Quartile	Lower Quartile	Median		
	Return on Farm Assets(%)					Return on Farm Equity(%)				
All Farms	18.5	3.7	10.6	15.7	7.7	30.8	2.0	15.8	25.3	9.4
Region										
Red River Valley	19.7	9.4	14.9	12.0	8.3	35.1	11.8	20.3	17.3	10.2
North Central	22.0	5.9	14.5	18.6	7.6	35.3	6.0	22.3	34.2	1.2
South Central	17.6	3.6	10.0	18.3	8.3	30.1	2.0	14.2	26.9	1.3
West	7.4	-3.0	1.2	11.0	5.6	9.9	-17.4	-0.2	15.1	5.3
Farm Enterprise										
Crop	21.9	8.3	14.7	20.0	9.3	35.2	10.3	21.7	37.0	13.0
Livestock	5.1	-5.2	1.0	4.1	4.2	3.8	-23.0	-1.8	3.5	2.9
Mixed	7.5	-2.0	3.6	8.4	5.4	9.1	-7.1	0.0	11.0	5.6
Farm Sales										
\$99,999 or less	7.5	-6.5	1.8	3.0	2.7	10.9	-27.5	0.0	0.3	0.8
\$100,000-\$249,999	9.9	-1.0	3.7	10.7	5.6	16.2	-10.3	0.3	15.4	5.7
\$250,000-\$499,999	14.3	3.8	8.3	18.1	8.7	23.9	2.6	11.2	29.4	11.5
\$500,000 or more	22.5	10.2	16.1	19.4	9.8	35.6	13.3	23.7	31.3	13.9
Farm Size										
1,999 acres or less	16.6	2.8	9.7	13.9	6.9	31.2	3.9	17.5	22.5	7.9
2,000 acres or more	19.7	4.9	12.2	17.7	8.4	28.9	0.0	13.9	27.8	10.9
Cropland Tenure										
Full tenant	26.7	0.3	10.3	19.3	8.8	54.4	-5.1	16.2	38.7	12.0
1-20 percent owned	23.2	8.1	15.7	20.2	9.4	35.0	9.4	24.9	39.4	14.2
21-40 percent owned	18.6	6.7	13.4	17.8	8.2	31.4	7.1	18.6	27.3	10.1
41 percent or more owned	12.7	3.2	7.0	10.5	6.1	17.9	0.2	8.0	14.9	6.6
Net Farm Income										
\$19,999 or less	1.1	-7.6	-2.8	-0.5	-1.0	-1.9	-35.9	-12.5	-13.0	-10.6
\$20,000-\$49,999	9.7	3.6	4.8	6.6	5.2	11.8	0.0	2.8	6.1	4.1
\$50,000-\$99,999	12.4	5.9	8.5	10.9	8.7	23.6	5.0	11.0	20.4	12.4
\$100,000 or more	23.7	12.1	16.7	22.6	13.6	38.5	17.1	26.6	39.4	20.7
Debt-to-Asset Ratio										
0-40 percent	21.9	6.3	14.6	16.8	8.9	27.8	7.0	16.7	20.9	10.0
41-70 percent	19.0	5.0	11.9	18.4	8.4	38.0	3.2	18.8	33.9	11.9
71 percent or more	10.6	-3.7	4.0	9.4	4.4	23.8	-37.3	0.0	23.3	2.8
Farmer Age										
39 years or younger	24.9	2.0	10.9	17.2	9.0	48.7	-0.4	20.7	40.7	15.5
40-49 years	20.2	5.8	11.9	17.2	8.0	33.0	5.1	18.3	31.5	10.6
50 years or older	16.4	3.6	9.4	12.9	6.4	23.4	2.1	12.8	16.9	6.6

**TABLE 8. OPERATING PROFIT MARGIN AND NET FARM INCOME PROFITABILITY MEASURES, QUARTILE VALUES FOR 2008, MEDIAN VALUES FOR 2007, AND 5-YEAR AVERAGE, 2003-2007, OF MEDIAN VALUES, NORTH DAKOTA FARM BUSINESS MANAGEMENT PROGRAM PARTICIPANTS.**

Farm Group	2008			Average of		2008			Average of	
	Upper Quartile	Lower Quartile	Median	2007 Median	2003-2007 Medians	Upper Quartile	Lower Quartile	Median	2007 Median	2003-2007 Medians
	Operating Profit Margin(%)					Net Farm Income(\$)				
All Farms	31.0	10.3	20.8	29.3	17.4	256,483	30,743	114,520	127,791	60,030
Region										
Red River Valley	30.5	17.6	23.8	21.4	17.0	302,151	96,816	201,875	115,712	82,803
North Central	34.1	14.0	24.7	31.0	16.7	304,429	54,923	149,156	157,109	62,804
South Central	31.0	10.1	20.5	31.5	18.0	249,456	30,603	92,127	127,790	61,154
West	17.8	-12.0	5.0	27.3	14.3	86,345	-11,039	18,956	77,136	39,302
Farm Enterprise										
Crop	32.3	16.0	23.9	32.2	17.1	311,494	68,331	170,181	171,838	77,833
Livestock	17.2	-25.9	5.0	18.8	16.0	31,177	-16,101	14,343	25,531	26,698
Mixed	21.5	-7.7	10.9	24.1	16.3	90,296	788	33,562	65,303	41,437
Farm Sales										
\$99,999 or less	21.8	-28.8	9.4	7.3	11.1	22,406	-8,947	9,106	11,850	11,269
\$100,000-\$249,999	20.4	-2.5	10.8	24.5	14.4	55,378	6,778	28,510	56,641	34,111
\$250,000-\$499,999	26.8	10.1	18.6	31.9	18.4	130,400	44,110	87,755	141,913	78,619
\$500,000 or more	33.0	18.5	26.5	31.7	19.6	404,054	160,447	257,152	296,677	169,032
Farm Size										
1,999 acres or less	29.4	7.5	19.2	26.4	15.7	144,401	16,245	62,035	85,849	41,213
2,000 acres or more	32.2	12.6	22.0	31.1	18.5	374,193	62,878	205,321	191,454	87,433
Cropland Tenure										
Full tenant	25.2	1.1	16.0	23.8	13.1	132,454	9,676	57,565	78,051	39,867
1-20 percent owned	30.6	13.1	21.7	31.3	16.7	369,290	80,869	213,096	187,078	84,488
21-40 percent owned	32.7	12.7	22.5	30.9	17.9	311,529	73,600	170,215	147,870	72,125
41 percent or more owned	31.8	11.5	20.9	30.2	20.0	178,027	20,183	75,319	94,382	50,420
Net Farm Income										
\$19,999 or less	3.5	-26.7	-9.5	-1.9	-3.0	9,638	-25,150	-4,335	16	385
\$20,000-\$49,999	19.3	8.2	12.0	20.4	14.1	41,632	28,168	33,562	35,241	34,172
\$50,000-\$99,999	21.5	12.0	16.9	22.3	19.0	87,887	60,538	70,576	74,875	70,662
\$100,000 or more	34.7	22.0	28.3	35.6	27.5	377,950	161,951	250,130	217,923	164,529
Debt-to-Asset Ratio										
0-40 percent	35.1	16.3	27.1	35.6	21.8	367,232	73,301	218,042	202,336	102,518
41-70 percent	28.6	12.4	20.4	29.5	18.1	227,979	38,642	104,110	130,247	63,253
71 percent or more	17.5	-12.0	10.3	18.2	9.3	66,183	-11,423	20,849	40,625	22,433
Farmer Age										
39 years or younger	30.2	5.6	18.7	27.6	17.9	150,088	12,044	55,012	76,204	45,796
40-49 years	30.6	12.7	21.4	30.4	16.5	322,760	45,325	152,317	164,243	74,584
50 years or older	31.5	10.8	21.0	29.8	17.4	259,023	45,288	132,454	134,921	61,133

**TABLE 9. REPAYMENT CAPACITY MEASURES, QUARTILE VALUES FOR 2008, MEDIAN VALUES FOR 2007, AND 5-YEAR AVERAGE, 2003-2007, OF MEDIAN VALUES, NORTH DAKOTA FARM BUSINESS MANAGEMENT EDUCATION PROGRAM PARTICIPANTS.**

Farm Group	2008					2008				
	Upper Quartile	Lower Quartile	Median	2007 Median	Average of 2003-2007 Medians	Upper Quartile	Lower Quartile	Median	2007 Median	Average of 2003-2007 Medians
	<b>Term Debt Coverage Ratio</b>					<b>Term Debt and Capital Repayment Margin(\$)</b>				
All Farms	5.64	1.09	2.67	3.28	1.78	206,837	4,158	67,276	86,825	28,415
Region										
Red River Valley	6.48	2.27	3.78	3.26	2.08	258,011	67,362	154,017	75,326	44,277
North Central	6.04	1.18	3.23	3.67	1.73	248,667	6,693	91,279	115,234	28,862
South Central	6.09	1.14	2.68	3.64	1.99	189,105	5,194	58,139	85,344	32,128
West	1.95	0.27	1.04	2.18	1.41	43,377	-45,082	1,293	38,778	13,874
Farm Enterprise										
Crop	6.64	1.89	3.69	4.32	2.08	260,442	39,238	117,349	124,560	39,694
Livestock	1.84	-0.17	0.84	1.28	1.31	11,177	-35,402	-3,875	11,721	10,284
Mixed	1.74	0.54	1.01	2.12	1.41	38,017	-19,615	34	36,455	12,984
Farm Sales										
\$99,999 or less	2.91	0.33	1.03	1.35	1.27	16,812	-12,598	638	4,865	4,218
\$100,000-\$249,999	2.30	0.19	1.12	1.94	1.29	32,377	-21,618	2,831	28,383	9,295
\$250,000-\$499,999	4.55	1.11	2.24	4.03	2.00	92,736	4,372	48,486	105,960	40,235
\$500,000 or more	7.26	2.21	4.14	4.10	2.33	339,059	102,058	205,531	240,693	101,343
Farm Size										
1,999 acres or less	5.47	1.03	2.34	2.74	1.60	111,327	638	40,886	52,028	16,643
2,000 acres or more	5.72	1.20	3.05	3.73	1.94	300,669	9,688	128,677	149,870	49,036
Cropland Tenure										
Full tenant	8.19	0.80	2.97	3.65	1.97	102,123	-4,768	39,394	63,856	21,390
1-20 percent owned	6.13	1.77	3.72	4.17	1.91	296,572	46,124	138,704	154,991	42,457
21-40 percent owned	4.92	1.26	3.06	3.52	1.86	266,240	17,068	105,103	117,374	38,334
41 percent or more owned	4.26	0.96	1.68	2.27	1.53	150,163	-1,613	33,485	52,735	21,248
Net Farm Income										
\$19,999 or less	1.03	-0.51	0.28	0.95	0.61	660	-57,998	-22,671	-2,419	-13,442
\$20,000-\$49,999	2.05	0.80	1.18	1.58	1.24	20,411	-11,501	5,194	14,501	7,379
\$50,000-\$99,999	3.41	1.27	2.23	1.96	1.73	54,547	10,696	38,795	42,486	32,971
\$100,000 or more	7.95	2.90	4.63	4.87	3.25	325,559	109,668	192,954	181,121	115,372
Debt-to-Asset Ratio										
0-40 percent	11.77	2.39	5.47	5.67	3.30	338,637	53,839	165,847	162,320	73,078
41-70 percent	4.10	1.12	2.25	3.06	1.67	162,724	5,571	58,038	89,858	28,017
71 percent or more	1.84	-0.07	0.82	1.53	0.99	37,395	-41,776	-4,768	19,518	-1,653
Farmer Age										
39 years or younger	6.17	0.88	2.62	3.11	1.79	114,670	-3,460	41,601	50,545	20,863
40-49 years	5.16	1.00	2.46	3.26	1.69	237,254	229	109,335	117,486	34,786
50 years or older	5.72	1.19	2.71	3.44	1.83	236,406	6,792	87,001	91,547	30,218

**TABLE 10. ASSET TURNOVER AND OPERATING EXPENSE AND DEPRECIATION EXPENSE EFFICIENCY MEASURES (AS A PERCENTAGE OF GROSS FARM INCOME), QUARTILE VALUES FOR 2008, MEDIAN VALUES FOR 2007, AND 5-YEAR AVERAGE, 2003-2007, OF MEDIAN VALUES, FARM BUSINESS MANAGEMENT EDUCATION PROGRAM PARTICIPANTS.**

Farm Group	2008			Average of		2008			Average of		2008			Average of	
	Upper Quartile	Lower Quartile	Median	2007 Median	2003-2007 Medians	Upper Quartile	Lower Quartile	Median	2007 Median	2003-2007 Medians	Upper Quartile	Lower Quartile	Median	2007 Median	2003-2007 Medians
	<b>Asset Turnover</b>					<b>Operating Expense(%)</b>					<b>Depreciation Expense (%)</b>				
All Farms	.71	.34	.52	.56	0.43	57.3	76.5	66.9	58.2	67.6	2.6	5.9	4.1	4.3	5.6
Region															
Red River Valley	.81	.46	.60	.55	0.49	58.9	69.9	65.1	64.9	69.4	3.6	6.3	4.9	4.9	5.2
North Central	.76	.40	.55	.60	0.44	54.2	73.4	63.7	56.1	67.9	1.9	4.6	3.1	3.6	5.1
South Central	.71	.30	.52	.58	0.43	56.5	76.3	66.5	55.4	66.0	3.0	6.1	4.4	4.3	6.2
West	.51	.23	.33	.42	0.34	66.1	91.6	77.4	59.4	67.4	3.5	7.4	5.2	6.3	7.2
Farm Enterprise															
Crop	.82	.45	.60	.65	0.51	56.4	72.2	64.4	55.4	68.1	2.6	5.4	3.8	4.0	5.3
Livestock	.34	.18	.22	.26	0.26	67.0	95.3	76.5	64.3	64.6	3.0	8.3	5.1	8.6	8.1
Mixed	.46	.23	.31	.35	0.33	61.9	82.6	74.6	60.6	68.1	3.1	8.6	5.4	4.4	6.0
Farm Sales															
\$99,999 or less	.39	.17	.25	.26	0.25	52.6	94.2	69.8	59.1	61.3	2.5	10.5	4.8	8.7	7.6
\$100,000-\$249,999	.65	.21	.36	.47	0.38	64.6	80.7	73.0	59.4	68.2	2.5	6.6	4.1	4.7	5.6
\$250,000-\$499,999	.62	.35	.45	.60	0.47	61.2	77.8	68.6	56.9	67.7	2.2	5.7	3.7	4.0	5.5
\$500,000 or more	.80	.47	.61	.65	0.51	56.1	71.1	63.2	58.0	68.9	2.9	5.5	4.1	4.3	5.5
Farm Size															
1,999 acres or less	.33	.74	.51	.53	0.42	57.5	77.4	67.4	60.0	67.7	2.4	5.8	4.0	4.2	5.5
2,000 acres or more	.35	.70	.53	.58	0.44	56.6	74.9	66.1	56.3	67.4	2.8	6.0	4.3	4.6	5.7
Cropland Tenure															
Full tenant	1.20	.44	.71	.83	0.63	60.8	81.5	70.7	60.8	69.7	2.1	5.8	3.6	4.3	5.2
1-20 percent owned	.86	.53	.67	.71	0.58	59.6	74.9	66.9	56.5	70.0	2.6	5.1	3.8	3.8	5.0
21-40 percent owned	.65	.43	.53	.58	0.44	55.8	74.6	64.9	58.0	67.9	2.9	5.8	4.3	4.5	5.6
41 percent or more owned	.45	.24	.34	.34	0.29	55.0	74.7	65.5	57.5	63.4	2.1	6.8	4.6	5.0	6.3
Net Farm Income															
\$19,999 or less	.39	.18	.24	.24	0.31	76.4	98.9	88.2	76.8	87.7	2.9	9.2	5.4	11.4	8.3
\$20,000-\$49,999	.65	.29	.44	.32	0.38	60.3	76.6	71.0	63.0	68.9	2.9	5.8	4.3	4.7	5.3
\$50,000-\$99,999	.74	.37	.51	.50	0.45	65.3	76.3	70.4	65.7	66.9	2.0	5.4	3.0	4.9	5.2
\$100,000 or more	.81	.46	.61	.64	0.50	54.2	67.4	61.0	53.5	60.5	2.8	5.4	4.1	3.8	5.2
Debt-to-Asset Ratio															
0-40 percent	.65	.34	.49	.49	0.39	53.6	69.6	61.3	52.8	62.4	2.9	6.7	4.6	4.6	6.2
41-70 percent	.81	.37	.54	.63	0.45	59.5	75.0	67.5	59.3	67.4	2.6	5.5	4.1	3.8	5.1
71 percent or more	.73	.28	.51	.52	0.47	67.5	89.9	77.5	67.9	74.7	2.0	5.4	3.6	5.4	5.5
Farmer Age															
39 years or younger	.95	.39	.63	.64	0.51	57.2	78.5	67.8	58.2	66.1	1.9	5.3	3.4	4.1	4.9
40-49 years	.75	.40	.54	.60	0.45	58.5	75.7	66.6	57.9	69.3	3.0	5.9	4.4	4.0	5.6
50 years or older	.61	.30	.46	.47	0.36	56.4	74.9	66.4	58.7	66.9	2.9	6.3	4.5	4.9	6.2



**TABLE 11. INTEREST EXPENSE AND FARM INCOME EFFICIENCY MEASURES (AS A PERCENTAGE OF GROSS FARM INCOME), QUARTILE VALUES FOR 2008, MEDIAN VALUES FOR 2007, AND 5-YEAR AVERAGE, 2003-2007, OF MEDIAN VALUES, NORTH DAKOTA FARM BUSINESS MANAGEMENT EDUCATION PROGRAM PARTICIPANTS.**

Farm Group	2008			Average of		2008			Average of	
	Upper Quartile	Lower Quartile	Median	2007 Median	2003-2007 Medians	Upper Quartile	Lower Quartile	Median	2007 Median	2003-2007 Medians
	Interest Expense(%)					Net Farm Income (%)				
All Farms	2.5	7.5	4.4	5.2	5.9	33.7	11.8	24.2	30.6	19.8
Region										
Red River Valley	2.3	5.4	3.4	4.7	4.5	32.4	18.7	27.7	25.5	19.9
North Central	2.4	7.1	4.2	5.0	6.1	38.8	17.7	26.6	33.7	20.5
South Central	2.5	7.1	4.3	5.2	5.5	33.0	11.6	24.1	33.5	20.4
West	4.0	12.7	7.8	7.3	7.8	20.2	-9.2	10.2	26.6	16.0
Farm Enterprise										
Crop	2.3	6.0	3.6	4.5	5.0	35.7	18.6	26.9	35.0	20.9
Livestock	4.5	13.5	8.0	9.8	8.9	20.7	-12.5	7.7	15.9	16.9
Mixed	4.5	11.1	7.0	7.5	7.8	23.4	2.9	11.5	26.1	18.2
Farm Sales										
\$99,999 or less	8.1	15.9	11.0	11.8	10.4	31.4	-17.4	13.8	17.1	18.9
\$100,000-\$249,999	3.4	11.2	6.8	6.9	7.3	25.6	4.4	14.6	26.8	18.1
\$250,000-\$499,999	2.8	7.0	4.9	4.7	5.4	29.4	11.7	21.9	32.7	20.4
\$500,000 or more	2.3	4.9	3.2	4.5	4.3	35.9	19.6	28.8	34.0	20.8
Farm Size										
1,999 acres or less	2.7	8.2	4.8	5.3	6.0	32.3	10.0	23.3	28.4	19.5
2,000 acres or more	2.4	6.9	3.9	5.0	5.8	34.4	13.4	25.3	32.8	20.3
Cropland Tenure										
Full tenant	2.1	6.7	3.4	3.7	4.3	31.2	9.2	21.7	25.8	18.2
1-20 percent owned	2.5	6.0	3.5	4.7	5.1	33.6	15.8	25.8	33.3	19.3
21-40 percent owned	2.8	6.4	4.4	5.5	6.3	34.7	16.7	25.4	33.8	20.7
41 percent or more owned	3.0	10.2	6.6	6.6	8.0	32.4	10.1	20.8	29.8	21.4
Net Farm Income										
\$19,999 or less	6.7	15.0	9.9	13.3	9.8	7.6	-16.1	-1.8	0.0	0.4
\$20,000-\$49,999	4.1	11.0	7.5	7.2	6.7	24.2	10.2	16.9	21.2	17.2
\$50,000-\$99,999	2.5	6.9	4.5	6.7	5.6	26.1	16.9	20.7	22.7	21.6
\$100,000 or more	2.1	4.8	3.2	4.1	3.9	38.1	24.8	31.2	38.3	30.0
Debt-to-Asset Ratio										
0-40 percent	1.4	3.7	2.4	3.0	3.2	39.7	21.9	31.4	39.8	27.4
41-70 percent	3.6	8.2	5.2	5.5	6.5	30.6	13.9	23.1	29.6	19.7
71 percent or more	5.6	13.5	8.2	9.1	8.9	18.7	-11.1	8.9	15.3	10.0
Farmer Age										
39 years or younger	2.7	8.4	4.8	5.4	5.9	35.0	9.8	22.9	28.2	21.3
40-49 years	2.7	7.6	4.2	5.1	5.9	32.5	12.8	24.7	32.5	18.8
50 years or older	2.3	7.0	4.3	5.0	5.9	34.2	12.9	24.6	31.5	20.1

## APPENDIX

### DEFINITION OF FINANCIAL MEASURES

Sixteen measures of financial performance were calculated for each farm in this study. The recommendations of the farm financial standards council for calculating the ratios were followed as closely as possible, from the Finpack data.

The farm financial standards council stated that a more meaningful comparison between farms is achieved with market valuation of assets, but due to fluctuations in market values the cost method (acquisition cost less accumulated depreciation) is superior for comparisons over time for an individual farm operation. In fact, a dual column balance sheet is recommended: one column to value assets by the cost approach and a second column for market valuation of assets.

The valuation method used for current assets of farms in this study depended on what was most relevant and reliable. For example, current market value was used for grain and market livestock inventories, but prepaid expenses and supplies were listed at purchase cost.

Non-current asset valuation was:

- Machinery was valued at cost minus accumulated depreciation. Annual depreciation was 10 percent of un-depreciated value.
- Purchased breeding livestock was valued at cost. Raised replacement animals were valued at a conservative market value when they enter the breeding herd. This value remains constant until the animal leaves the herd.
- Generally, land was valued at cost. However, when a farmer enrolls in the farm business program there may be a one-time revaluing of land to a conservative market value.

Assets and liabilities not associated with the farm business are excluded from the calculation of farm financial performance measures. Accrued liabilities were included on the balance sheets but deferred tax liabilities were not.

The calculations of all financial measures, unless otherwise noted, are accrual adjusted. Examples are:

- Gross farm revenue is gross cash revenue plus the changes in crop and market livestock inventories

and accounts receivable.

- Interest expense is cash interest plus the change in accrued interest.

### LIQUIDITY

#### Current Ratio

Computation: Current assets divided by current liabilities.

Interpretation: This ratio measures the extent current assets will cover liabilities that are due during the next 12 months. The higher the ratio the more cushion the business has to meet short-run obligations without disrupting normal business operations. The current ratio's limitation as a measure of liquidity is that it does not match the timing of financial obligations with the liquidation of current assets, nor does it consider any new debt incurred or assets that may be generated during the 12 months after the balance sheet date.

#### Working Capital

Computation: Current assets minus current liabilities.

Interpretation: This measure shows the dollar amount that current assets can or cannot cover current liabilities. The amount of working capital necessary to provide an adequate cushion for meeting debt obligations must be related to the size of the business. Working capital as a measure of liquidity has similar limitations as the current ratio.

### SOLVENCY

#### Debt-to-Asset

Computation: Total liabilities divided by total assets.

Interpretation: This ratio shows the proportion of assets owed to creditors. The lower the debt-to-asset ratio the higher the solvency of the

business. Solvency is a measure of risk exposure. As solvency decreases, the owner has less equity relative to debt, the ability to procure additional financing may decrease, and the business's ability to survive adverse outcomes is diminished. However, solvency should be viewed in connection with profitability. A low solvency position may be desirable if debt capital provides returns in excess of its cost.

### **Equity-to-Asset**

Computation: Owner equity divided by total assets.

Interpretation: This ratio shows the portion of total assets represented by owner equity. It is another way of expressing solvency.

### **Debt-to-Equity**

Computation: Total liabilities divided by owner equity.

Interpretation: This ratio shows the extent to which debt capital is combined with equity capital. It is another way of expressing solvency.

## **PROFITABILITY**

### **Rate of Return on Assets (ROA)**

Computation: Net farm income plus interest expense minus a charge for unpaid operator labor and management, divided by average total assets.

Interpretation: This ratio measures the pre-tax rate of return on farm assets and is used to evaluate whether assets are employed profitably in the business. Two important factors affecting this measure are valuation of assets and the charge for unpaid operator labor and management. Five percent of gross revenue plus a \$18,000 charge per full time operator was used.

### **Rate of Return on Equity (ROE)**

Computation: Net farm income minus a charge for unpaid operator labor and management, divided by average owner equity.

Interpretation: This ratio measures the pre-tax rate of return on equity capital employed in the business. Two important factors affecting this measure are valuation of assets and the charge for unpaid operator labor and management. Five percent of gross revenue

plus a \$18,000 charge per full time operator was used. This ratio should be evaluated carefully and used in conjunction with other ratios when analyzing a farm business. If ROE is greater than ROA, debt capital is being employed profitably—it is earning more than it costs in interest. A high ratio may indicate an undercapitalized or highly leveraged business, and a low ratio may indicate a more conservative, high equity business.

### **Operating Profit Margin**

Computation: Net farm income plus interest expense minus a charge for unpaid operator labor and management, divided by the value of farm production. Value of farm production is gross farm revenue less purchase of market livestock and feed.

Interpretation: This ratio measures net farm income per dollar of farm production. It is a pre-tax measure of profit margin from the employment of assets. An important factor is the charge for unpaid operator labor and management. There is a relationship between operating profit margin, asset turnover rate, and ROA. Operating profit margin multiplied by asset turnover rate equals ROA.

### **Net Farm Income**

Computation: Net farm income is total revenue earned minus the costs incurred to generate those revenues. It is cash revenue less cash expense and depreciation plus capital adjustments (gain or loss from sale of capital assets). Accrual adjustments for changes in inventories are included to properly match revenues and expenses to the time period for which net farm income is being measured.

Interpretation: Net farm income is the return to the operator for unpaid labor and management and equity capital used in the farm business. Net farm income is an absolute amount and it is difficult to assign a standard to all farms because of differences in the amount of unpaid operator labor and equity used.

## REPAYMENT CAPACITY

### Term Debt Coverage Ratio

Calculation: Net farm income plus depreciation and other capital adjustments plus non-farm income plus scheduled interest on term debt minus family living expense and income taxes, divided by scheduled term debt principal and interest payments.

Interpretation: This ratio measures the capacity of the borrower to cover all term debt payments. The more the ratio exceeds 1, the greater the margin to cover term debt payments. The business may have sufficient earnings but the timing of cashflows may not be adequate to make the payments on a timely basis. Also, the ratio does not contain any provision for replacement of capital assets.

### Capital Replacement and Term Debt Repayment Margin

Calculation: Net farm income plus depreciation and other capital adjustments plus non-farm income minus family living expense, income taxes, and scheduled term debt principal payments.

Interpretation: This is a measure of the business's ability to make payments on term debt. A positive margin indicates the amount available, after making term debt payments, for acquiring capital assets or servicing additional debt. The capital replacement and term debt repayment margin is a dollar amount, so it is impossible to establish a standard for all farm businesses.

## FINANCIAL EFFICIENCY

### Asset Turnover

Calculation: Value of farm production divided by average total assets. Value of farm production is gross farm revenue less purchase of market livestock and feed.

Interpretation: This is a measure of how efficiently assets are used in the business. The higher the number, the more production is created per dollar of assets. Asset turnover can vary significantly by type of farm and by asset base. For example, dairy and hog farms will typically have higher asset turnovers than cow-calf or cash grain operations. Asset turnover will probably be higher if capital assets, such as

machinery and land, are rented instead of owned.

### Operating Expense Ratio

Calculation: Total expense less interest and depreciation and capital adjustment divided by gross farm revenue.

Interpretation: This ratio measures how efficiently operating expenses are managed to generate gross farm revenue. The operating expense ratio will typically vary by farm type.

### Depreciation Expense Ratio

Calculation: Depreciation and capital adjustments divided by gross farm revenue.

Interpretation: This ratio expresses depreciation and capital adjustment relative to gross farm revenue. It will vary by farm type and from year to year. Caution must be used when evaluating this ratio. It does not comply with the farm financial standards because the Finpack program, used to generate the farm financial summaries, calculates depreciation and capital adjustment as one number (ending inventory plus capital sales less the sum of beginning inventory and capital purchases). Therefore depreciation cannot be isolated.

### Interest Expense Ratio

Calculation: Interest expense divided by gross farm revenue.

Interpretation: This ratio shows the portion of gross farm revenue necessary to cover interest expense. It is often used as a measure of financial risk.

### Net Farm Income Ratio

Calculation: Net farm income divided by gross farm revenue.

Interpretation: This is a measure of how efficient the farm business is at generating net income from gross revenue. It is the portion of gross farm revenue left after operating expense, depreciation and capital adjustment, and interest expense have been removed.

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