

**Financial Characteristics of
North Dakota Farms
2005-2006**

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Abstract

The performance of over 500 North Dakota farms, 2005-2006, 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, 2001-2005, and farm financial trends for the 1997-2006 period are also presented. In 2006, median and average acreage per farm was 1,966 and 2,386, respectively. Median and average cash farm revenue was \$281,751 and \$361,418, respectively.

Financial performance is volatile. Year-to-year changes in median net farm income within regions and farm types averaged 50 percent from 1997 to 2006. Median net farm income in 2006 was the lowest in five years, \$35,980, and ranged from \$83,970 in the Red River Valley to only \$689 in the west region which was the lowest for any region over the 1997-2006 period. In 1999, 2000, 2003 and 2004 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 improved from 1997-2004, but increased in 2005 and 2006 because of higher debt and interest rates.

The Red River Valley and crop farms had stronger profitability, solvency and repayment capacity from 1997 to 2006 than other regions and farm types, respectively, except in 2005 when the south central region and livestock farms had better performance. Farms with sales less than \$100,000 were over twice as likely to have debt-to-asset higher than 70 percent than were farms with sales greater than \$500,000. Farms that own some crop land, but less than 40 percent are 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.

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, 1997-2006. 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 1997-2006, 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 2006, there were 30,300 farms in North Dakota with agricultural production of at least \$1,000. Only 9,800, or 32%, had gross receipts greater than \$100,000, whereas 87% of the 509 farms in this study exceed that sales volume (median gross sales was \$281,751). 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 54 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 56.3% (shown on table 7) 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 2006, there are only 65 farms with sales less than \$100,000, 80 mixed livestock-crop enterprise farms, and 82 farms in the west region. 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 2006 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, 1997-2006.

	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997
Number of Farms	509	520	522	513	513	532	553	539	535	560
Age of Operator	46	46	46	45	44	44	44	43	42	42
Farm Size (acres)	1,966	1,998	2,002	1,995	2,033	1,937	1,916	1,921	1,882	1,729
Gross Cash Revenue	281,751	281,667	265,524	247,757	220,781	216,697	205,659	190,676	173,972	179,052
Total Farm Assets	688,802	684,181	652,575	612,437	575,606	543,860	549,636	520,094	499,496	485,094
Total Farm Liabilities	348,102	338,657	323,805	305,268	284,828	287,068	274,640	266,401	270,802	263,406
Current Ratio	1.2	1.2	1.3	1.4	1.3	1.2	1.4	1.4	1.2	1.2
Working Capital	20,660	27,812	35,264	39,712	29,099	21,910	36,612	29,643	12,095	11,207
Debt-to-asset (%)	57.5	54.8	54.3	54.3	53.3	55.5	53.9	55.5	59.4	58.6
Rate of Return on Farm Assets (%)	4.7	4.9	6.1	7.0	5.7	4.1	7.6	8.4	4.0	2.5
Rate of Return on Farm Equity (%)	2.4	4.3	6.7	8.4	4.4	3.2	7.7	9.0	0.0	-1.4
Operating Profit Margin (%)	12.2	12.9	15.1	17.4	14.5	12.1	20.6	21.6	11.5	8.3
Net Farm Income	35,980	42,286	44,912	49,181	38,079	27,729	45,085	42,009	19,491	14,290
Term Debt Coverage Ratio	1.2	1.3	1.5	1.6	1.3	1.0	1.6	1.5	0.9	0.7
Term Debt & Capital Repayment Margin (\$)	5,378	10,110	18,752	21,012	10,628	301	17,768	17,973	-2,680	-8,995
Asset Turnover Ratio	0.38	0.39	0.40	0.42	0.37	0.38	0.42	0.38	0.36	0.34
Operating Expense Ratio (%)	72.5	71.1	69.2	66.8	68.8	70.9	63.3	61.2	71.9	73.3
Depreciation Expense Ratio (%)	5.6	6.0	6.0	5.9	5.6	5.9	5.3	5.7	5.7	6.0
Interest Expense Ratio (%)	7.2	6.0	5.6	5.6	6.6	7.6	7.8	8.4	9.6	9.9
Net Farm Income Ratio (%)	14.2	16.0	18.6	19.6	17.3	14.0	21.7	22.4	12.7	8.1

FARM CLASSIFICATION AND HIGHLIGHTS

ALL FARMS

Highlights

- Some consistent trends over the past ten years, 1997-2006, 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 57%, and by median farm assets and liabilities, which increased 42% and 32%, to \$688,802 and \$348,102, respectively.
 - farmers are getting older; the median age increased from 42 to 46.
 - average off-farm wages and salaries per farm household increased by two-thirds.
- Overall financial performance in 2006 was the lowest in the past five years. Median net farm income was \$35,980. Good crop prices and record sugarbeet yields were not enough to offset historically high input costs and severe drought in the west and portions of central North Dakota.
- Financial performance, 1997-2006, was poorest in 1997 followed by 1998 because of low cattle prices, weather related production problems with small grains in 1997, low crop prices in 1998 and increasing production costs. Financial performance was strong in 1999 and 2000, despite very 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. Profit declined in 2001 because of lower government subsidies and higher crop production costs with continued low commodity prices.
- Profit increased 37% in 2002 from high prices and lower production costs. Median net farm income reached a 10-year high in 2003 at \$49,181. 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. Financial performance in 2004 was strong albeit down from 2003. High costs and poor row crop yields were offset by crop insurance, very high spring wheat, canola and field pea yields and very strong beef cow-calf profit and flax prices. Profit declined in 2005 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
- Median current ratio has been relatively stable, ranging between 1.2 to 1.4 from 1997 to 2006. In 2006, the median debt-to-asset ratio, 57.5%, was the worst since 1998.
- Median rates of return on equity and assets were 4.7% and 2.4%, respectively, in 2006. In the 1997-2006 period, the years that ROE exceeded ROA, which indicated that debt capital was employed profitably, were 1999, 2000, 2003, and 2004.
- Median term debt coverage ratio dropped to 1.2 in 2006 compared to the ten year high of 1.6 in 2003. Only in 1997 and 1998 was median term debt coverage ratio below 1.0, which indicates over one-half of the farms were not able to make all scheduled term debt payments with farm and non-farm income.
- Interest expense as a percent gross revenue declined from 1997 to 2004 but then increased in 2006 and 2005, to 7.2% and 6.0%, respectively, because of higher debt and interest rates.
- Median net farm income as a percent of gross revenue was 14.2% in 2006 and 16% in 2005. In the 1997-2006 period it was the highest, 22.4%, in 1999 and lowest, 8.1%, in 1997.

TABLE 2. FARM CLASSIFICATIONS AND PERCENT DISTRIBUTION OF FARM TYPES WITHIN REGIONS, NORTH DAKOTA FARM BUSINESS MANAGEMENT EDUCATION PROGRAM, 2006.

Farm Group Category	Number of Farms (509)	Percentage	Farm Group Category Breakout by Region			
			Red River Valley	North Central	South Central	West
Region			97	177	153	82
Red River Valley	97	19.1				
North Central	177	34.8				
South Central	153	30.1				
West	82	16.1				
Farm Enterprise			-----percentage-----			
Crop	335	65.8	99.0	74.0	60.1	19.5
Livestock	94	18.5	0.0	13.6	20.9	46.3
Mixed	80	15.7	1.0	12.4	19.0	34.1
Farm Sales						
\$99,999 or less	65	12.8	11.3	10.7	11.1	22.0
\$100,000 - \$249,999	160	31.4	18.6	35.0	32.7	36.6
\$250,000 - \$499,999	176	34.6	29.9	40.7	34.6	26.8
\$500,000 or more	108	21.2	40.2	13.6	21.6	14.6
Farm Size						
1,999 acres or less	258	50.7	77.3	41.2	54.2	32.9
2,000 acres or more	251	49.3	22.7	58.8	45.8	67.1
Cropland Tenure						
Full tenant	102	20.0	27.8	13.6	21.1	23.8
1-20 percent owned	129	25.3	32.0	30.7	15.1	26.3
21-40 percent owned	117	23.0	27.8	20.5	27.0	16.3
41 percent or more owned	157	30.8	12.4	35.2	36.8	33.8
Farm Income						
\$19,999 or less	196	38.5	14.4	35.0	41.2	69.5
\$20,000 - \$49,999	104	20.4	15.5	25.4	20.3	15.9
\$50,000 - \$99,999	103	20.2	22.7	22.0	23.5	7.3
\$100,000 or more	106	20.8	47.4	17.5	15.0	7.3
Debt-to-asset Ratio						
0 - 40 percent	159	31.2	37.1	28.8	34.6	23.2
41 - 70 percent	184	36.1	41.2	36.7	32.0	36.6
71 percent or more	166	32.6	21.6	34.5	33.3	40.2
Farmer Age						
39 years or younger	151	29.7	35.1	30.5	25.5	29.3
40 - 49 years	164	32.2	30.9	32.8	29.4	37.8
50 years or older	194	38.1	34.0	36.7	45.1	32.9

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 had little representation since 1997. Locations of North Dakota Farm Business Management programs that participated in the 2006 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, and Glen Ullin

Highlights

- In 2006 the median farm size increased from the Red River Valley (1,329 acres, all crop land) to the west region (2,763 acres, including pasture). Median farm size was 2,263 acres (1,809 crop acres) in the north central region and 1,819 acres (1,334 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 much larger total farm sales, assets, and liabilities than farms in other regions.
- In 2006, the incidence of livestock and mixed enterprise farms ranged from only 1% in the Red River Valley to 80% in the west.
- Financial performance for the west region in 2006 was the worst for any region in any year over the 1997-2006 period. Median net farm income plummeted to \$689 from \$43,987 in 2005.
- Red River Valley financial performance was the strongest of any region in 2006 and was much improved from 2005. Financial performance was similar for the north central and south central regions in 2006 due to an improvement in the north central and a sharp decline in the south central region relative to its unusually strong performance in 2005. Median net farm income was up 71%, to \$83,970, in the Red River Valley and 18%, to \$34,777, in the north central region. It dropped 47% , to \$32,576 in the south central region.
- Median current ratio in 2006 was 1.4 in the Red River Valley, 1.2 for the south central and 1.1 for the north central and west regions. Both the 2006 and the five year average, 2001-2005, median debt-to-asset ranged from 49% in the Red River Valley to about 59% in the west region.
- The five-year average, 2001-2005, median rate of return on equity ranged from 9.6% in the Red River Valley to 4.6% in the north central region. In 2005 it was 10.7% in the Red River Valley, 1.9% in the north central, 1.5% in the south central, and -6.0% in the west region.
- The five year average, 2001-2005, median term debt coverage ratio ranged from 1.7 in the Red River Valley to 1.1 in the south central region. In 2006 it was highest, 2.2, in the Red River Valley and lowest, 0.6, in the west region.

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 2006, 66% of farms were classified as crop, 18% as livestock and 16% were mixed enterprise farms.
- Nearly one-half of the west region farms were classified as livestock in 2006, compared to none in the Red River Valley, 14% in the north central and 21% in the south central regions.
- In every year, 1997-2006, 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 1997 and 2001.
- Livestock farms had their best financial performance in 2005. It is the only year in the 1997-2006 period where livestock farms had better solvency and rates of return on assets and equity than crop farms. Also, the median current ratio of 1.7 and operating expense (all expenses except depreciation and interest) as a percent of gross revenue, 55.8%, were the best for any farm type over the 10 year period.
- In 2006, median net farm income for crop farms increased 34%, to \$53,642, but decreased 85%, to \$6,151, for livestock farms and 47%, to \$24,334, for mixed enterprise farms.
- The median asset turnover ratio in 2006 was 0.48 for crop farms, 0.29 for mixed enterprise farms and 0.21 for livestock farms. A higher ratio for crop farms is typical.
- Livestock farms had the lowest median term debt coverage ratio, 0.7, in 2006, but the highest, 1.7, in 2004 and 2005, compared to other farm types.
- In 2006, the median interest expense as a percent of gross revenue increased to 6.0% for crop farms, 10.9% for livestock farms, and 10.1% for mixed enterprise farms. Every year, 1997-2006, crop farms had the best measure.
- In 2006, crop farms had the best performance in converting gross income into net income, 16.1%, compared to 6.0% for livestock farms. However, in 2005, livestock farms had the best, 28.2% that occurred during the 1996-2005 period.

Figure 1. Median Total Farm Assets and Liabilities by Farm Type, 2006, N.D. Farm Mgt Program

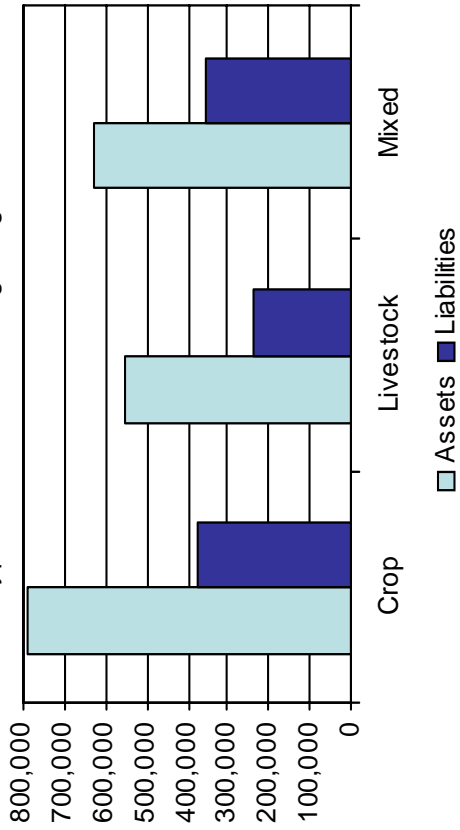


Figure 2. Median Net Farm Income by Farm Type, 1997-2006, N.D. Farm Mgt Program

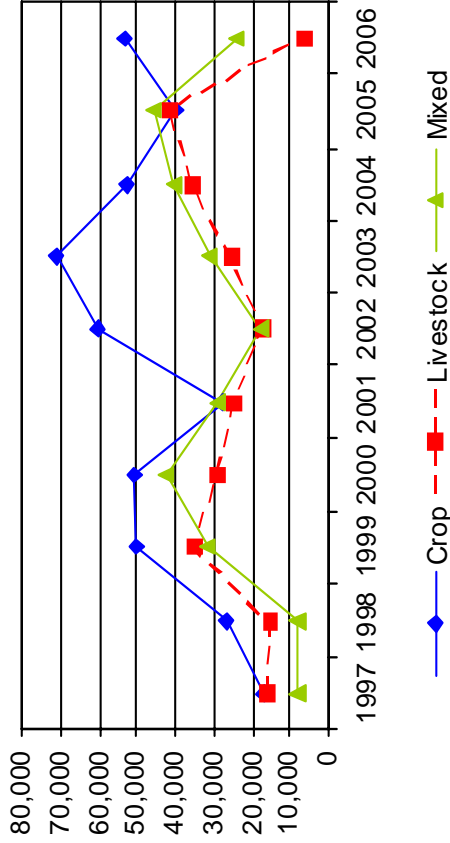


Figure 3. Median Rate of Return on Assets by Farm Type, 1997-2006, N.D. Farm Mgt Program

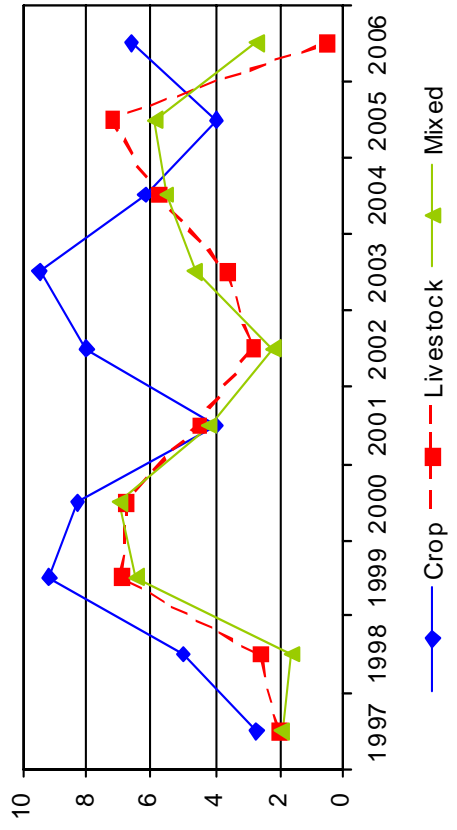
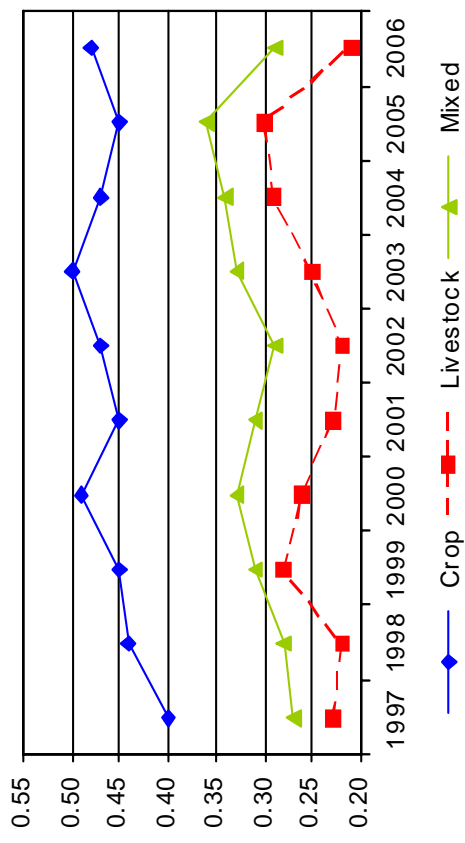


Figure 4. Median Asset Turnover Ratio by Farm Type, 1997-2006, N.D. Farm Mgt Program



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 \$281,751 in 2006 and average farm sales were \$361,418. The percentage of farms with over \$500,000 of sales has increased from 6% to 21% over the past 10 years.
- Gross sales are correlated to region and farm type. In 2006, 40% of Red River Valley farms had sales in excess of \$500,000, compared to 15% in the west region. Also, crop farms were five times more likely to have sales in excess of \$500,000 than were livestock farms.
- As expected, 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 relationship between gross sales and financial performance is typical. However, in 2006, farms with \$100,000 to \$249,999 sales had a lower median current ratio, rates of return on assets and equity, operating profit margin, term debt coverage ratio, and net farm income as a percent of gross revenue than farms with sales less than \$100,000.
- In 2006, median net farm income declined 58%, to \$5,563, for farms with less than \$100,000 sales, and 55%, to \$14,107, for farms with sales \$100,000 to \$249,999, but increased 6%, to \$60,175, for farms with sales \$250,000 to \$499,999, and 17%, to \$119,008, for farms with sales greater than \$500,000.
- Farms with low sales typically have higher debt-to-asset. The five-year average, 2001-2005, median debt-to-asset was 62.1%, 58.8%, 51.6%, and 46.3% for the lowest to highest farm sale groups, respectively.
- Typically, repayment capacity is directly related to amount of sales. The five-year average, 2001-2005, median term debt coverage ratio was 1.2, 1.2, 1.5, and 1.9 for the lowest to highest farm sale categories, respectively. Only in 1997 and 2005 did farms with less than \$100,000 sales have better repayment capacity than both farm groups between \$100,000 and \$500,000 sales.
- From 1997-2006, farms with sales under \$100,000 had the best operating expense as percent of gross revenue, but the worst interest expense ratio, and usually the worst depreciation expense ratio.

Figure 5. Median Total Farm Assets and Liabilities by Farm Sales, 2006, N.D. Farm Mgt Program

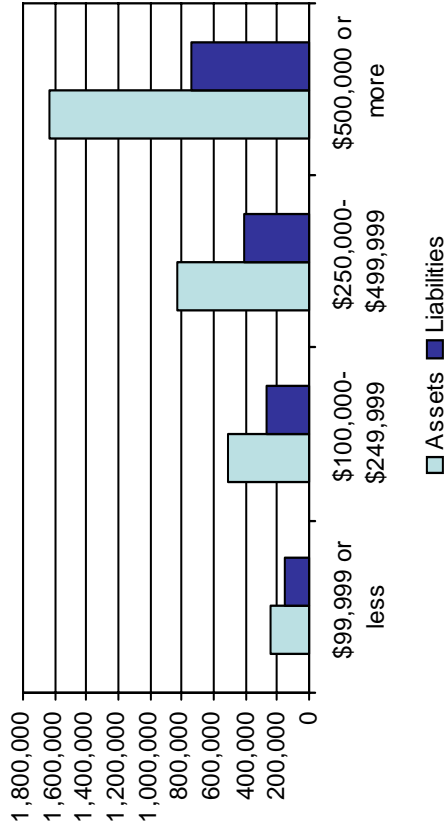


Figure 6. Median Net Farm Income by Farm Sales, 1997-2006, N.D. Farm Mgt Program

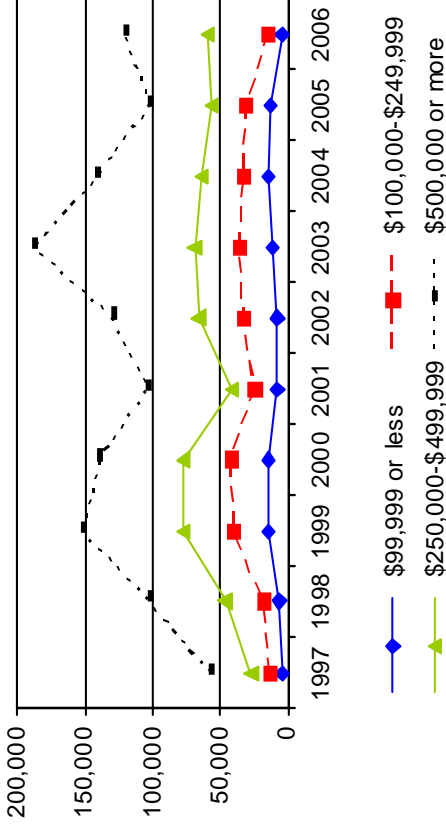


Figure 7. Median Term Debt Coverage Ratio by Farm Sales, 1997-2006, N.D. Farm Mgt Program

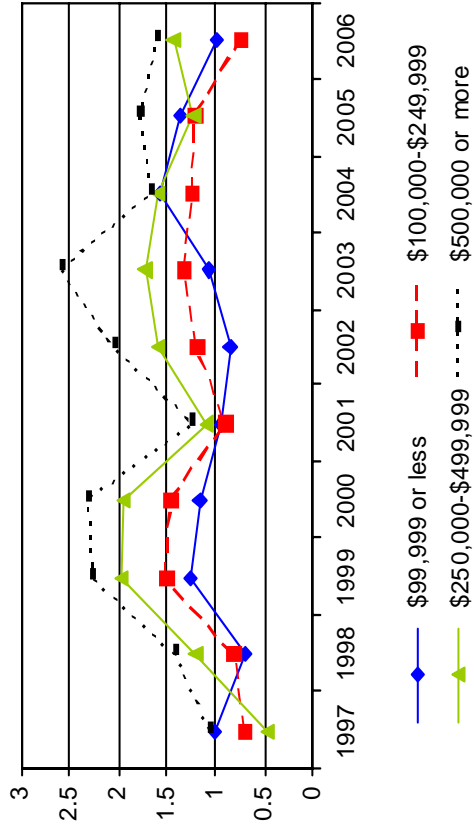
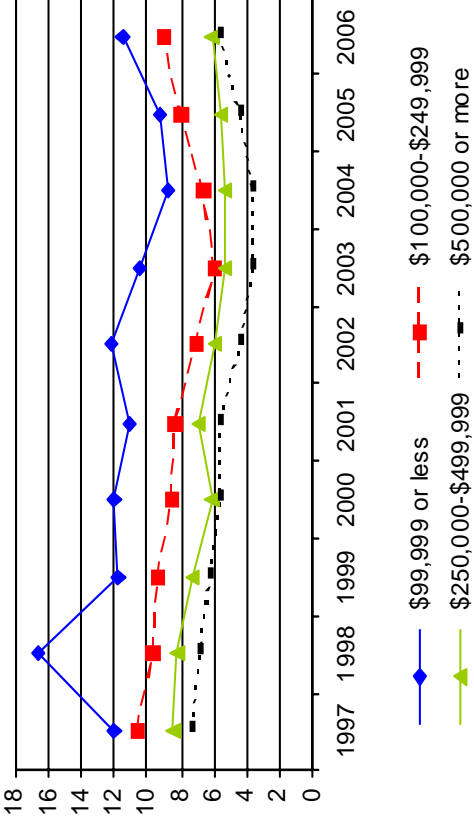


Figure 8. Median Interest Expense as a Percent of Gross Revenue, by Farm Sales, 1997-2006, N.D. Farm Mgt Program



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 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 2006, mixed enterprise farms were slightly more likely to be larger than 2,000 acres than were crop or livestock farms.
- In 2006, 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 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.
- In 2006, median net farm income was \$27,950 for farms with less than 2,000 acres and \$49,897 for farms with more than 2,000 acres. Historically, farms with more than 2,000 acres have about twice the net income of the small farm group.
- Farms larger than 2,000 acres had a similar median current ratio as smaller farms in 2006, 1.2, but slightly better for the five year 2001-2005 average, 1.4 to 1.3, respectively.
- In 2006, median debt-to-asset was 60.1% for farms with less than 2,000 acres and 53.4% for larger farms.
- Median term debt coverage ratio is typically 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:

- Ownership of crop land is less likely in the Red River Valley. In 2006, only four out of ten of Red River Valley farms owned more than 20% of the crop land they operated, compared to one-half of west region farms and about 60% of farms in the central regions.
- Crop land ownership increases with age. In 2006, farmers 50 years or older were over twice as likely to own more than 40% of their crop land were 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. One-half of livestock farms and over one-third of 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 1997 to 2006 there is no clear relationship between current ratio and land tenure except that farms with greater than 40% crop land ownership tend to have a slightly better median current ratio.
- Farms with greater than 40% crop land ownership typically have better solvency than other crop land ownership groups. The five-year average, 2001-2005, median debt-to-asset ratio was 61.2% for farms with no crop land ownership compared to 49.1% 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 2006, median net farm income ranged from \$58,022 for farms with 1 to 20% crop land ownership to \$23,537 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, 1997-2006, N.D. Farm Mgt Program

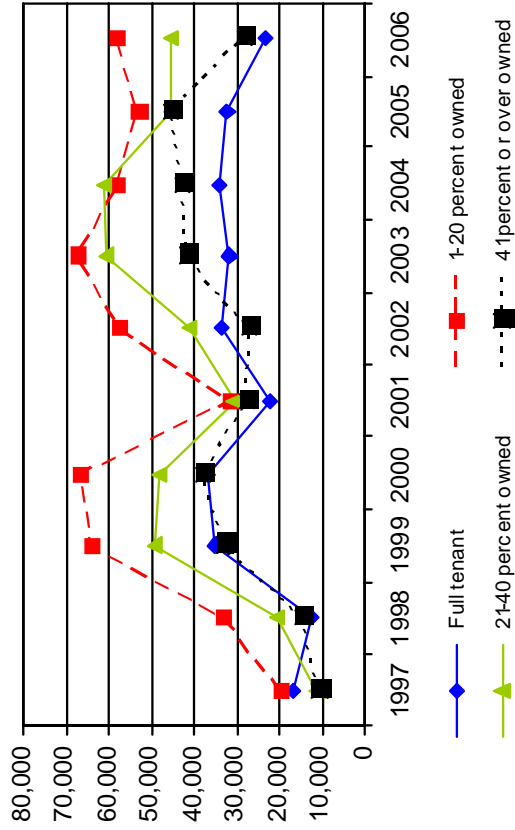


Figure 10. Median Asset Turnover Ratio by Crop Land Tenure, 1997-2006, N.D. Farm Mgt Program

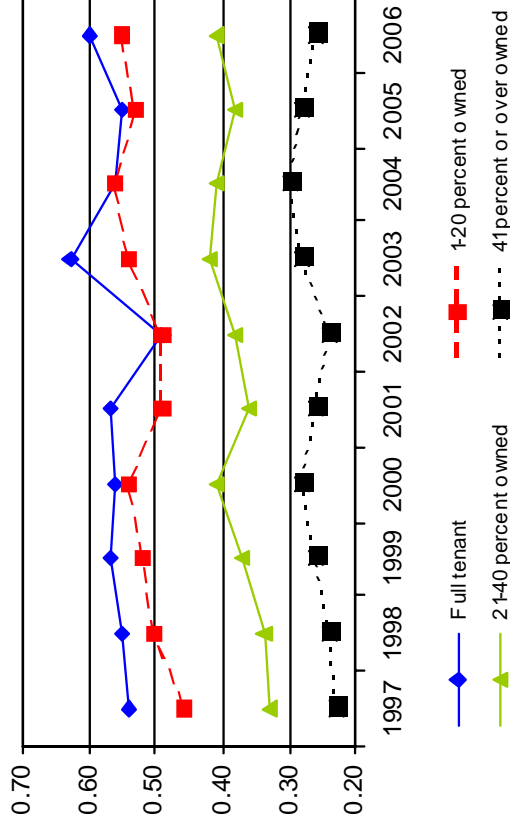


Figure 11. Median Net Farm Income by Debt-to-Asset Group, 1997-2006, N.D. Farm Mgt Program

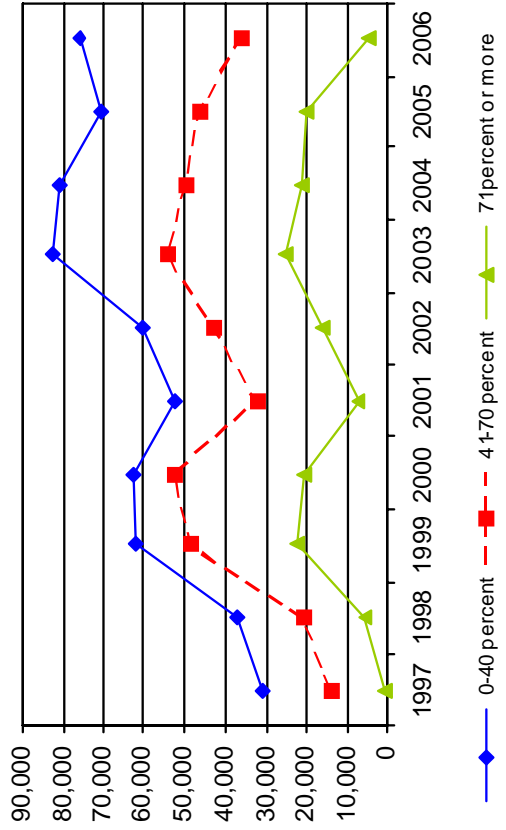
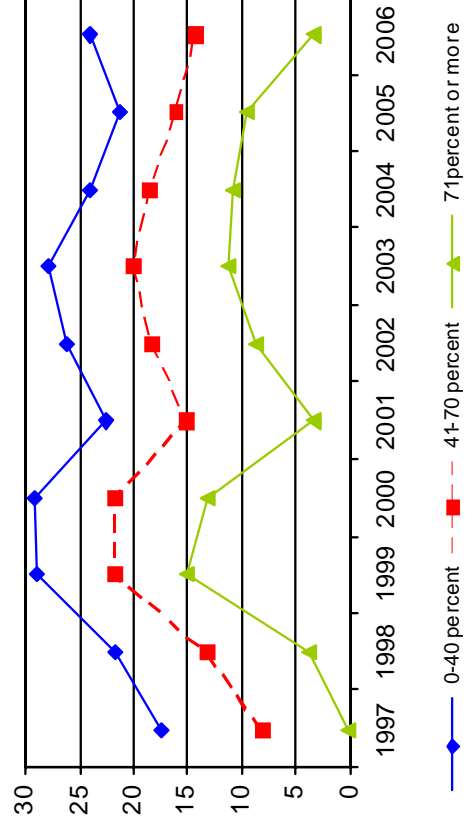


Figure 12. Median Net Farm Income as a Percent of Gross Revenue by Debt-to-Asset Group, 1997-2006, N.D. Farm Mgt Program



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. Year-to-year changes in median net farm income within regions and farm types averaged 50% over the past 10 years. Volatility is less when all farms are grouped together. Statewide, the median net farm income has declined 15%, 6%, and 9% in the years 2006, 2005, and 2004, respectively.
- The highest median net farm income in the 1997-2006 period was \$49,181 in 2003 and the lowest was \$14,290 in 1997. It was \$35,980 in 2006.
- The Red River Valley region had the highest median net farm income every year from 1997 to 2006, except for 1998 and 2005. In 2006, nearly one-half of Red River Valley farms exceeded \$100,000 net farm income while over 70% of west region farms had net farm income less than \$20,000.
- Typically, crop farms have been more profitable than livestock farms. In 2006, over one-half of crop farms had net farm income greater than \$50,000 compared to 18% of livestock farms. Two-thirds of livestock farms earned less than \$20,000.
- The typical strong associations between net farm income and farm sales and farm size were greatly reduced in 1997.
- In 2006, 63% of farms with sales greater than \$250,000 had net farm income greater than \$50,000. Over 70% of farms with less than \$100,000 sales and 56% of farms with sales \$100,000 to \$249,999 earned less than \$20,000.
- In 2006, one-half of farms larger than 2,000 acres had net farm income greater than \$50,000, compared to one-third of smaller farms.
- From 1999 to 2006, farmers 40 to 49 years old had higher median net farm income than farmers that were younger or older. However, in 1997 and 1998, farmers less than 40 years old had the highest median net farm income.
- Solvency, liquidity, repayment capacity, and financial efficiency were strongly correlated with net farm income.
- In 2001, low-debt farms (less than 40% debt-to-asset) were five times more likely to have net farm income in excess of \$50,000 than high-debt farms (greater than 70% debt). In other years, 1997-2006, low-debt farms were three to four times more likely to have net farm income greater than \$50,000.

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 was 57.5% in 2006 after ranging from 53.3% to 55.5% between the years 1999 to 2005.
- Red River Valley farms, crop farms, large farms (greater than 2,000 acres) and farms with high sales (greater than \$500,000 sales) nearly always had lower median debt-to-asset than other regions, farm types, farm size and farm sales groups, respectively, during the years 1997-2006.
- 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 2006, farms in the low, medium and high debt-to-asset categories had median current ratios of 3.1, 1.1 and 0.9; term debt coverage ratios of 2.7, 1.1 and 0.6; interest expense as a percent of gross revenue of 3.8, 7.6 and 10.3; and net farm income as percent of gross revenue of 24.1, 14.2 and 3.3, respectively.
- In 2006, farms with sales less than \$100,000 are over twice 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.
- Median net farm income for the low, medium, and high debt-to-asset categories in 2006 was \$75,755, \$35,883 and \$4,507, respectively.
- In 2006, 4 out of 10 farms with low debt had net farm income greater than \$100,000 compared to only one out of 25 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 2006, 30% of farm operators were under 40 years old and 32% were 40 to 49 years old. The percent of farmers 50 and older has steadily increased from 19% in 1996 to 38% in 2006.
- Prior to 1999, the age of farmers tended to increase slightly from east to west, but from 1999 to 2006 the age distribution of farm operators has been similar for all 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. However, in 2006, the median net farm income was \$32,664 for farmers less than 40 years old, \$35,883 for farmers 40-49 years old, and \$42,770 for farmers older than 50 years.
- Median total assets were lowest, 1997-2006, 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, as the age of the farm operator increases there is a higher percent of crop land owned, and the percent of farm debt tends to decrease. In 2006, median debt-to-asset was 67.8% for farmers less than 40 years old, 58.6% for farmers in the 40 to 49 age group and 45.7% for farmers 50 or older.
- The five-year average, 2001-2005, median current ratio was 1.3 for all age groups.
- In each year, 1997-2006, the young age group of farmers employed assets more efficiently than farmers 50 and older. The young group had better median measures of ROA, ROE, asset turnover and net farm income as percent of gross revenue despite having much fewer total assets and higher debt-to-asset.

Figure 13. Median Total Farm Assets and Liabilities by Farmer Age, 2006, N.D. Farm Mgt Program

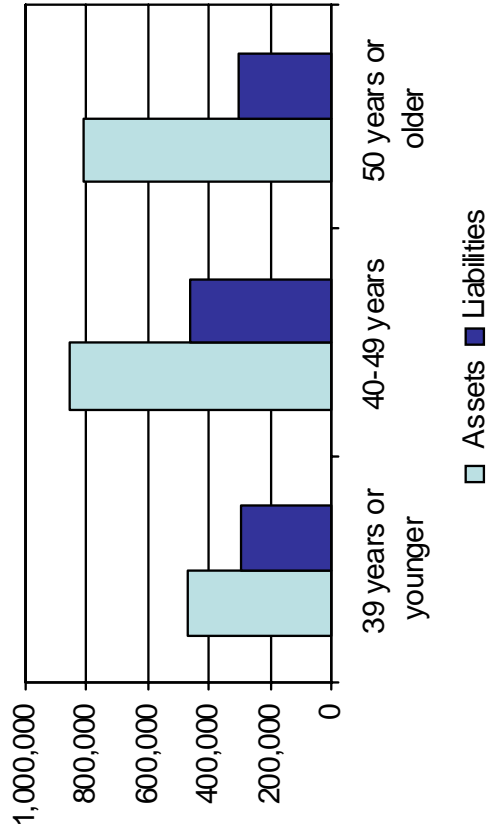


Figure 14. Median Net Farm Income by Farmer Age, 1997-2006, N.D. Farm Mgt Program

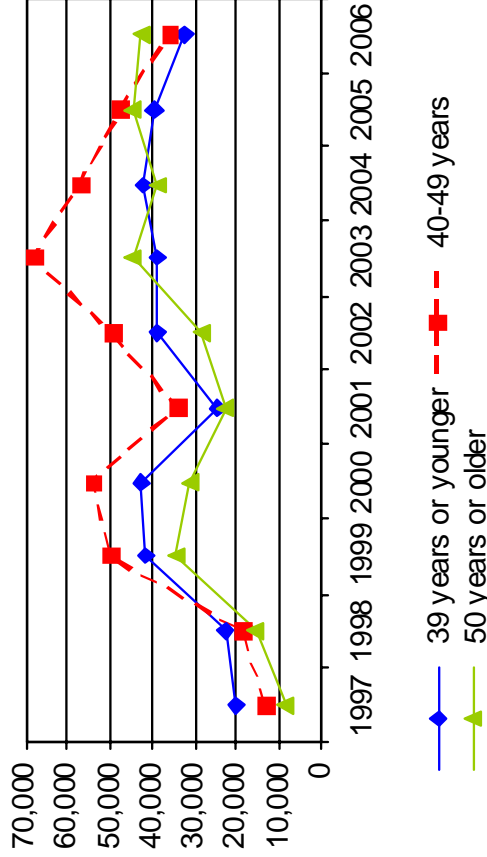


Figure 15. Median Term Debt Coverage by Farmer Age, 1997-2006, N.D. Farm Mgt Program

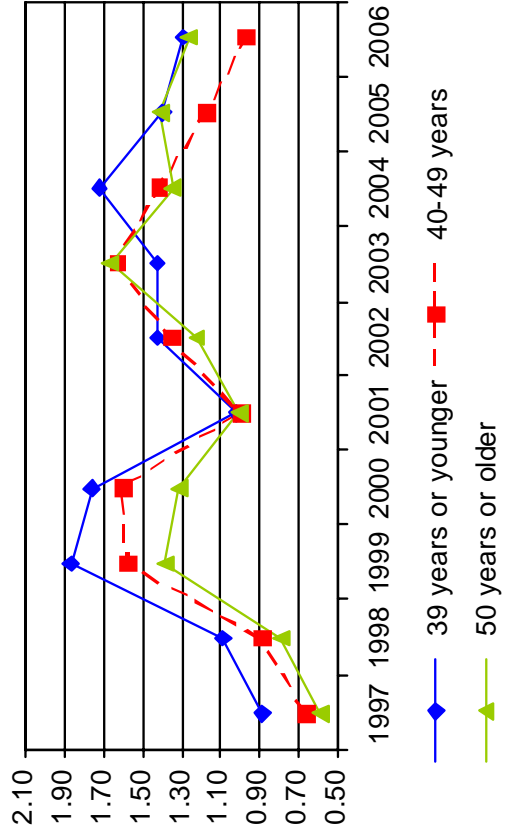


Figure 16. Median Net Farm Income as a Percent of Gross Revenue by Farmer Age, 1997-2006, N.D. Farm Mgt Program

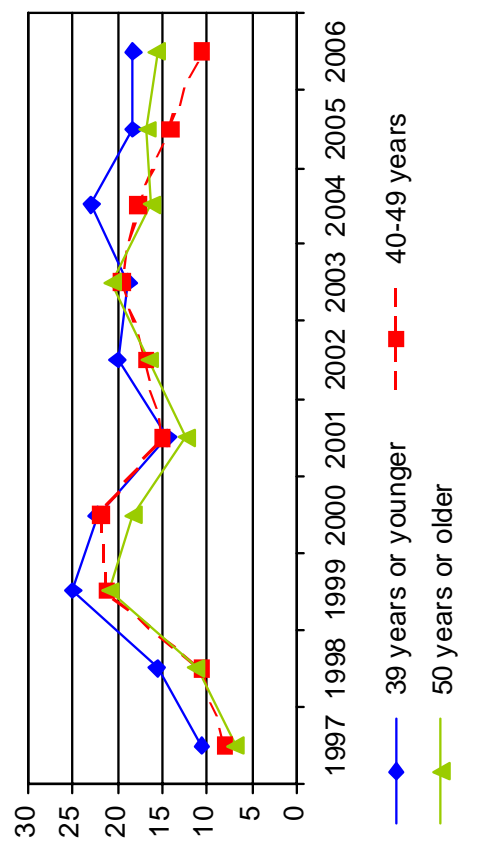


TABLE 3. CURRENT ASSETS AND CURRENT LIABILITIES, QUARTILE VALUES FOR 2006, MEDIAN VALUES FOR 2005, AND 5-YEAR AVERAGE, 2001-2005, OF MEDIAN VALUES, NORTH DAKOTA FARM BUSINESS MANAGEMENT EDUCATION PROGRAM PARTICIPANTS.

Farm Group	2006				Average of 2001-2005				
	Upper Quartile	Lower Quartile	Median	2005 Median	Upper Quartile	Lower Quartile	Median	2005 Median	Average of 2001-2005 Medians
All Farms	314,413	90,778	183,276	184,339	161,995	231,262	124,239	126,498	108,116
Region									
Red River Valley	488,953	150,549	285,627	226,498	248,838	305,826	158,452	144,090	142,948
North Central	280,523	97,949	172,885	158,090	150,162	222,424	129,803	134,520	105,552
South Central	318,461	98,679	178,120	195,536	156,017	240,411	115,529	118,121	101,932
West	264,000	56,698	127,451	181,631	146,036	185,032	92,751	91,972	83,729
Farm Enterprise									
Crop	373,563	116,542	224,781	208,396	186,631	248,653	148,695	151,529	123,872
Livestock	202,152	56,389	107,449	119,507	104,471	130,349	69,586	61,479	64,425
Mixed	288,137	75,777	140,598	163,506	146,312	219,268	120,155	117,139	102,867
Farm Sales									
\$99,999 or less	74,785	19,046	43,646	53,951	45,937	65,539	32,159	36,796	33,594
\$100,000-\$249,999	162,774	66,795	107,449	115,450	116,345	133,402	97,154	97,078	87,860
\$250,000-\$499,999	307,184	170,673	245,383	227,528	220,313	244,943	159,373	168,163	149,686
\$500,000 or more	715,583	333,853	494,040	472,670	465,971	518,253	328,295	280,222	264,057
Farm Size									
1,999 acres or less	206,100	54,380	112,887	116,262	103,571	146,452	94,037	91,945	78,940
2,000 acres or more	455,987	166,422	262,368	267,849	228,237	323,046	185,069	180,689	144,303
Cropland Tenure									
Full tenant	190,721	39,211	96,721	114,977	116,264	120,282	68,358	81,338	77,809
1-20 percent owned	409,332	149,504	251,694	224,925	200,827	339,140	192,575	182,137	147,354
21-40 percent owned	432,635	133,036	245,523	237,484	202,883	265,760	157,609	152,134	124,681
41 percent or more owned	286,899	76,141	160,759	161,759	142,815	177,147	108,833	96,378	84,451
Net Farm Income									
\$19,999 or less	174,500	43,514	93,041	99,135	85,743	199,500	102,853	104,926	85,246
\$20,000-\$49,999	253,356	90,001	150,236	144,421	130,094	166,407	111,072	103,658	89,093
\$50,000-\$99,999	310,798	164,366	244,799	221,993	206,142	242,211	136,444	146,267	122,933
\$100,000 or more	671,275	303,703	472,279	410,907	391,098	383,935	188,310	194,137	156,973
Debt-to-Asset Ratio									
0-40 percent	455,800	150,983	274,639	269,210	230,264	155,489	82,409	91,918	72,487
41-70 percent	314,015	97,260	192,210	181,914	167,982	258,204	160,399	141,721	124,228
71 percent or more	228,934	57,299	119,793	119,902	109,649	255,857	141,323	138,012	124,546
Farmer Age									
39 years or younger	210,186	54,046	116,605	138,182	131,485	162,531	95,607	103,861	88,420
40-49 years	449,111	119,254	254,416	228,887	207,742	345,732	183,926	159,785	132,405
50 years or older	322,028	111,478	203,716	186,071	154,365	203,451	123,168	111,086	93,366

TABLE 4. LIQUIDITY MEASURES, QUARTILE VALUES FOR 2006, MEDIAN VALUES FOR 2005, AND 5-YEAR AVERAGE, 2001-2005, OF MEDIAN VALUES, NORTH DAKOTA FARM BUSINESS MANAGEMENT EDUCATION PROGRAM PARTICIPANTS.

Farm Group	2006			Average of 2001-2005			2006			Average of 2001-2005
	Upper Quartile	Lower Quartile	Median	Upper Quartile	Lower Quartile	Median	Upper Quartile	Lower Quartile	Median	Medians
All Farms	2.1	0.9	1.2	103,505	-12,795	20,660	103,505	-12,795	20,660	30,759
Region										
Red River Valley	2.4	1.1	1.4	213,701	8,747	54,139	213,701	8,747	54,139	59,813
North Central	1.9	0.9	1.1	88,109	-14,542	15,951	88,109	-14,542	15,951	24,249
South Central	1.8	0.9	1.2	129,190	-15,517	21,538	129,190	-15,517	21,538	29,869
West	2.0	0.8	1.1	80,011	-29,227	9,266	80,011	-29,227	9,266	30,365
Farm Enterprise										
Crop	2.1	0.9	1.2	131,854	-13,955	23,575	131,854	-13,955	23,575	32,793
Livestock	2.1	0.9	1.3	82,855	-4,445	17,704	82,855	-4,445	17,704	30,517
Mixed	1.8	0.9	1.2	90,356	-17,815	15,618	90,356	-17,815	15,618	29,429
Farm Sales										
\$99,999 or less	1.7	0.8	1.3	27,144	-6,833	8,498	27,144	-6,833	8,498	10,547
\$100,000-\$249,999	1.7	0.8	1.1	51,929	-21,035	7,502	51,929	-21,035	7,502	24,467
\$250,000-\$499,999	2.3	1.0	1.2	143,156	-7,429	54,188	143,156	-7,429	54,188	53,838
\$500,000 or more	2.3	1.0	1.3	331,858	-13,924	90,314	331,858	-13,924	90,314	138,571
Farm Size										
1,999 acres or less	2.0	0.9	1.2	69,431	-10,634	15,206	69,431	-10,634	15,206	18,356
2,000 acres or more	2.1	0.9	1.2	147,257	-19,036	39,317	147,257	-19,036	39,317	56,430
Cropland Tenure										
Full tenant	2.3	0.9	1.2	65,190	-8,630	8,622	65,190	-8,630	8,622	18,759
1-20 percent owned	1.7	0.9	1.1	93,714	-27,796	22,274	93,714	-27,796	22,274	36,956
21-40 percent owned	1.8	0.9	1.2	169,720	-12,308	30,942	169,720	-12,308	30,942	39,545
41 percent or more owned	2.6	0.9	1.3	125,009	-9,070	27,144	125,009	-9,070	27,144	35,757
Net Farm Income										
\$19,999 or less	1.3	0.6	0.9	14,618	-52,019	-12,448	14,618	-52,019	-12,448	-2,790
\$20,000-\$49,999	1.7	1.0	1.2	61,420	-1,454	21,264	61,420	-1,454	21,264	24,011
\$50,000-\$99,999	2.6	1.0	1.3	137,760	7,856	54,238	137,760	7,856	54,238	62,351
\$100,000 or more	3.9	1.3	2.0	390,567	86,514	213,815	390,567	86,514	213,815	178,421
Debt-to-Asset Ratio										
0-40 percent	6.9	1.7	3.1	327,184	61,434	153,737	327,184	61,434	153,737	134,220
41-70 percent	1.5	0.9	1.1	65,934	-6,967	18,811	65,934	-6,967	18,811	30,078
71 percent or more	1.1	0.6	0.9	13,067	-53,872	-12,996	13,067	-53,872	-12,996	-5,573
Farmer Age										
39 years or younger	1.8	0.9	1.2	63,563	-6,867	14,398	63,563	-6,867	14,398	25,191
40-49 years	1.7	0.8	1.1	98,661	-39,056	15,778	98,661	-39,056	15,778	38,520
50 years or older	3.4	1.0	1.3	146,964	-6,627	39,775	146,964	-6,627	39,775	34,572

TABLE 5. TOTAL ASSETS AND TOTAL LIABILITIES, QUARTILE VALUES FOR 2006, MEDIAN VALUES FOR 2005, AND 5-YEAR AVERAGE, 2001-2005, OF MEDIAN VALUES, NORTH DAKOTA FARM BUSINESS MANAGEMENT EDUCATION PROGRAM PARTICIPANTS.

Farm Group	2006					Average of		2006					Average of		
	Upper Quartile	Lower Quartile	Median	2005 Median	2001-2005 Medians	Upper Quartile	Lower Quartile	Median	2005 Median	2001-2005 Medians	Upper Quartile	Lower Quartile	Median	2005 Median	2001-2005 Medians
All Farms	1,154,578	440,130	688,802	684,181	613,732	196,578	560,226	348,102	338,657	307,925	Total Farm Liabilities(\$)				
Region															
Red River Valley	1,681,045	493,617	1,009,853	928,659	889,561	215,048	656,023	420,597	400,423	384,013					
North Central	1,078,123	466,898	688,852	661,748	594,454	211,331	535,310	367,556	351,886	309,012					
South Central	1,149,371	446,141	644,343	665,104	566,601	188,802	538,322	306,355	314,473	290,536					
West	967,612	281,501	559,489	603,130	551,002	162,591	523,309	302,913	287,610	268,132					
Farm Enterprise															
Crop	1,340,985	466,579	789,569	766,396	674,710	213,678	600,904	376,136	382,249	326,605					
Livestock	770,798	334,406	550,431	561,814	508,678	152,302	421,390	235,266	237,024	254,561					
Mixed	998,526	416,705	630,912	615,174	566,539	204,195	557,209	357,036	315,896	293,846					
Farm Sales															
\$99,999 or less	376,698	144,788	244,162	255,559	274,742	75,000	209,603	152,132	144,612	148,107					
\$100,000-\$249,999	638,058	364,547	499,887	498,149	477,545	170,179	378,891	270,119	273,118	258,179					
\$250,000-\$499,999	1,122,071	607,955	827,894	805,400	790,476	230,083	561,355	402,796	377,075	368,860					
\$500,000 or more	2,024,898	1,187,304	1,626,844	1,531,852	1,428,776	468,925	1,110,764	737,775	650,003	629,875					
Farm Size															
1-999 acres or less	728,085	289,490	478,038	479,742	452,003	136,347	399,663	239,395	254,198	232,197					
2,000 acres or more	1,540,588	675,436	1,018,755	945,647	821,924	298,337	726,064	471,003	438,961	392,587					
Cropland Tenure															
Full tenant	620,927	165,594	302,211	366,277	337,815	75,855	341,164	163,663	203,358	201,617					
1-20 percent owned	1,146,645	509,839	742,835	717,107	649,490	291,066	634,065	419,910	416,824	362,511					
21-40 percent owned	1,542,744	542,765	874,734	880,973	752,527	251,477	669,226	404,992	395,917	363,194					
41 percent or more owned	1,211,127	518,661	780,224	743,357	699,779	194,448	510,377	345,475	320,873	307,435					
Net Farm Income															
\$19,999 or less	781,417	314,528	489,453	482,303	423,349	164,148	538,433	310,690	314,489	260,966					
\$20,000-\$49,999	817,628	397,820	571,221	554,673	503,020	192,547	440,420	297,699	294,587	276,478					
\$50,000-\$99,999	1,108,354	558,339	780,224	771,040	723,505	205,454	567,691	355,640	369,041	322,447					
\$100,000 or more	1,978,375	1,089,833	1,519,757	1,388,036	1,268,647	292,744	737,462	467,682	438,336	421,813					
Debt-to-Asset Ratio															
0-40 percent	1,630,988	576,796	1,017,694	987,321	845,977	100,477	343,322	200,366	211,448	176,086					
41-70 percent	1,147,327	455,218	713,898	686,905	652,182	232,705	632,081	399,358	395,496	353,062					
71 percent or more	786,099	323,539	527,350	518,629	449,690	293,353	640,796	450,673	447,134	389,412					
Farmer Age															
39 years or younger	707,227	238,022	473,306	500,962	458,162	129,349	462,114	297,833	312,894	264,064					
40-49 years	1,499,579	541,304	860,456	828,742	725,296	289,035	747,813	462,444	416,329	372,112					
50 years or older	1,330,282	529,234	814,843	763,736	659,915	168,298	524,757	307,195	303,249	276,721					

TABLE 6. SOLVENCY MEASURES, QUARTILE VALUES FOR 2006, MEDIAN VALUES FOR 2005, AND 5-YEAR AVERAGE, 2001-2005, OF MEDIAN VALUES, NORTH DAKOTA FARM BUSINESS MANAGEMENT EDUCATION PROGRAM PARTICIPANTS.

Farm Group	2006						Average of						2006						Average of			
	Upper			Lower			2005			2001-2005			Upper			Lower			2005		2001-2005	
	Quartile	Median	Median	Quartile	Median	Median	Quartile	Median	Median	Quartile	Median	Median	Quartile	Median	Median	Quartile	Median	Median	Quartile	Median	Median	
All Farms	34.9	76.6	57.5	54.8	54.4	65.1	23.4	42.5	45.2	45.6	0.5	3.3	1.4	1.2	1.2	0.5	3.3	1.4	1.2	1.2	1.2	
Region																						
Red River Valley	34.5	63.5	49.3	52.3	48.8	65.5	36.5	50.7	47.7	51.2	0.5	1.7	1.0	1.1	1.0	0.5	1.7	1.0	1.1	1.1	1.0	
North Central	36.2	77.1	58.1	56.6	56.5	63.8	22.9	41.9	43.4	43.5	0.6	3.4	1.4	1.3	1.3	0.6	3.4	1.4	1.3	1.3	1.3	
South Central	33.0	76.1	56.3	52.9	53.7	67.0	23.9	43.7	47.1	46.3	0.5	3.2	1.3	1.1	1.2	0.5	3.2	1.3	1.1	1.1	1.2	
West	41.8	83.6	59.8	58.4	58.6	58.2	16.4	40.2	41.6	41.4	0.7	5.1	1.5	1.4	1.4	0.7	5.1	1.5	1.4	1.4	1.4	
Farm Enterprise																						
Crop	33.9	76.1	56.3	54.6	52.4	66.1	23.9	43.7	45.4	47.6	0.5	3.2	1.3	1.2	1.1	0.5	3.2	1.3	1.2	1.2	1.1	
Livestock	35.8	74.7	57.5	52.7	57.6	64.2	25.3	42.5	47.3	42.4	0.6	3.0	1.4	1.1	1.4	0.6	3.0	1.4	1.1	1.1	1.4	
Mixed	45.5	82.4	62.7	58.3	58.3	54.5	17.6	37.3	41.7	41.7	0.8	4.7	1.7	1.4	1.4	0.8	4.7	1.7	1.4	1.4	1.4	
Farm Sales																						
\$99,999 or less	47.0	82.3	69.2	66.2	62.1	53.0	17.7	30.8	33.8	37.9	0.9	4.6	2.2	2.0	1.6	0.9	4.6	2.2	2.0	2.0	1.6	
\$100,000-\$249,999	42.2	80.9	61.8	60.4	58.8	57.8	19.1	38.2	39.6	41.2	0.7	4.2	1.6	1.5	1.4	0.7	4.2	1.6	1.5	1.5	1.4	
\$250,000-\$499,999	29.4	75.2	52.6	51.0	51.6	70.6	24.8	47.4	49.0	48.4	0.4	3.0	1.1	1.0	1.1	0.4	3.0	1.1	1.0	1.0	1.1	
\$500,000 or more	34.0	62.7	51.7	47.8	46.3	66.0	37.3	48.3	52.2	53.7	0.5	1.7	1.1	0.9	0.9	0.5	1.7	1.1	0.9	0.9	0.9	
Farm Size																						
1,999 acres or less	36.8	78.8	60.1	60.4	58.9	63.2	21.2	39.9	39.6	41.1	0.6	3.7	1.5	1.5	1.4	0.6	3.7	1.5	1.5	1.5	1.4	
2,000 acres or more	33.7	72.9	53.5	50.4	50.8	66.3	27.1	46.5	49.6	49.2	0.5	2.7	1.2	1.0	1.0	0.5	2.7	1.2	1.2	1.0	1.0	
Cropland Tenure																						
Full tenant	37.2	79.5	63.3	63.0	61.2	62.8	20.5	36.7	37.0	38.8	0.6	3.9	1.7	1.7	1.6	0.6	3.9	1.7	1.7	1.7	1.6	
1-20 percent owned	39.5	79.6	59.7	58.2	56.5	60.5	20.4	40.3	41.8	43.5	0.7	3.9	1.5	1.4	1.3	0.7	3.9	1.5	1.4	1.4	1.3	
21-40 percent owned	33.2	72.7	57.4	56.2	53.7	66.8	27.3	42.6	43.8	46.3	0.5	2.7	1.3	1.2	1.2	0.5	2.7	1.3	1.3	1.3	1.2	
41 percent or more owned	27.5	73.9	50.9	47.2	49.1	72.5	26.1	49.1	52.8	50.9	0.4	2.8	1.0	0.9	1.0	0.4	2.8	1.0	0.9	0.9	1.0	
Net Farm Income																						
\$19,999 or less	54.9	86.6	72.4	69.0	69.8	45.1	13.4	27.6	31.0	30.2	1.2	6.5	2.6	2.2	2.3	1.2	6.5	2.6	2.2	2.2	2.3	
\$20,000-\$49,999	40.9	72.6	57.6	57.8	58.5	59.1	27.4	42.4	42.2	41.5	0.7	2.6	1.4	1.4	1.4	0.7	2.6	1.4	1.4	1.4	1.4	
\$50,000-\$99,999	30.8	73.6	50.4	50.2	48.9	69.2	26.4	49.6	49.8	51.1	0.4	2.8	1.0	1.0	1.0	0.4	2.8	1.0	1.0	1.0	1.0	
\$100,000 or more	21.9	51.9	35.7	36.0	38.0	78.1	48.1	64.3	64.0	62.0	0.3	1.1	0.6	0.6	0.6	0.3	1.1	0.6	0.6	0.6	0.6	
Debt-to-Asset Ratio																						
0-40 percent	13.7	33.5	26.6	24.1	24.7	86.3	66.5	73.4	75.9	75.3	0.2	0.5	0.4	0.3	0.3	0.2	0.5	0.4	0.4	0.3	0.3	
41-70 percent	49.0	62.6	57.4	56.1	55.3	51.0	37.4	42.6	43.9	44.7	1.0	1.7	1.3	1.3	1.2	1.0	1.7	1.3	1.3	1.3	1.2	
71 percent or more	77.3	94.4	83.0	82.8	83.5	22.7	5.6	17.0	17.2	16.5	3.4	16.9	4.9	4.8	5.0	3.4	16.9	4.9	4.8	4.8	5.0	
Farmer Age																						
39 years or younger	46.6	83.6	67.8	67.1	63.6	53.4	16.4	32.2	32.9	36.4	0.9	5.1	2.1	2.0	1.8	0.9	5.1	2.1	2.1	2.0	1.8	
40-49 years	39.8	78.1	58.6	55.1	53.7	60.2	21.9	41.4	44.9	46.3	0.7	3.6	1.4	1.2	1.2	0.7	3.6	1.4	1.4	1.2	1.2	
50 years or older	23.8	63.6	45.7	42.5	46.9	76.2	36.4	54.3	57.5	53.1	0.3	1.7	0.8	0.7	0.9	0.3	1.7	0.8	0.8	0.7	0.9	

TABLE 7. RATE OF RETURN ON ASSETS AND RATE OF RETURN ON EQUITY PROFITABILITY MEASURES, QUARTILE VALUES FOR 2006, MEDIAN VALUES FOR 2005, AND 5-YEAR AVERAGE, 2001-2005, OF MEDIAN VALUES NORTH DAKOTA FARM BUSINESS MANAGEMENT EDUCATION PROGRAM PARTICIPANTS.

Farm Group	2006					Average of				
	2006					2001-2005				
	Upper Quartile	Lower Quartile	Median	2005 Median	Average of 2001-2005 Medians	Upper Quartile	Lower Quartile	Median	2005 Median	Average of 2001-2005 Medians
	Return on Farm Assets(%)									
All Farms	9.1	-0.3	4.7	4.9	5.6	11.5	-8.2	2.4	4.3	5.4
Region										
Red River Valley	14.3	5.9	9.2	3.9	7.6	20.7	4.7	10.7	2.3	9.6
North Central	8.7	1.0	4.4	3.0	5.0	10.2	-5.0	1.9	1.0	4.6
South Central	7.7	-1.0	4.2	7.1	5.3	10.5	-11.0	1.5	9.1	5.4
West	3.5	-6.7	-0.6	6.8	5.0	1.1	-29.5	-6.0	7.7	4.8
Farm Enterprise										
Crop	11.4	1.7	6.6	4.0	6.3	15.4	-2.5	6.5	2.3	6.6
Livestock	4.1	-3.5	0.5	7.2	4.8	2.8	-17.2	-5.3	9.7	4.1
Mixed	5.7	-2.9	2.7	5.9	4.5	6.2	-11.4	0.0	7.2	3.9
Farm Sales										
\$99,999 or less	6.9	-2.5	1.4	3.0	2.0	8.3	-15.4	0.0	2.1	-1.3
\$100,000-\$249,999	6.5	-4.1	1.3	5.3	4.8	6.4	-18.8	-1.2	3.5	4.2
\$250,000-\$499,999	9.9	1.8	5.9	5.1	6.5	11.8	-2.4	5.7	5.0	6.9
\$500,000 or more	11.4	3.1	7.1	5.1	7.8	17.4	0.2	8.5	4.9	9.8
Farm Size										
1,999 acres or less	10.5	-1.4	5.0	4.0	4.7	13.4	-9.3	2.1	2.3	3.9
2,000 acres or more	8.5	0.6	4.4	6.2	6.3	10.3	-6.2	2.7	6.8	6.8
Cropland Tenure										
Full tenant	15.3	-2.4	5.8	6.0	5.8	24.5	-17.7	1.5	5.5	5.9
1-20 percent owned	10.8	0.6	6.2	5.0	6.5	13.5	-6.4	6.1	4.8	7.7
21-40 percent owned	9.9	0.6	5.2	4.1	5.8	11.5	-7.8	3.8	2.6	5.4
41 percent or more owned	6.4	0.1	2.9	5.3	4.9	6.9	-7.5	1.0	5.0	4.3
Net Farm Income										
\$19,999 or less	0.6	-6.9	-1.9	-1.5	-1.1	-4.9	-41.4	-13.9	-10.7	-9.2
\$20,000-\$49,999	7.4	3.6	5.1	4.4	4.9	8.5	0.0	2.2	3.0	3.9
\$50,000-\$99,999	11.0	5.4	7.6	7.9	8.5	14.5	4.1	8.5	9.5	10.8
\$100,000 or more	14.4	8.5	11.1	11.4	12.0	20.7	9.4	15.8	16.1	16.7
Debt-to-Asset Ratio										
0-40 percent	9.9	2.6	6.6	5.2	6.6	11.5	1.5	6.7	5.6	6.9
41-70 percent	9.4	0.9	5.1	5.2	6.0	13.3	-5.5	3.2	4.9	6.3
71 percent or more	7.0	-6.1	0.8	3.7	3.2	4.8	-49.0	-9.1	0.0	-0.7
Farmer Age										
39 years or younger	13.3	-0.4	5.9	7.4	6.8	24.4	-8.7	6.2	9.4	8.7
40-49 years	8.5	-0.8	4.4	4.3	5.9	10.7	-10.1	0.7	2.8	6.3
50 years or older	8.3	0.2	4.1	4.5	4.4	9.0	-6.0	2.2	3.6	3.3

TABLE 8. OPERATING PROFIT MARGIN AND NET FARM INCOME PROFITABILITY MEASURES, QUARTILE VALUES FOR 2006, MEDIAN VALUES FOR 2005, AND 5-YEAR AVERAGE, 2001-2005, OF MEDIAN VALUES, NORTH DAKOTA FARM BUSINESS MANAGEMENT PROGRAM PARTICIPANTS.

Farm Group	2006				Average of 2001-2005			2006				Average of 2001-2005
	Upper Quartile	Lower Quartile	Median	2005 Median	2001-2005 Medians	Upper Quartile	Lower Quartile	Median	2005 Median	2001-2005 Medians		
	Operating Profit Margin(%)											
All Farms Region	21.1	-1.1	12.2	12.9	14.4	81,166	1,606	35,980	42,286	40,437		
Red River Valley	27.4	12.5	19.7	8.6	16.1	166,439	42,759	83,970	49,088	69,784		
North Central	20.7	3.3	12.1	7.3	13.1	75,755	11,159	34,777	29,520	37,666		
South Central	18.9	-4.5	11.1	18.2	14.2	72,807	538	32,576	61,039	39,014		
West	11.5	-21.3	-1.7	17.4	14.1	35,255	-19,116	689	43,987	35,247		
Farm Enterprise												
Crop	21.8	3.7	13.2	8.7	13.4	112,691	15,000	53,642	40,013	50,464		
Livestock	17.5	-13.8	2.7	24.5	17.6	37,506	-8,322	6,151	41,190	28,732		
Mixed	18.7	-10.7	9.6	18.3	13.9	45,083	-14,523	24,334	45,826	32,919		
Farm Sales												
\$99,999 or less	20.3	-9.3	8.8	14.7	9.8	25,011	-6,236	5,563	13,209	11,172		
\$100,000-\$249,999	16.4	-12.5	4.9	13.0	13.6	40,978	-9,191	14,107	31,267	31,226		
\$250,000-\$499,999	22.6	5.6	13.6	12.3	15.5	99,093	22,074	60,175	56,585	59,816		
\$500,000 or more	23.5	6.9	15.1	12.9	16.9	205,673	48,927	119,008	101,555	132,384		
Farm Size												
1,999 acres or less	21.7	-3.9	12.2	9.7	12.5	67,152	1,449	27,950	25,619	27,898		
2,000 acres or more	20.4	1.2	12.1	15.1	16.1	107,837	4,395	49,897	65,973	57,361		
Cropland Tenure												
Full tenant	20.2	-6.6	7.7	9.9	10.7	54,684	660	23,537	32,007	30,698		
1-20 percent owned	19.2	1.4	12.1	10.4	13.1	95,294	11,159	58,022	52,796	53,056		
21-40 percent owned	20.7	1.6	13.4	11.3	14.3	127,708	12,250	45,689	45,614	47,731		
41 percent or more owned	24.0	0.3	12.5	18.2	17.8	67,573	-956	28,168	45,320	36,945		
Net Farm Income												
\$19,999 or less	1.6	-20.1	-6.4	-3.2	-2.9	6,397	-25,578	-6,694	479	1,710		
\$20,000-\$49,999	17.5	8.4	13.0	10.3	13.2	42,620	28,149	34,262	33,563	33,490		
\$50,000-\$99,999	22.7	12.5	16.5	17.8	19.9	79,633	59,464	69,108	71,295	69,202		
\$100,000 or more	29.6	19.9	24.7	23.6	26.0	224,332	122,366	156,329	147,153	146,331		
Debt-to-Asset Ratio												
0-40 percent	26.9	9.0	18.9	15.1	18.4	134,943	37,279	75,755	70,525	69,388		
41-70 percent	19.5	3.4	12.5	13.5	15.5	73,649	11,295	35,883	46,319	44,964		
71 percent or more	13.8	-13.4	1.4	8.4	7.5	36,628	-20,892	4,507	20,475	18,040		
Farmer Age												
39 years or younger	22.6	-1.7	13.8	14.6	15.2	65,698	3,750	32,664	39,288	36,703		
40-49 years	18.6	-2.0	9.3	10.9	14.0	90,812	-3,978	35,883	47,234	51,126		
50 years or older	21.7	0.9	12.9	12.9	13.7	93,226	6,954	42,770	44,435	35,841		

TABLE 9. REPAYMENT CAPACITY MEASURES, QUARTILE VALUES FOR 2006, MEDIAN VALUES FOR 2005, AND 5-YEAR AVERAGE, 2001-2005, OF MEDIAN VALUES, NORTH DAKOTA FARM BUSINESS MANAGEMENT EDUCATION PROGRAM PARTICIPANTS.

Farm Group	2006				Average of 2001-2005			2006				Average of 2001-2005	
	Upper Quartile	Lower Quartile	Median	Median	Upper Quartile	2005 Median	2005 Median	Upper Quartile	Lower Quartile	Median	Median	2005 Median	2001-2005 Medians
All Farms	2.26	0.45	1.15	1.33	50,900	-23,816	5,378	10,110	12,161	Term Debt and Capital Repayment Margin(\$)			
Region													
Red River Valley	4.14	1.40	2.16	1.33	98,024	10,923	52,314	826	29,982				
North Central	2.02	0.43	1.13	0.91	38,636	-24,748	5,123	-3,769	3,742				
South Central	2.57	0.42	1.13	1.87	46,068	-23,927	2,895	26,677	16,814				
West	1.12	-0.06	0.56	1.55	1,701	-54,364	-14,432	19,893	10,385				
Farm Enterprise													
Crop	2.84	0.58	1.52	1.10	65,407	-18,663	17,616	2,744	15,550				
Livestock	1.66	0.25	0.79	1.66	15,598	-24,256	-5,130	16,788	9,236				
Mixed	1.47	0.02	0.71	1.52	11,560	-43,404	-12,464	14,142	8,637				
Farm Sales													
\$99,999 or less	2.33	0.52	0.99	1.37	15,120	-13,682	-367	6,503	2,387				
\$100,000-\$249,999	1.78	0.12	0.73	1.21	17,334	-31,308	-9,126	7,517	6,080				
\$250,000-\$499,999	2.29	0.69	1.44	1.23	59,473	-19,284	17,214	11,930	22,330				
\$500,000 or more	3.16	0.75	1.59	1.76	123,680	-33,284	56,093	44,244	61,906				
Farm Size													
1,999 acres or less	2.64	0.52	1.15	1.20	40,535	-18,190	3,441	5,279	7,043				
2,000 acres or more	2.09	0.41	1.15	1.48	59,467	-38,351	7,345	23,741	21,703				
Cropland Tenure													
Full tenant	4.62	0.53	1.55	1.45	40,400	-11,875	12,359	9,915	7,763				
1-20 percent owned	2.20	0.55	1.15	1.27	53,858	-23,927	7,395	10,859	13,567				
21-40 percent owned	2.10	0.47	1.20	1.27	71,610	-24,079	10,652	8,921	16,422				
41 percent or more owned	2.06	0.44	1.02	1.32	40,369	-25,618	146	12,610	12,546				
Net Farm Income													
\$19,999 or less	0.81	-0.35	0.35	0.49	-5,303	-55,043	-24,003	-22,197	-15,571				
\$20,000-\$49,999	1.79	0.71	1.15	1.09	18,818	-14,837	6,225	2,461	5,575				
\$50,000-\$99,999	2.43	1.08	1.66	1.54	52,281	3,974	29,889	26,068	30,574				
\$100,000 or more	6.13	1.94	2.96	2.84	174,666	68,558	103,283	105,372	96,211				
Debt-to-Asset Ratio													
0-40 percent	6.72	1.47	2.68	2.24	117,748	13,933	54,233	39,814	41,373				
41-70 percent	1.96	0.48	1.09	1.21	44,417	-23,351	3,063	8,062	11,859				
71 percent or more	1.15	-0.02	0.58	0.87	3,503	-52,419	-19,824	-6,160	-7,710				
Farmer Age													
39 years or younger	2.65	0.57	1.29	1.40	40,163	-13,146	8,022	10,513	12,109				
40-49 years	1.89	0.23	0.97	1.17	46,093	-42,698	-854	6,232	13,842				
50 years or older	2.64	0.53	1.27	1.41	61,123	-20,749	11,104	14,428	11,470				

TABLE 10. ASSET TURNOVER AND OPERATING EXPENSE AND DEPRECIATION EXPENSE EFFICIENCY MEASURES (AS A PERCENTAGE OF GROSS FARM INCOME), QUARTILE VALUES FOR 2006, MEDIAN VALUES FOR 2005, AND 5-YEAR AVERAGE, 2001-2005, OF MEDIAN VALUES, FARM BUSINESS MANAGEMENT EDUCATION PROGRAM PARTICIPANTS.

Farm Group	2006					Average of					2006					Average of									
	Upper		Lower		Asset Turnover	Upper		Lower		2005	Upper		Lower		2001-2005	Upper		Lower		2005	Upper		Lower		2001-2005
	Quartile	Median	Quartile	Median		Quartile	Median	Quartile	Median		Quartile	Median	Quartile	Median		Quartile	Median	Quartile	Median		Quartile	Median	Quartile	Median	
All Farms	.58	.38	.27	.39	.39	63.1	81.9	72.5	71.1	69.4	63.1	81.9	72.5	71.1	69.4	3.4	9.7	5.6	6.0	5.9	3.4	9.7	5.6	6.0	5.9
Region																									
Red River Valley	.71	.41	.40	.53	.47	60.4	76.4	67.7	76.2	70.1	60.4	76.4	67.7	76.2	70.1	3.6	7.3	5.1	5.4	5.4	3.6	7.3	5.1	5.4	5.4
North Central	.57	.39	.27	.39	.39	63.6	81.6	72.6	76.2	70.2	63.6	81.6	72.6	76.2	70.2	2.9	8.2	4.9	5.8	5.2	2.9	8.2	4.9	5.8	5.2
South Central	.57	.42	.25	.38	.38	64.3	83.5	72.6	65.7	68.7	64.3	83.5	72.6	65.7	68.7	3.4	11.2	6.7	6.4	7.0	3.4	11.2	6.7	6.4	7.0
West	.36	.27	.20	.27	.32	67.5	89.9	79.0	62.3	66.7	67.5	89.9	79.0	62.3	66.7	3.8	16.0	8.7	7.1	7.0	3.8	16.0	8.7	7.1	7.0
Farm Enterprise																									
Crop	.67	.48	.36	.48	.47	63.7	80.4	71.9	75.3	70.6	63.7	80.4	71.9	75.3	70.6	3.4	8.0	5.1	5.8	5.7	3.4	8.0	5.1	5.8	5.7
Livestock	.29	.21	.16	.21	.26	57.5	86.8	73.4	55.8	63.2	57.5	86.8	73.4	55.8	63.2	1.7	17.4	10.2	6.7	6.6	1.7	17.4	10.2	6.7	6.6
Mixed	.39	.29	.24	.29	.33	63.8	84.3	76.1	65.1	68.9	63.8	84.3	76.1	65.1	68.9	1.4	11.5	6.0	6.1	6.6	1.4	11.5	6.0	6.1	6.6
Farm Sales																									
\$99,999 or less	.50	.24	.16	.24	.24	53.6	79.8	65.8	60.5	63.0	53.6	79.8	65.8	60.5	63.0	0.2	14.4	7.3	6.5	6.7	0.2	14.4	7.3	6.5	6.7
\$100,000-\$249,999	.46	.31	.22	.31	.36	65.5	88.5	76.5	69.0	68.8	65.5	88.5	76.5	69.0	68.8	3.2	11.1	5.9	5.9	5.7	3.2	11.1	5.9	5.9	5.7
\$250,000-\$499,999	.61	.44	.29	.43	.44	63.6	78.7	72.1	73.0	69.7	63.6	78.7	72.1	73.0	69.7	3.4	8.4	5.4	5.9	6.0	3.4	8.4	5.4	5.9	6.0
\$500,000 or more	.63	.47	.38	.47	.48	64.9	80.6	73.6	73.4	71.6	64.9	80.6	73.6	73.4	71.6	3.6	8.3	5.6	6.2	5.8	3.6	8.3	5.6	6.2	5.8
Farm Size																									
1,999 acres or less	.63	.38	.25	.38	.38	61.7	81.6	70.6	72.4	69.2	61.7	81.6	70.6	72.4	69.2	3.0	9.4	5.5	5.9	5.9	3.0	9.4	5.5	5.9	5.9
2,000 acres or more	.54	.39	.27	.39	.40	65.3	82.1	74.0	70.3	69.4	65.3	82.1	74.0	70.3	69.4	3.4	10.1	5.7	6.0	5.9	3.4	10.1	5.7	6.0	5.9
Cropland Tenure																									
Full tenant	1.00	.60	.34	.60	.56	63.3	84.7	73.0	72.9	71.6	63.3	84.7	73.0	72.9	71.6	1.8	9.5	5.0	5.2	5.7	1.8	9.5	5.0	5.2	5.7
1-20 percent owned	.67	.53	.42	.55	.52	67.0	81.0	75.3	74.6	72.7	67.0	81.0	75.3	74.6	72.7	3.7	7.1	5.0	5.2	5.4	3.7	7.1	5.0	5.2	5.4
21-40 percent owned	.51	.38	.32	.41	.39	63.8	81.3	72.1	72.6	70.1	63.8	81.3	72.1	72.6	70.1	3.4	8.9	5.5	6.3	5.7	3.4	8.9	5.5	6.3	5.7
41 percent or more owned	.33	.26	.19	.26	.27	58.5	81.9	70.8	64.4	64.0	58.5	81.9	70.8	64.4	64.0	3.4	11.5	7.2	6.6	6.4	3.4	11.5	7.2	6.6	6.4
Net Farm Income																									
\$19,999 or less	.44	.29	.20	.29	.32	74.8	94.7	84.1	86.7	82.4	74.8	94.7	84.1	86.7	82.4	3.7	13.5	7.9	6.6	6.7	3.7	13.5	7.9	6.6	6.7
\$20,000-\$49,999	.67	.38	.27	.39	.38	63.0	77.7	71.2	71.3	69.4	63.0	77.7	71.2	71.3	69.4	2.8	8.9	5.5	5.9	5.3	2.8	8.9	5.5	5.9	5.3
\$50,000-\$99,999	.64	.48	.34	.48	.43	63.9	74.7	70.0	68.0	65.2	63.9	74.7	70.0	68.0	65.2	3.1	7.1	4.4	5.4	5.4	3.1	7.1	4.4	5.4	5.4
\$100,000 or more	.61	.47	.36	.47	.46	56.9	68.8	62.6	63.3	61.6	56.9	68.8	62.6	63.3	61.6	3.4	7.7	5.0	5.7	5.4	3.4	7.7	5.0	5.7	5.4
Debt-to-Asset Ratio																									
0-40 percent	.47	.34	.25	.34	.35	59.5	75.4	65.2	67.8	64.6	59.5	75.4	65.2	67.8	64.6	3.5	11.0	6.5	7.1	6.7	3.5	11.0	6.5	7.1	6.7
41-70 percent	.58	.39	.27	.39	.40	63.8	78.9	72.1	70.6	68.5	63.8	78.9	72.1	70.6	68.5	3.5	9.5	5.5	5.6	5.3	3.5	9.5	5.5	5.6	5.3
71 percent or more	.68	.43	.28	.43	.45	71.2	92.2	81.0	75.1	75.8	71.2	92.2	81.0	75.1	75.8	2.5	8.6	5.3	5.0	5.6	2.5	8.6	5.3	5.0	5.6
Farmer Age																									
39 years or younger	.74	.48	.29	.48	.46	59.9	80.7	69.1	69.5	68.5	59.9	80.7	69.1	69.5	68.5	2.3	8.4	4.9	4.9	5.2	2.3	8.4	4.9	4.9	5.2
40-49 years	.59	.39	.29	.39	.42	67.1	84.1	76.1	73.8	70.7	67.1	84.1	76.1	73.8	70.7	3.7	9.0	5.6	6.0	5.9	3.7	9.0	5.6	6.0	5.9
50 years or older	.47	.32	.22	.32	.32	63.1	80.9	71.6	69.9	68.0	63.1	80.9	71.6	69.9	68.0	3.4	10.5	6.6	7.0	6.6	3.4	10.5	6.6	7.0	6.6

TABLE 11. INTEREST EXPENSE AND FARM INCOME EFFICIENCY MEASURES (AS A PERCENTAGE OF GROSS FARM INCOME), QUARTILE VALUES FOR 2006, MEDIAN VALUES FOR 2005, AND 5-YEAR AVERAGE, 2001-2005, OF MEDIAN VALUES, NORTH DAKOTA FARM BUSINESS MANAGEMENT EDUCATION PROGRAM PARTICIPANTS.

Farm Group	2006						Average of			2006						Average of								
	Upper			Lower			2005			2001-2005			Upper			Lower			2005			2001-2005		
	Quartile	Median	Quartile	Quartile	Median	Quartile	Median	Quartile	Median	Quartile	Median	Quartile	Median	Quartile	Median	Quartile	Median	Quartile	Median	Quartile	Median	Quartile	Median	
	Interest Expense(%)												Net Farm Income (%)											
All Farms	4.3	11.2	7.2	6.0	6.3	24.7	1.1	14.2	17.1	24.7	1.1	14.2	16.0	17.1										
Region																								
Red River Valley	3.5	7.5	5.0	4.9	4.6	28.4	13.7	21.8	18.5	28.4	13.7	21.8	11.7	18.5										
North Central	4.9	11.4	7.6	6.5	6.7	24.7	5.2	15.0	17.7	24.7	5.2	15.0	12.5	17.7										
South Central	3.3	10.8	6.7	5.2	6.0	23.0	0.4	12.8	16.5	23.0	0.4	12.8	20.1	16.5										
West	6.6	14.6	10.3	7.4	7.6	14.2	-13.1	0.6	16.6	14.2	-13.1	0.6	20.0	16.6										
Farm Enterprise																								
Crop	3.7	8.9	6.0	5.1	5.4	25.7	6.2	16.1	17.3	25.7	6.2	16.1	13.2	17.3										
Livestock	7.0	14.5	10.9	7.7	8.8	22.6	-9.3	6.0	18.9	22.6	-9.3	6.0	28.2	18.9										
Mixed	5.2	14.1	10.1	7.3	7.9	20.3	-6.6	10.5	16.5	20.3	-6.6	10.5	20.0	16.5										
Farm Sales																								
\$99,999 or less	5.1	19.0	11.5	9.3	10.4	27.3	-12.1	18.2	17.3	27.3	-12.1	18.2	20.6	17.3										
\$100,000-\$249,999	5.4	13.4	9.0	7.9	7.2	19.4	-7.8	9.4	17.2	19.4	-7.8	9.4	17.1	17.2										
\$250,000-\$499,999	3.8	9.3	6.1	5.6	5.8	25.0	7.1	16.2	17.4	25.0	7.1	16.2	15.0	17.4										
\$500,000 or more	3.8	7.8	5.5	4.4	4.3	24.0	6.9	14.3	17.6	24.0	6.9	14.3	15.5	17.6										
Farm Size																								
1,999 acres or less	3.8	11.5	7.1	6.4	6.6	26.3	1.1	15.8	16.7	26.3	1.1	15.8	14.9	16.7										
2,000 acres or more	4.7	10.9	7.2	5.7	6.1	22.2	2.1	13.4	17.5	22.2	2.1	13.4	17.2	17.5										
Cropland Tenure																								
Full tenant	2.8	8.7	4.9	4.0	4.8	26.6	0.4	13.0	17.2	26.6	0.4	13.0	16.8	17.2										
1-20 percent owned	4.4	9.0	6.5	5.1	5.3	21.8	3.6	13.9	15.6	21.8	3.6	13.9	14.2	15.6										
21-40 percent owned	4.3	10.6	7.3	6.5	6.8	24.3	3.3	15.7	16.6	24.3	3.3	15.7	14.9	16.6										
41 percent or more owned	5.2	14.5	10.2	7.7	8.5	25.6	-0.5	14.2	19.3	25.6	-0.5	14.2	21.0	19.3										
Net Farm Income																								
\$19,999 or less	7.4	15.1	11.0	7.8	8.9	4.7	-15.0	-3.3	1.1	4.7	-15.0	-3.3	0.4	1.1										
\$20,000-\$49,999	5.0	10.4	7.5	6.3	6.8	22.8	10.7	15.6	16.8	22.8	10.7	15.6	15.4	16.8										
\$50,000-\$99,999	3.6	7.9	5.2	6.0	5.5	26.2	14.5	18.5	23.2	26.2	14.5	18.5	21.8	23.2										
\$100,000 or more	2.4	5.9	4.4	4.0	3.9	32.0	21.9	26.9	28.9	32.0	21.9	26.9	26.3	28.9										
Debt-to-Asset Ratio																								
0-40 percent	2.2	5.6	3.8	3.1	3.3	30.5	14.1	24.1	24.5	30.5	14.1	24.1	21.4	24.5										
41-70 percent	5.3	11.3	7.6	6.8	7.2	22.8	4.8	14.2	17.6	22.8	4.8	14.2	16.1	17.6										
71 percent or more	7.3	14.7	10.3	8.7	8.8	14.9	-14.0	3.3	8.7	14.9	-14.0	3.3	9.5	8.7										
Farmer Age																								
39 years or younger	4.2	10.8	7.0	6.1	6.2	27.0	3.4	18.2	18.9	27.0	3.4	18.2	18.3	18.9										
40-49 years	4.8	11.5	7.6	6.0	6.1	19.1	-1.2	10.5	16.6	19.1	-1.2	10.5	14.0	16.6										
50 years or older	3.7	10.9	6.9	5.9	6.8	24.3	3.8	15.6	16.5	24.3	3.8	15.6	16.8	16.5										

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.

REFERENCES

- Farm Financial Standards Task Force. 1991. *Financial Guidelines for Agricultural Producers: Recommendations of the Farm Financial Standards Task Force*. American Bankers Association, Agricultural Bankers Division, Washington, DC.
- North Dakota Agricultural Statistics Service. 2006. *North Dakota Agricultural Statistics*. North Dakota State University, Fargo, and U.S. Department of Agriculture, Washington, DC.
- Swenson, Andrew L. 2006. *Financial Characteristics of North Dakota Farms, 2004-2005*. Agribusiness and Applied Economics Report No. 588, Department of Agribusiness and Applied Economics, North Dakota State University, Fargo, Website <http://agecon.lib.umn.edu/>
- Swenson, Andrew L. 2004. *Financial Characteristics of North Dakota Farms, 2001-2003*. Agribusiness and Applied Economics Report No. 546, Department of Agribusiness and Applied Economics, North Dakota State University, Fargo, Website <http://agecon.lib.umn.edu/>
- Swenson, Andrew L. 2001. *Financial Characteristics of North Dakota Farms, 1998-2000*. Agribusiness and Applied Economics Report No. 467, Department of Agribusiness and Applied Economics, North Dakota State University, Fargo, Website <http://agecon.lib.umn.edu/>.
- Swenson, Andrew L. 1998. *Financial Characteristics of North Dakota Farms, 1995-1997*. Agricultural Economics Report No. 403. Department of Agricultural Economics, North Dakota State University, Fargo. Website <http://agecon.lib.umn.edu/>