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Financial Characteristics of North Dakota Farms 2006-2007

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Abstract

The performance of over 500 North Dakota farms, 2006-2007, 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, 2002-2006, and farm financial trends for the 1998-2007 period are also presented. In 2007, median and average acreage per farm was 2,000 and 2,478, respectively. Median and average cash farm revenue was $353,252 and $458,843, respectively. Over 70% of farms were crop farms and nearly one-third of farms had gross sales exceeding $500,000. Median age of farm operators was 47.

Every financial measure for 2007 was much superior to in any other year for the 1998-2007 period. The highest median net farm income was $127,791 in 2007, followed by $49,181 in 2003. The lowest was $19,491 in 1998. The Red River Valley and crop farms typically had stronger profitability, solvency, and repayment capacity from 1998 to 2007 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 2007 and 2006 median net farm income for crop farms was $171,838 and $53,642, respectively, compared to only $25,531and $6,150 for livestock farms.

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 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 and 2007 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 because of a sharp increase 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, 1998-2007. 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 1998-2007, 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 2007, there were 30,100 farms in North Dakota with agricultural production of at least $1,000. Only 11,100, or 37%, had gross receipts greater than $100,000, whereas 90% of the 531 farms in this study exceed that sales volume (median gross sales was $353,252). 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 47.7% (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 2007, there are only 53 farms with sales less than $100,000, 62 mixed livestock-crop enterprise farms, and 85 farms in the west region. Also in 2007, there are only 75, 54, and 89 farms in the net farm income categories of less than $20,000, $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 2007 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, 1998-2007.

	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998
Number of Farms	531	509	520	522	513	513	532	553	539	535
	----------Median----------									
Age of Operator	47	46	46	46	45	44	44	44	43	42
Farm Size (acres)	2,000	1,966	1,998	2,002	1,995	2,033	1,937	1,916	1,921	1,882
Gross Cash Revenue	353,252	281,751	281,667	265,524	247,757	220,781	216,697	205,659	190,676	173,972
Total Farm Assets	810,426	688,802	684,181	652,575	612,437	575,606	543,860	549,636	520,094	499,496
Total Farm Liabilities	371,180	348,102	338,657	323,805	305,268	284,828	287,068	274,640	266,401	270,802
Current Ratio	1.7	1.2	1.2	1.3	1.4	1.3	1.2	1.4	1.4	1.2
Working Capital	103,063	20,660	27,812	35,264	39,712	29,099	21,910	36,612	29,643	12,095
Debt-to-asset (%)	50.0	57.5	54.8	54.3	54.3	53.3	55.5	53.9	55.5	59.4
Rate of Return on Farm Assets (%)	15.7	4.7	4.9	6.1	7.0	5.7	4.1	7.6	8.4	4.0
Rate of Return on Farm Equity (%)	25.3	2.4	4.3	6.7	8.4	4.4	3.2	7.7	9.0	0.0
Operating Profit Margin (%)	29.3	12.2	12.9	15.1	17.4	14.5	12.1	20.6	21.6	11.5
Net Farm Income	127,791	35,980	42,286	44,912	49,181	38,079	27,729	45,085	42,009	19,491
Term Debt Coverage Ratio	3.3	1.2	1.3	1.5	1.6	1.3	1.0	1.6	1.5	0.9
Term Debt & Capital Repayment Margin ($)	86,825	5,378	10,110	18,752	21,012	10,628	301	17,768	17,973	-2,680
Asset Turnover Ratio	0.56	0.38	0.39	0.40	0.42	0.37	0.38	0.42	0.38	0.36
Operating Expense Ratio (%)	58.2	72.5	71.1	69.2	66.8	68.8	70.9	63.3	61.2	71.9
Depreciation Expense Ratio (%)	4.3	5.6	6.0	6.0	5.9	5.6	5.9	5.3	5.7	5.7
Interest Expense Ratio (%)	5.2	7.2	6.0	5.6	5.6	6.6	7.6	7.8	8.4	9.6
Net Farm Income Ratio (%)	30.6	14.2	16.0	18.6	19.6	17.3	14.0	21.7	22.4	12.7

FARM CLASSIFICATION AND HIGHLIGHTS

ALL FARMS

Highlights

- Some consistent trends over the past ten years, 1998-2007, 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 103%, and by median farm assets and liabilities, which increased 62% and 37%, to $810,426 and $371,180, respectively.
  - farmers are getting older; the median age increased from 42 to 47.

- Every financial measure for 2007 was much superior to in any other year for the 1998-2007 period. Median net farm income was $127,791. Production costs were high, but prices for nearly every crop set record highs, usually by a wide margin. This provided profit for the 2007 crop and also from sales of beginning inventories. Dry edible bean and winter wheat yields set records, and yields of most other crops were very strong.

- Financial performance, 1998-2007, was poorest in 1998 because of low cattle and grain prices. 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 in 2003, $49,181, was the second highest in the 1998-2007 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. 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. Financial performance in 2006 dropped to a five year low. 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.

- Median current ratio was 1.7 in 2007 after, ranging between 1.2 to 1.4 from 1998 to 2006. Median debt-to-asset in 2007 improved to 50%, the best in the 1998-2007 period. It was only 57.5% in 2006 which was the worse since 1998.

- Median rates of return on equity and assets exploded to 25.3% and 15.7%, respectively, in 2007 compared to 2.4% and 4.7%, respectively, in 2006. In the 1998-2007 period, the years that ROE exceeded ROA, which indicated that debt capital was employed profitably, were 1999, 2000, 2003, 2004, and 2007.

- Medians for 2007 term debt coverage ratio and term debt and capital repayment margin were 3.3 and $86,825, compared to the previous ten year highs of 1.6 and $21,012, respectively, in 2003.

- Interest expense as a percent of gross revenue declined from 1998 to 2004, but increased in 2005 and 2006 because of higher debt and interest rates. It declined sharply in 2007, to 5.2%, because of much stronger gross revenue. Median net farm income as a percent of gross revenue was 30.6% in 2007. It ranged from 12.7% and 22.4% between 1998 and 2006.

TABLE 2. FARM CLASSIFICATIONS AND PERCENT DISTRIBUTION OF FARM TYPES WITHIN REGIONS, NORTH DAKOTA FARM BUSINESS MANAGEMENT EDUCATION PROGRAM, 2007.

			Farm Group Category Breakout by Region			
Farm Group Category	Number of Farms (509)	Percentage	Red River Valley	North Central	South Central	West
Region			95	196	155	85
Red River Valley	95	17.9				
North Central	196	36.9				
South Central	155	29.2				
West	85	16.0				
Farm Enterprise			----------percentage----------			
Crop	376	70.8	98.9	79.1	63.9	32.4
Livestock	93	17.5	1.1	12.8	18.7	44.7
Mixed	62	11.7	0.0	8.2	17.4	22.4
Farm Sales						
$99,999 or less	53	10.0	5.3	7.1	11.0	20.0
$100,000 - $249,999	131	24.7	18.9	23.5	24.5	34.1
$250,000 - $499,999	173	32.6	22.1	39.8	34.2	24.7
$500,000 or more	174	32.8	53.7	29.6	30.3	21.2
Farm Size						
1,999 acres or less	265	49.9	76.8	40.3	54.2	34.1
2,000 acres or more	266	50.1	23.2	59.7	45.8	65.9
Cropland Tenure						
Full tenant	113	21.3	23.2	16.3	24.5	24.7
1-20 percent owned	130	24.5	34.7	31.1	11.6	21.2
21-40 percent owned	127	23.9	30.5	19.9	28.4	17.6
41 percent or more owned	157	29.6	11.6	32.1	34.2	35.3
Farm Income						
$19,999 or less	75	14.1	9.5	11.7	14.2	24.7
$20,000 - $49,999	54	10.2	10.5	9.2	10.3	11.8
$50,000 - $99,999	89	16.8	20.0	12.8	18.1	20.0
$100,000 or more	313	58.9	60.0	66.3	57.4	43.5
Debt-to-asset Ratio						
0 - 40 percent	191	36.0	35.8	34.2	39.4	34.1
41 - 70 percent	229	43.1	41.1	45.9	42.6	40.0
71 percent or more	111	20.9	23.2	19.9	18.1	25.9
Farmer Age						
39 years or younger	161	30.3	33.7	31.6	27.7	28.2
40 - 49 years	163	30.7	31.6	28.6	29.7	36.5
50 years or older	207	39.0	34.7	39.8	42.6	35.3

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 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, Glen Ullin and Williston

Highlights

- In 2007 the median farm size increased from the Red River Valley (1,339 acres, all crop land) to the west region (2,586 acres, including pasture). Median farm size was 2,292 acres (1,892 crop acres) in the north central region and 1,877 acres (1,377 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 2007, the incidence of livestock and mixed enterprise farms ranged from only 1% in the Red River Valley to 67% in the west.

- In 2007, each region attained their strongest median net farm income over the 1998-2007 period. The north central region had the highest, $157,109, up from $34,777 in 2006. The south-central region was $127,790 compared to $32,576 in 2006, and the Red River Valley increased to $115,712 from $83,970 in 2006.

- The median net farm income of the west region, $77,136, was lower than other regions for 2007, but was much improved from 2006 when it had the lowest median net farm income, $689, of any region over the past 10 years.

- The median current ratio in 2007 was 1.8 in the north central, south central, and west regions, and 1.5 in the Red River Valley . The five year average, 2002-2006, median current ratio ranged from 1.4 in the Red River Valley to 1.2 in the north central region.

- In 2007, median debt-to-asset improved substantially to 49% for the central regions and to 55% for the west but deteriorated slightly to 51% in the Red River Valley compared to 2006.

- The five year average, 2002-2006, median term debt coverage ratio ranged from 1.9 in the Red River Valley to 1.1 in the west region. In 2007 it was highest, 3.7, in the north central region and lowest, 2.2, in the west region.

- The median operating expense (all expenses except depreciation and interest) as a percent of gross revenue improved to 64.9% for the Red River Valley and was less than 60% for other regions. It was the first year, 1998-2007, that any region achieved less than 60%.

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 2007, 71% of farms were classified as crop, 17% as livestock and 12% were mixed enterprise farms.

- In the west region 45% of farms were classified as livestock in 2007, compared to 1% in the Red River Valley, 13% in the north central and 19% in the south central regions.

- In every year, 1998-2007, 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 in 2007 had the best performance of any year and farm type during the entire 1998-2007 period. For example, median rate of return on equity and median term debt coverage ratio were 37% and 4.3, respectively, for crop farms in 2007. These far exceeded the previous 10 year highs of 12% and 2.0 which occurred in 2003 for crop farms.

- Livestock farms had their best financial performance in 2005. It is the only year in the 1998-2007 period where livestock farms had better solvency and rates of return on assets and equity than crop farms.

- In 2007, median net farm income for crop farms increased 220%, to $171,838, 330%, to $25,531, for livestock farms and 168%, to $65,303, for mixed enterprise farms.

- A higher asset turnover ratio for crop farms is typical. In 2007 the median was .65, .26, and .35 for crop, livestock and mixed enterprise farms, respectively. The five year average, 2002-2006, median asset turnover was .47 for crop farms, .25 for livestock farms (predominantly beef cow-calf farms) and .32 for mixed enterprise farms.

- Crop farms had the highest median term debt coverage ratio, 4.3, in 2007, compared to 1.3 for livestock farms. Livestock farms had the highest in 2005, 2004 and 2001, compared to other farm types.

- In 2007, the median interest expense as a percent of gross revenue decreased to 4.5% for crop farms, 9.8% for livestock farms, and 7.5% for mixed enterprise farms. Every year, 1998-2007, crop farms had the best measure.

- In 2007, crop farms had the best performance in converting gross income into net income, 35%, compared to 15.9% 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, 2007, N.D. Farm Mgt Program

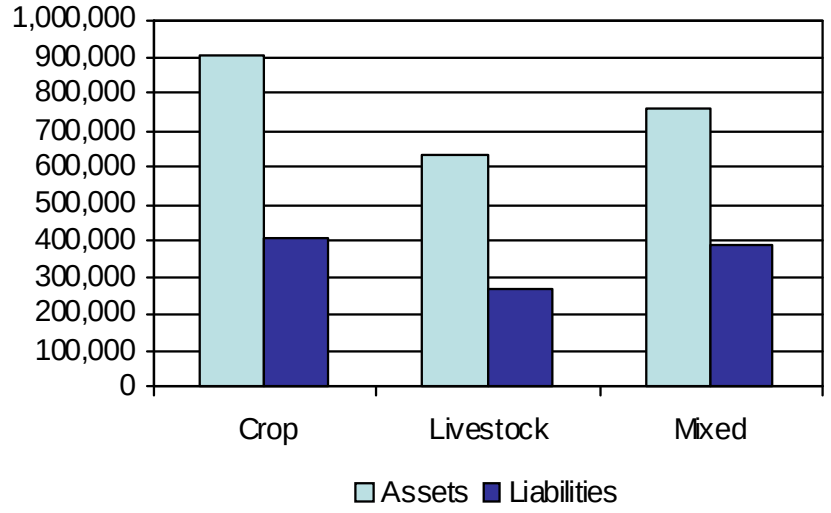


Figure 2. Median Net Farm Income by Farm Type, 1998-2007, N.D. Farm Mgt Program

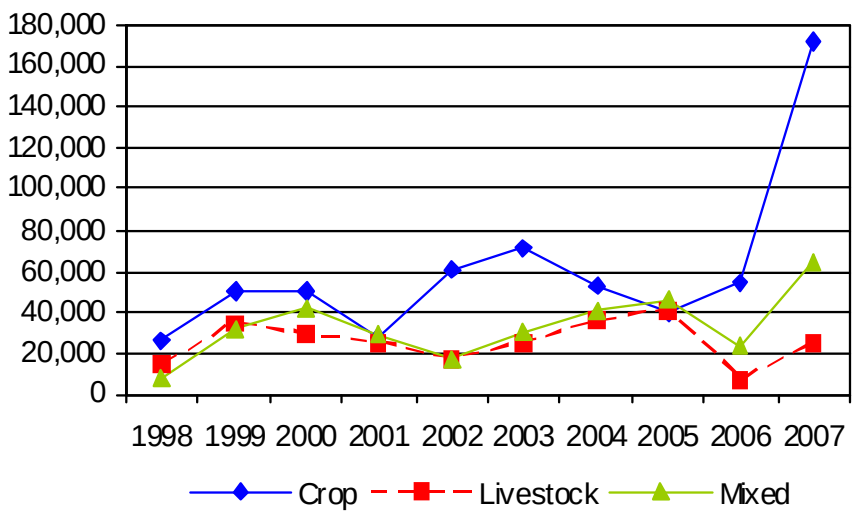


Figure 3. Median Rate of Return on Assets by Farm Type, 1998-2007, N.D. Farm Mgt Program

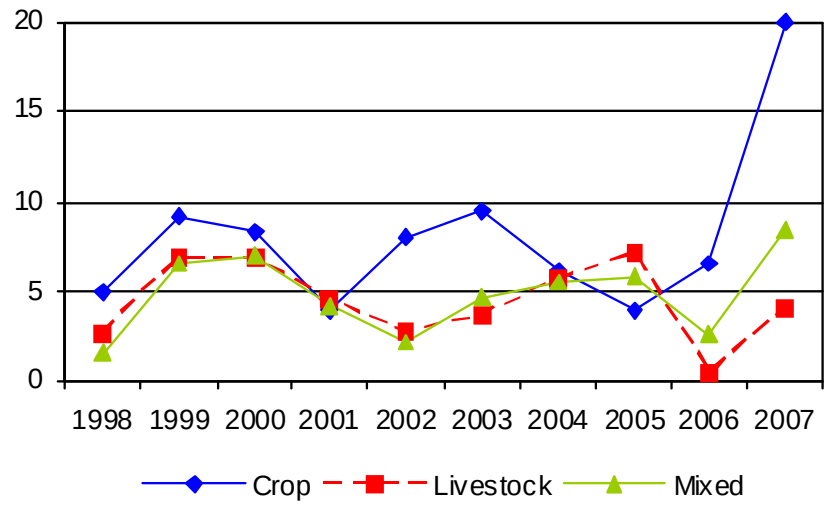
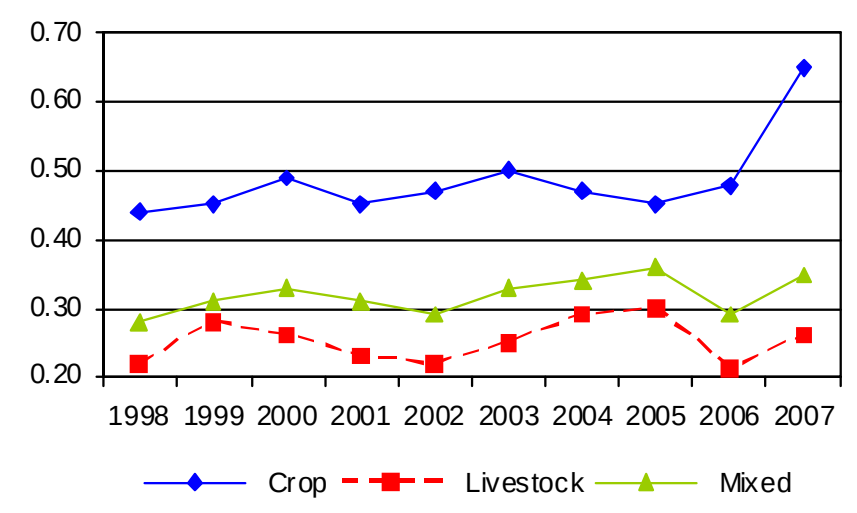


Figure 4. Median Asset Turnover Ratio by Farm Type, 1998-2007, N.D. Farm Mgt Program



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 $353,252 in 2007 and average farm sales were $458,843. The percentage of farms with over $500,000 of sales has increased from 7% in 1998 to 21% in 2006, and 33% in 2007.

- Gross sales are correlated to region and farm type. In 2007, over one-half of Red River Valley farms had sales in excess of $500,000, compared to one-fifth in the west region. Also, crop farms were seven times more likely to have sales in excess of $500,000 than were livestock farms.

- Financial performance of all farm sale groups improved in 2007, but the lowest sale group, farms with less than $100,000 in sales, had the smallest improvement.

- 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 lower medians than farms with sales less than $100,000 for 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.

- In 2007, median net farm income increased 113%, to $11,850, for farms with less than $100,000 sales, 302%, to $56,641, for farms with sales $100,000 to $249,999, 135%, to $141,913, for farms with sales $250,000 to $499,999, and 149%, to $296,677, for farms with sales greater than $500,000.

- Farms with low sales typically have worse solvency. The median debt-to-asset was 63.8%, 57.8%, 48.5%, and 45.5% for the lowest to highest farm sale groups, respectively, in 2007.

- Typically, repayment capacity is directly related to amount of sales. The five-year average, 2002-2006, median term debt coverage ratio was 1.2, 1.1, 1.5, and 1.9 for the lowest to highest farm sale categories, respectively. In 2007, both farm groups with sales greater than $250,000 had extremely high median term debt coverage ratios of over 4.0.

- From 1998-2007, farms with sales under $100,000 typically had the best operating expense as percent of gross revenue, but the worst interest expense ratio and depreciation expense ratio.

- Debt capital is employed profitably if rate of return on equity exceeds the rate of return on assets. In the 10 year period, from 1998 to 2007, this occurred in eight 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, 2007, N.D. Farm Mgt Program

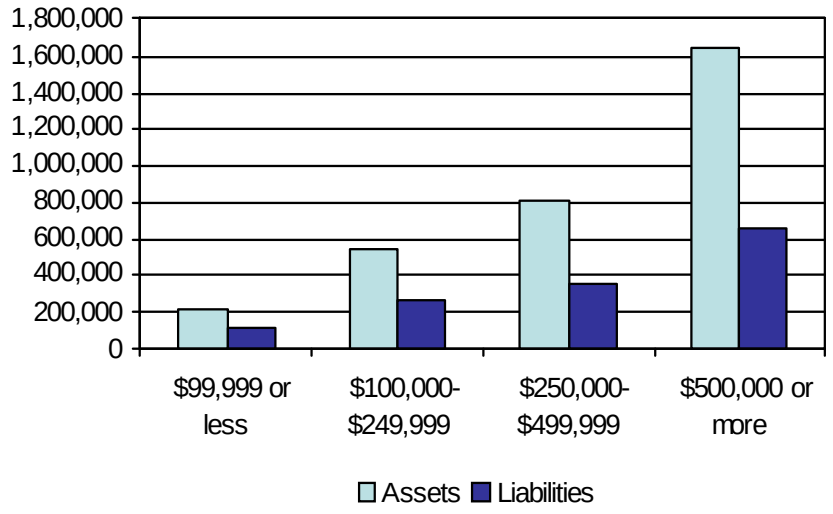


Figure 6. Median Net Farm Income by Farm Sales, 1998-2007, N.D. Farm Mgt Program

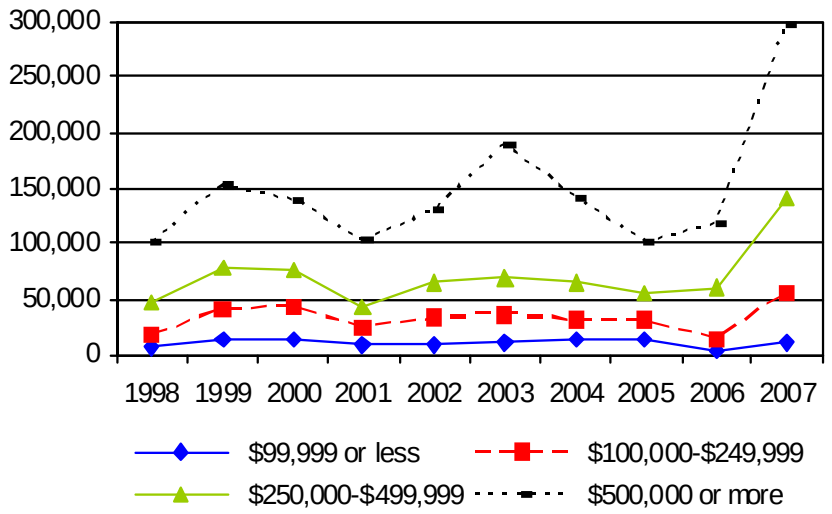


Figure 7. Median Term Debt Coverage Ratio by Farm Sales, 1998-2007, N.D. Farm Mgt Program

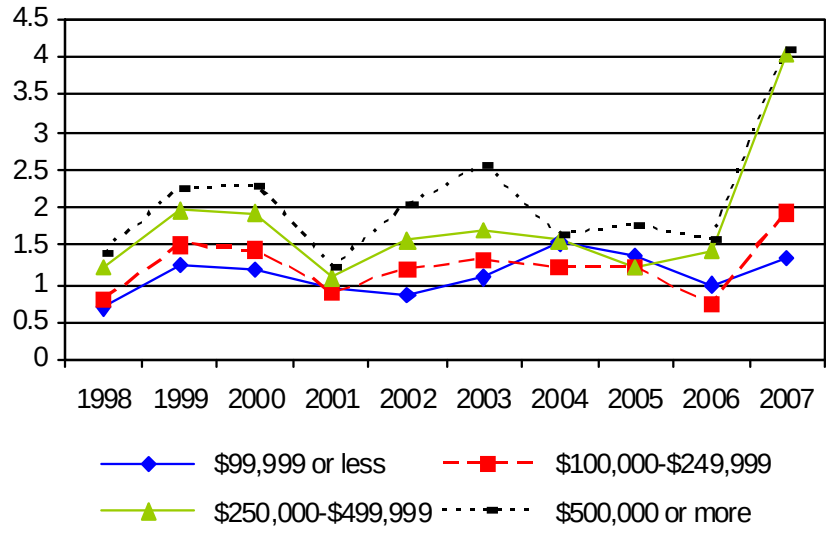
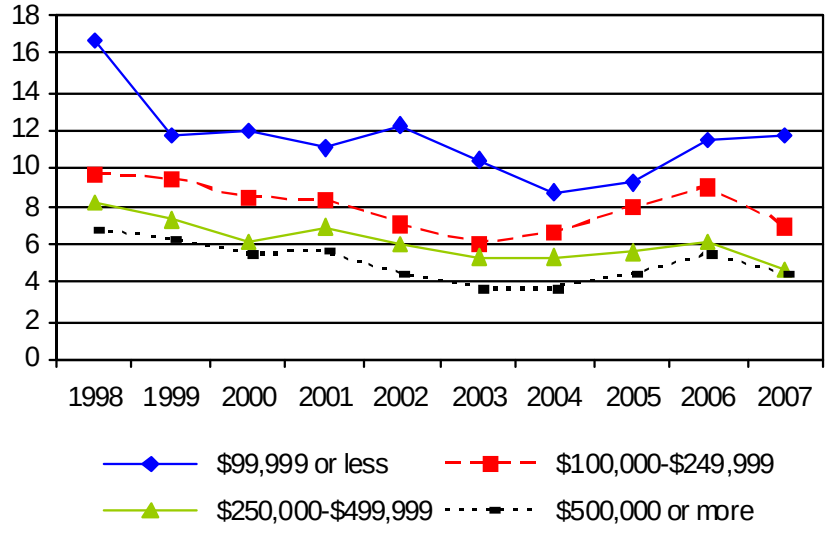


Figure 8. Median Interest Expense as a Percent of Gross Revenue, by Farm Sales, 1998-2007, N.D. Farm Mgt Program



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 2007, mixed enterprise farms were slightly more likely to be larger than 2,000 acres than were crop or livestock farms.

- In 2006 and 2007, 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. Median debt-to-asset was 57% for farms less than 2,000 acres and 45% for larger sized farms in 2007.

- In 2007, median net farm income was $85,849 for farms with less than 2,000 acres and $191,454 for farms with more than 2,000 acres. Historically, farms with more than 2,000 acres have about twice the net farm income of the small farm group.

- Median current ratio in 2007 was 1.8 for farms larger than 2000 acres and 1.6 for farms with less than 2000 acres. The five year average, 2002-2006, median current ratio was 1.3 for both farm size groups.

- Median term debt coverage ratio in 2007, 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:

- Ownership of crop land is less likely in the Red River Valley. About 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 2007, farmers 50 years or older were over three times 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 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 1998 to 2007 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 crop land ownership typically have better solvency. In 2007, median debt-to-asset ratio was 58.3% for farms with no crop land ownership, 52.9% for farms with 1-20% crop land ownership, 49.7% for farms with 21-40% crop land ownership, and 45.5% 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 2007, median net farm income ranged from $187,078 for farms with 1 to 20% crop land ownership to $78,051 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, 1998-2007, N.D. Farm Mgt Program

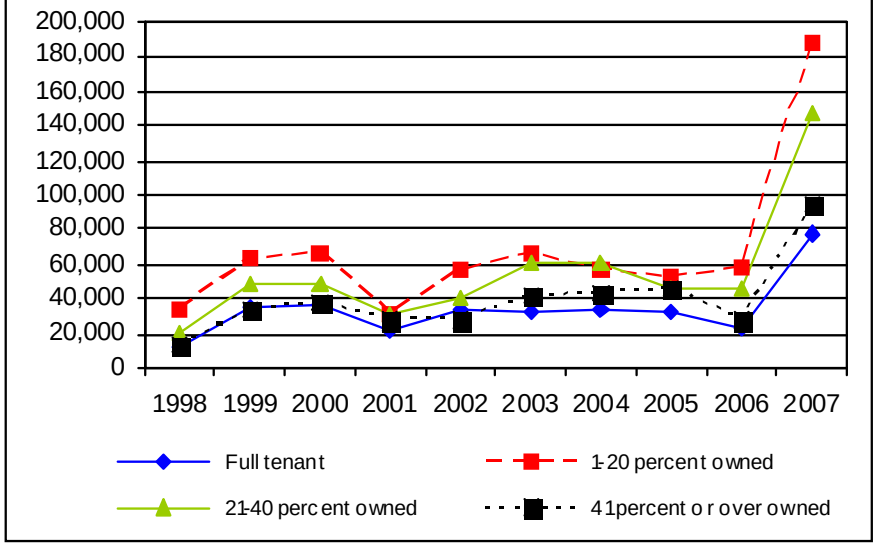


Figure 10. Median Asset Turnover Ratio by Crop Land Tenure, 1998-2007, N.D. Farm Mgt Progam

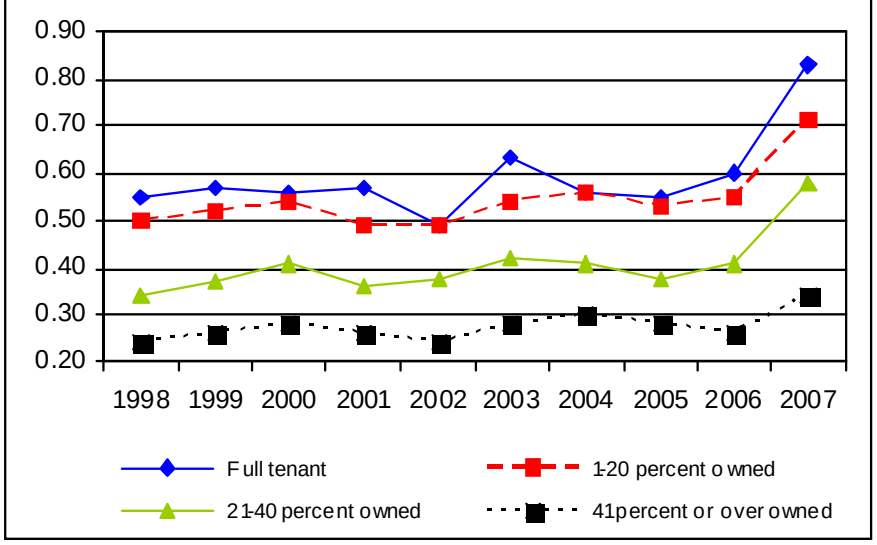


Figure 11. Median Net Farm Income by Debt-to-Asset Group, 1998-2007, N.D. Farm Mgt Program

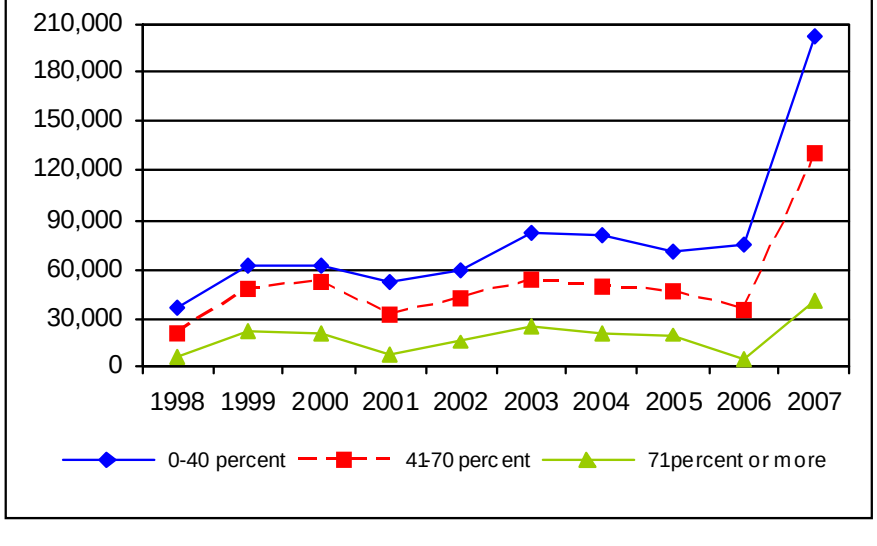
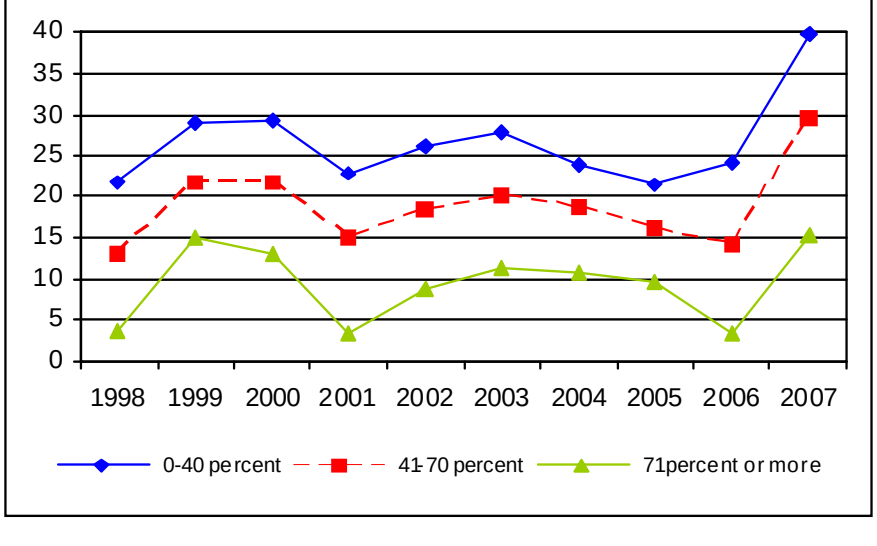


Figure 12. Median Net Farm Income as a Percent of Gross Revenue by Dept-to-Asset Group, 1998-2007, N.D. Farm Mgt Program



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 over 60% the past 10 years. Volatility is less when all farms are grouped together. Statewide, the median net farm income 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 1998-2007 period was $127,791 in 2007 followed by $49,181 in 2003. The lowest was $19,491 in 1998.

- The Red River Valley region had the highest median net farm income every year from 1998 to 2007, except for 1998, 2005, and 2007. The west region farms had the lowest median net farm income five of the ten years.

- Typically, crop farms have been more profitable than livestock farms. In 2007, 74% of crop farms had net farm income greater than $50,000 compared to 16% of livestock farms. About one-half of livestock farms earned less than $20,000.

- As expected, net farm income is strongly associated with farm sales and farm size. In 2007, 80% 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. Three-fourths of farms larger than 2,000 acres had net farm income greater than $100,000, compared less than one-half of smaller farms.

- In all years, from 1998 to 2007 except for two, farmers 40 to 49 years old had higher median net farm income than farmers that were younger or older. The exceptions were older farmers in 2006, and younger farmers in 1998.

- 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 $50,000 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 50.0% in 2007, from 57.5% in 2006 after ranging from 53.3% to 55.5% between the years 1999 to 2005.

- The median debt-to-asset of farms in the central regions was the best in 2007, 49%, compared to other regions. However, the Red River Valley had the best solvency from 1998 to 2006.

- Crop farms had the best solvency (lowest debt-to-asset) than other 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 1998-2007 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 2007, farms in the low, medium and high debt-to-asset categories had median current ratios of 3.4, 1.6 and 1.1; term debt coverage ratios of 5.7, 3.1 and 1.5; interest expense as a percent of gross revenue of 3.8, 5.5 and 9.1; and net farm income as percent of gross revenue of 39.8, 29.6 and 15.3, respectively. Nearly all of these numbers are the high over the 1998-2007 period for the respective debt-to-asset categories.

- In 2007, farms with sales less than $100,000 are 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.

- Median net farm income for the low, medium, and high debt-to-asset categories in 2007 were ten year highs, $202,336, $130,247 and $40,625, for the respective categories.

- In 2007, 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 2007, 30% of farm operators were under 40 years old and 31% were 40 to 49 years old. The percent of farmers 50 and older has steadily increased from 19% in 1996 to 39% in 2007.

- Prior to 1999, the age of farmers tended to increase slightly from east to west, but from 1999 to 2007 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. 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 1998-2007 period was achieved for each age group. It was $76,204 for farmers under 40 years old, $164,243 for farmers 40-49 years old, and $134,492 for farmers older than 50 years.

- Median total assets were lowest, 1998-2007, 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 2007, median debt-to-asset was 62.7% for farmers less than 40 years old, 52.8% for farmers in the 40 to 49 age group and 40.2% for farmers 50 or older.

- Median current ratio is similar between age groups. The five-year average, 2002-2006, median current ratio was 1.4 for farmers older than 50 years and 1.3 for the middle and young age groups.

- In each year, 1998-2007, 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, 2007, N.D. Farm Mgt Program

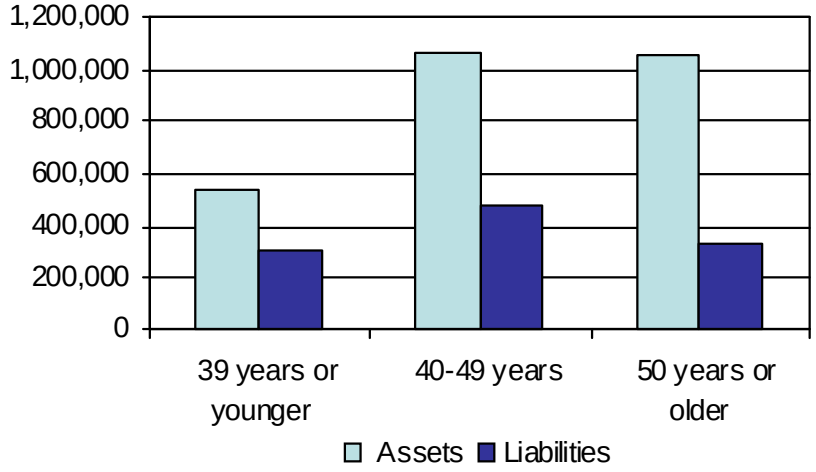


Figure 14. Median Net Farm Income by Farmer Age, 1998-2007, N.D. Farm Mgt Program

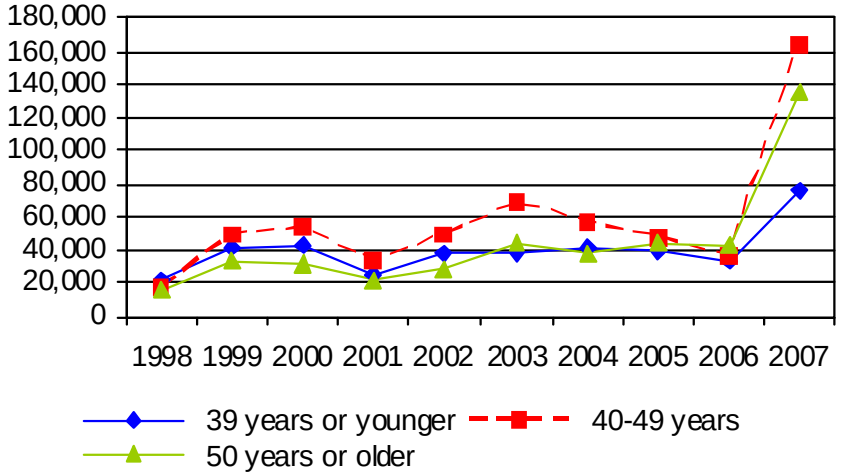


Figure 15. Median Term Debt Coverage by Farmer Age, 1998-2007, N.D. Farm Mgt Program

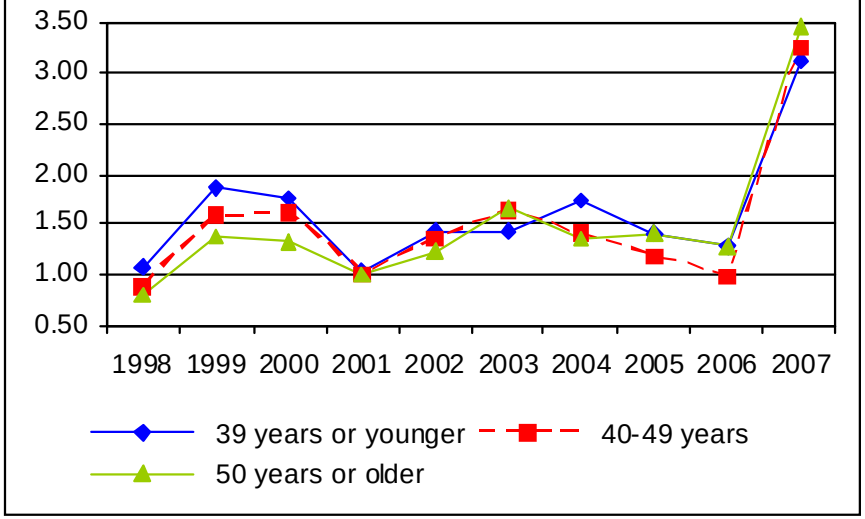


Figure 16. Median Net Farm Income as a Percent of Gross Revenue by Farmer Age, 1998-2007, N.D. Farm Mgt Program

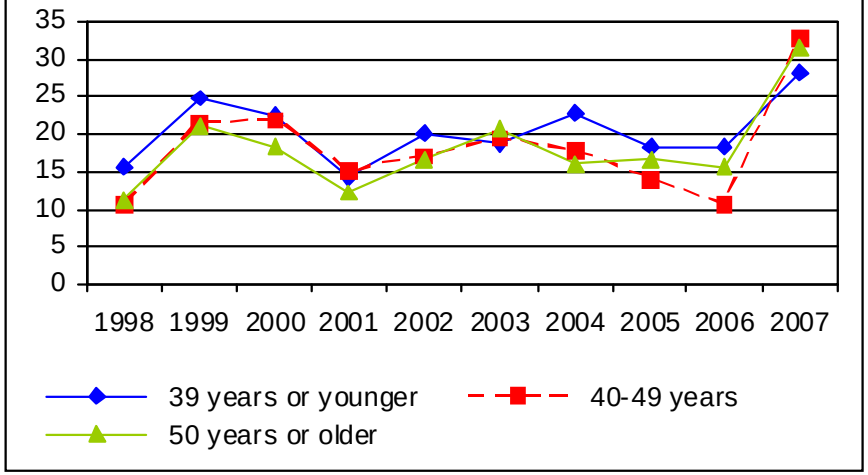


TABLE 3. CURRENT ASSETS AND CURRENT LIABILITIES, QUARTILE VALUES FOR 2007, MEDIAN VALUES FOR 2006, AND 5-YEAR AVERAGE, 2002-2006, OF MEDIAN VALUES, NORTH DAKOTA FARM BUSINESS MANAGEMENT EDUCATION PROGRAM PARTICIPANTS

Farm Group	2007 Upper Quartile	2007 Lower Quartile	2007 Median	2006 Median	Average of 2002-2006 Medians	2007 Upper Quartile	2007 Lower Quartile	2007 Median	2006 Median	Average of 2002-2006 Medians
	Current Farm Assets ($)					Current Farm Liabilities ($)				
All Farms	493,571	138,713	267,746	183,276	170,924	62,622	237,979	138,121	124,239	113,203
Region										
Red River Valley	614,388	144,198	347,877	285,627	262,204	80,329	308,278	168,155	158,452	146,039
North Central	451,979	156,403	267,186	172,885	161,450	64,379	225,761	133,319	129,803	115,201
South Central	479,001	133,332	258,562	178,120	164,319	68,151	238,103	138,121	115,529	103,247
West	430,702	83,868	216,841	127,451	144,168	39,310	205,737	90,935	92,751	87,211
Farm Enterprise										
Crop	542,480	189,818	330,574	224,781	201,962	73,849	261,274	156,310	148,695	131,704
Livestock	227,670	71,925	146,147	107,449	106,462	39,310	165,107	84,787	69,586	65,509
Mixed	357,430	89,072	192,460	140,598	148,708	50,184	213,136	134,455	120,155	109,189
Farm Sales										
$99,999 or less	66,689	21,909	45,822	43,646	44,804	15,041	45,051	27,464	32,159	32,769
$100,000-$249,999	205,221	87,664	141,061	107,449	115,434	48,806	127,904	85,670	97,154	90,278
$250,00-$499,999	374,638	199,618	292,678	245,383	228,221	83,402	199,804	148,507	159,373	153,313
$500,000 or more	824,554	403,568	579,630	494,040	473,041	164,573	448,521	262,106	328,295	277,830
Farm Size										
1,999 acres or less	314,582	77,600	173,313	112,887	107,371	40,738	159,298	87,256	94,037	82,696
2,000 acres or more	654,718	217,563	397,828	262,368	240,617	104,628	328,588	185,985	185,069	156,896
Cropland Tenure										
Full tenant	286,106	76,243	170,142	96,721	111,686	29,411	156,126	80,464	68,358	72,441
1-20 percent owned	604,074	214,462	378,843	251,694	218,297	102,029	332,919	180,702	192,575	158,740
21-40 percent owned	578,402	199,078	338,298	245,523	219,894	94,521	258,735	175,780	157,609	136,442
41 percent or more owned	434,452	113,373	233,296	160,759	151,027	53,733	197,741	111,106	108,833	90,896
Net Farm Income										
$19,999 or less	111,874	31,648	64,251	93,041	85,554	20,260	115,409	53,822	102,853	86,465
$20,000-$49,999	169,251	51,395	104,780	150,236	133,990	35,528	135,063	59,845	111,072	95,026
$50,000-$99,999	270,017	128,152	180,970	244,799	212,220	72,432	210,170	133,048	136,444	127,823
$100,000 or more	644,361	286,392	421,500	472,279	404,807	93,757	297,337	176,427	188,310	171,116
Debt-to-Asset Ratio										
0-40 percent	653,785	224,917	365,126	274,639	243,801	36,557	191,940	104,123	82,409	78,172
41-70 percent	464,485	156,116	267,746	192,210	177,892	89,611	284,529	168,155	160,399	134,400
71 percent or more	241,752	62,868	122,352	119,793	114,303	58,373	212,714	123,106	141,323	127,930
Farmer Age										
39 years or younger	288,654	75,684	164,449	116,605	129,599	37,085	158,829	86,267	95,607	90,696
40-49 years	610,053	200,348	396,800	254,416	226,177	97,994	346,764	186,479	183,926	146,343
50 years or older	530,348	171,765	314,582	203,716	169,742	62,644	231,096	145,793	123,168	101,015

TABLE 4. LIQUIDITY MEASURES, QUARTILE VALUES FOR 2007, MEDIAN VALUES FOR 2006, AND 5-YEAR AVERAGE, 2002-2006, OF MEDIAN VALUES, NORTH DAKOTA FARM BUSINESS MANAGEMENT EDUCATION PROGRAM PARTICIPANTS.

Farm Group	2007 Upper Quartile	2007 Lower Quartile	2007 Median	2006 Median	Average of 2002-2006 Medians	2007 Upper Quartile	2007 Lower Quartile	2007 Median	2006 Median	Average of 2002-2006 Medians
	Current Ratio					Working Capital($)				
All Farms	3.0	1.2	1.7	1.2	1.3	250,485	27,090	103,063	20,660	30,509
Region										
Red River Valley	2.9	1.1	1.5	1.4	1.4	307,006	24,968	81,341	54,139	64,246
North Central	3.1	1.3	1.8	1.1	1.2	250,137	32,594	118,495	15,951	24,431
South Central	2.9	1.2	1.8	1.2	1.3	247,070	34,259	102,855	21,538	30,508
West	3.3	1.2	1.8	1.1	1.3	208,707	18,227	77,357	9,266	24,515
Farm Enterprise										
Crop	3.3	1.4	1.9	1.2	1.3	303,798	49,592	144,369	23,575	33,914
Livestock	2.2	1.1	1.5	1.3	1.4	107,279	6,715	38,304	17,704	29,144
Mixed	2.1	1.0	1.3	1.2	1.3	177,605	4,434	48,000	15,618	25,811
Farm Sales										
$99,999 or less	2.2	0.9	1.4	1.3	1.3	25,582	-3,224	12,165	8,498	10,364
$100,000-$249,999	2.7	1.1	1.5	1.1	1.3	99,775	4,182	44,442	7,502	21,862
$250,000-$499,999	3.0	1.4	1.8	1.2	1.3	228,683	58,632	127,864	54,188	55,159
$500,000 or more	3.3	1.4	1.9	1.3	1.5	505,839	118,877	266,699	90,314	139,195
Farm Size										
1,999 acres or less	2.9	1.1	1.6	1.2	1.3	148,879	11,413	55,989	15,206	19,061
2,000 acres or more	3.1	1.4	1.8	1.2	1.3	349,726	69,188	175,945	39,317	55,109
Cropland Tenure										
Full tenant	3.0	1.2	1.7	1.2	1.3	148,879	16,554	51,760	8,622	17,839
1-20 percent owned	2.9	1.3	1.8	1.1	1.2	305,906	55,685	162,052	22,274	37,169
21-40 percent owned	3.0	1.2	1.8	1.2	1.3	306,779	45,350	139,756	30,942	40,558
41 percent or more owned	3.4	1.2	1.7	1.3	1.4	236,415	18,304	80,642	27,144	35,310
Net Farm Income										
$19,999 or less	1.6	0.8	1.1	0.9	1.0	22,896	-15,809	3,324	-12,448	-3,691
$20,000-$49,999	1.9	1.0	1.3	1.2	1.3	51,732	1,797	18,039	21,264	22,926
$50,000-$99,999	1.8	1.1	1.3	1.3	1.4	77,630	14,008	46,328	54,238	57,470
$100,000 or more	3.6	1.6	2.2	2.0	2.1	351,720	110,502	210,487	213,815	182,771
Debt-to-Asset Ratio										
0-40 percent	6.2	2.2	3.4	3.1	2.8	476,143	129,915	260,174	153,737	140,350
41-70 percent	2.0	1.2	1.6	1.1	1.3	184,765	33,831	97,337	18,811	29,451
71 percent or more	1.4	0.9	1.1	0.9	0.9	45,218	-11,435	12,634	-12,996	-5,535
Farmer Age										
39 years or younger	3.0	1.1	1.6	1.2	1.3	151,696	9,298	52,542	14,398	23,881
40-49 years	2.8	1.2	1.7	1.1	1.3	297,046	49,989	154,763	15,778	36,947
50 years or older	3.6	1.3	1.8	1.3	1.4	307,471	36,300	133,459	39,775	38,252

TABLE 5. TOTAL ASSETS AND TOTAL LIABILITIES, QUARTILE VALUES FOR 2007, MEDIAN VALUES FOR 2006, AND 5-YEAR AVERAGE, 2002-2006, OF MEDIAN VALUES, NORTH DAKOTA FARM BUSINESS MANAGEMENT EDUCATION PROGRAM PARTICIPANTS

Farm Group	2007 Upper Quartile	2007 Lower Quartile	2007 Median	2006 Median	Average of 2002-2006 Medians	2007 Upper Quartile	2007 Lower Quartile	2007 Median	2006 Median	Average of 2002-2006 Medians
	Total Farm Assets($)					Total Farm Liabilities($)				
All Farms	1,360,414	524,377	810,426	688,802	642,720	206,698	608,597	371,180	348,102	320,132
Region										
Red River Valley	1,919,299	597,209	1,074,880	1,009,853	924,759	231,793	743,478	464,105	420,597	390,237
North Central	1,316,755	546,386	821,509	688,852	630,614	220,890	599,867	376,520	367,556	330,109
South Central	1,406,790	517,148	729,034	644,343	590,324	206,301	576,850	328,729	306,355	292,593
West	1,203,666	347,321	721,027	559,489	553,062	158,059	575,547	336,936	302,913	276,908
Farm Enterprise										
Crop	1,513,543	576,032	905,581	789,569	717,279	231,985	631,627	407,129	376,136	343,263
Livestock	841,528	377,280	631,933	550,431	523,363	148,148	474,685	268,800	235,266	249,536
Mixed	1,231,798	431,760	753,276	630,912	584,795	195,234	627,466	382,080	357,036	309,039
Farm Sales										
$99,999 or less	357,875	119,351	211,973	244,162	265,474	49,489	188,899	127,586	152,132	145,732
$100,000-$249,999	679,459	385,670	540,672	499,887	485,597	159,888	389,525	271,732	270,119	260,921
$250,000-$499,999	1,161,093	622,074	810,426	827,894	798,107	233,590	499,862	356,255	402,796	376,452
$500,000 or more	2,324,020	1,162,250	1,634,051	1,626,844	1,497,312	451,890	948,391	669,496	737,775	649,399
Farm Size										
1,999 acres or less	837,119	333,466	576,734	478,038	464,103	157,731	425,255	280,019	239,395	235,090
2,000 acres or more	1,822,973	756,865	1,194,172	1,018,755	880,662	298,898	787,473	511,976	471,003	416,177
Cropland Tenure										
Full tenant	681,162	207,452	414,081	302,211	335,001	97,339	345,395	177,576	163,663	191,023
1-20 percent owned	1,330,541	631,262	893,366	742,835	685,487	311,207	734,855	475,715	419,910	380,642
21-40 percent owned	1,826,096	670,224	1,089,917	874,734	801,658	300,765	734,723	465,635	404,992	380,853
41 percent or more owned	1,405,104	591,494	922,010	780,224	724,298	209,778	550,149	343,675	345,475	315,344
Net Farm Income										
$19,999 or less	632,794	184,570	399,410	489,453	439,338	126,427	470,619	217,655	310,690	265,514
$20,000-$49,999	687,506	306,810	474,292	571,221	519,130	128,432	382,988	238,291	297,699	284,988
$50,000-$99,999	960,760	440,502	655,711	780,224	726,011	232,178	613,601	363,135	355,640	335,869
$100,000 or more	1,824,058	729,325	1,169,532	1,519,757	1,326,433	265,098	673,986	442,926	467,682	435,738
Debt-to-Asset Ratio										
0-40 percent	1,875,881	673,972	1,149,451	1,017,694	905,975	132,301	433,777	251,953	200,366	187,351
41-70 percent	1,253,975	541,700	796,720	713,898	671,206	289,747	707,405	461,208	399,358	368,968
71 percent or more	782,601	279,408	538,710	527,350	478,498	240,428	665,410	456,979	450,673	408,627
Farmer Age										
39 years or younger	781,848	255,703	539,234	473,306	469,349	144,128	468,246	309,671	297,833	273,566
40-49 years	1,660,376	670,713	1,068,841	860,456	782,028	303,543	820,113	475,170	462,444	398,787
50 years or older	1,645,977	615,991	1,055,175	814,843	696,092	206,048	607,411	333,665	307,195	287,001

TABLE 6. SOLVENCY MEASURES, QUARTILE VALUES FOR 2007, MEDIAN VALUES FOR 2006, AND 5-YEAR AVERAGE, 2002-2006, OF MEDIAN VALUES, NORTH DAKOTA FARM BUSINESS MANAGEMENT EDUCATION PROGRAM PARTICIPANTS.

	2007				Average of	2007				Average of	2007				Average of
Farm Group	Upper Quartile	Lower Quartile	Median	2006 Median	2002-2006 Medians	Upper Quartile	Lower Quartile	Median	2006 Median	2002-2006 Medians	Upper Quartile	Lower Quartile	Median	2006 Median	2002-2006 Medians
	Debt-to-Asset (%)					Equity-to-Asset (%)					Debt-to-Equity				
All Farms	31.7	67.6	50.0	57.5	54.8	68.3	32.4	50.0	42.5	45.2	0.5	2.1	1.0	1.4	1.2
Region															
Red River Valley	30.4	68.2	51.2	49.3	48.7	69.6	31.8	48.8	50.7	51.3	0.4	2.1	1.0	1.0	0.9
North Central	33.6	67.0	48.9	58.1	56.5	66.4	33.0	51.1	41.9	43.5	0.5	2.0	1.0	1.4	1.3
South Central	29.0	66.1	49.3	56.3	53.7	71.0	33.9	50.7	43.7	46.3	0.4	1.9	1.0	1.3	1.2
West	35.0	74.1	55.0	59.8	59.6	65.0	25.9	45.0	40.2	40.4	0.5	2.9	1.2	1.5	1.5
Farm Enterprise															
Crop	29.6	65.0	47.7	56.3	52.6	70.4	35.0	52.3	43.7	47.4	0.4	1.9	0.9	1.3	1.1
Livestock	35.7	74.1	59.0	57.5	57.8	64.3	25.9	41.0	42.5	42.2	0.6	2.9	1.4	1.4	1.4
Mixed	39.2	70.5	57.0	62.7	59.8	60.8	29.5	43.0	37.3	40.2	0.6	2.4	1.3	1.7	1.5
Farm Sales															
$99,999 or less	43.9	80.0	63.8	69.2	63.4	56.1	20.0	36.2	30.8	36.6	0.8	4.0	1.8	2.2	1.7
$100,000-$249,999	37.6	76.4	57.8	61.8	59.3	62.4	23.6	42.2	38.2	40.7	0.6	3.2	1.4	1.6	1.5
$250,000-$499,999	28.3	65.6	48.5	52.6	51.8	71.7	34.4	51.5	47.4	48.2	0.4	1.9	0.9	1.1	1.1
$500,000 or more	30.6	60.5	45.5	51.7	46.3	69.4	39.5	54.5	48.3	53.7	0.4	1.5	0.8	1.1	0.9
Farm Size															
1,999 acres or less	32.2	70.8	56.6	60.1	58.8	67.8	29.2	43.4	39.9	41.2	0.5	2.4	1.3	1.5	1.4
2,000 acres or more	31.7	61.8	45.4	53.5	51.3	68.3	38.2	54.6	46.5	48.7	0.5	1.6	0.8	1.2	1.1
Cropland Tenure															
Full tenant	34.7	73.9	58.3	63.3	61.1	65.3	26.1	41.7	36.7	38.9	0.5	2.8	1.4	1.7	1.6
1-20 percent owned	36.8	66.5	52.9	59.7	57.2	63.2	33.5	47.1	40.3	42.8	0.6	2.0	1.1	1.5	1.3
21-40 percent owned	31.0	64.2	49.7	57.4	54.5	69.0	35.8	50.3	42.6	45.5	0.4	1.8	1.0	1.3	1.2
41 percent or more owned	24.2	65.0	45.5	50.9	49.0	75.8	35.0	54.5	49.1	51.0	0.3	1.9	0.8	1.0	1.0
Net Farm Income															
$19,999 or less	55.1	88.8	73.9	72.4	70.3	44.9	11.2	26.1	27.6	29.7	1.2	7.9	2.8	2.6	2.4
$20,000-$49,999	40.3	74.1	56.9	57.6	58.6	59.7	25.9	43.1	42.4	41.4	0.7	2.9	1.3	1.4	1.4
$50,000-$99,999	46.9	72.4	61.6	50.4	49.9	53.1	27.6	38.4	49.6	50.1	0.9	2.6	1.6	1.0	1.0
$100,000 or more	27.1	58.4	41.7	35.7	37.9	72.9	41.6	58.3	64.3	62.1	0.4	1.4	0.7	0.6	0.6
Debt-to-Asset Ratio															
0-40 percent	16.5	33.5	25.8	26.6	25.0	83.5	66.5	74.2	73.4	75.0	0.2	0.5	0.3	0.4	0.3
41-70 percent	48.2	63.2	55.9	57.4	55.9	51.8	36.8	44.1	42.6	44.1	0.9	1.7	1.3	1.3	1.3
71 percent or more	75.9	89.6	82.0	83.0	83.0	24.1	10.4	18.0	17.0	17.0	3.1	8.6	4.6	4.9	4.9
Farmer Age															
39 years or younger	44.5	74.8	62.7	67.8	64.8	55.5	25.2	37.3	32.2	35.2	0.8	3.0	1.7	2.1	1.8
40-49 years	36.9	67.9	52.8	58.6	54.5	63.1	32.1	47.2	41.4	45.5	0.6	2.1	1.1	1.4	1.2
50 years or older	22.1	55.0	40.2	45.7	46.1	77.9	45.0	59.8	54.3	53.9	0.3	1.2	0.7	0.8	0.9

TABLE 7. RATE OF RETURN ON ASSETS AND RATE OF RETURN ON EQUITY PROFITABILITY MEASURES, QUARTILE VALUES FOR 2007, MEDIAN VALUES FOR 2006, AND 5-YEAR AVERAGE, 2002-2006, OF MEDIAN VALUES NORTH DAKOTA FARM BUSINESS MANAGEMENT EDUCATION PROGRAM PARTICIPANTS.

Farm Group	2007 Upper Quartile	2007 Lower Quartile	2007 Median	2006 Median	Average of 2002-2006 Medians	2007 Upper Quartile	2007 Lower Quartile	2007 Median	2006 Median	Average of 2002-2006 Medians
	Return on Farm Assets(%)					Return on Equity(%)				
All Farms	25.9	7.9	15.7	4.7	5.7	53.0	9.3	25.3	2.4	5.2
Region										
Red River Valley	18.0	8.8	12.0	9.2	8.2	33.2	10.2	17.3	10.7	10.3
North Central	27.5	9.7	18.6	4.4	5.2	57.1	14.9	34.2	1.9	4.7
South Central	28.8	7.6	18.3	4.2	5.5	56.9	9.5	26.9	1.5	5.2
West	21.9	3.8	11.0	-0.6	3.8	45.3	0.0	15.1	-6.0	2.3
Farm Enterprise										
Crop	30.9	12.2	20.0	6.6	6.9	63.0	17.2	37.0	6.5	7.4
Livestock	9.4	0.2	4.1	0.5	4.0	15.1	-12.2	3.5	-5.3	2.2
Mixed	13.0	4.1	8.4	2.7	4.2	25.7	2.6	11.0	0.0	3.2
Farm Sales										
$99,999 or less	10.5	-5.3	3.0	1.4	2.3	15.1	-22.1	0.3	0.0	-0.4
$100,000-$249,999	19.4	4.1	10.7	1.3	4.4	52.9	0.2	15.4	-1.2	3.2
$250,000-$499,999	27.0	11.6	18.1	5.9	6.7	53.2	16.3	29.4	5.7	7.4
$500,000 or more	29.6	11.1	19.4	7.1	7.9	54.2	15.0	31.3	8.5	10.0
Farm Size										
1,999 acres or less	24.1	6.4	13.9	5.0	5.1	54.9	6.3	22.5	2.1	3.9
2,000 acres or more	26.6	9.3	17.7	4.4	6.2	51.3	12.3	27.8	2.7	6.5
Cropland Tenure										
Full tenant	41.5	8.6	19.3	5.8	6.2	86.7	5.9	38.7	1.5	5.2
1-20 percent owned	30.8	12.1	20.2	6.2	7.0	64.3	21.9	39.4	6.1	8.3
21-40 percent owned	24.3	8.7	17.8	5.2	5.9	50.4	10.9	27.3	3.8	5.5
41 percent or more owned	16.0	5.2	10.5	2.9	4.7	25.6	4.6	14.9	1.0	4.0
Net Farm Income										
$19,999 or less	2.0	-5.1	-0.5	-1.9	-1.1	-2.0	-44.3	-13.0	-13.9	-9.7
$20,000-$49,999	10.3	4.1	6.6	5.1	4.9	16.7	2.6	6.1	2.2	3.5
$50,000-$99,999	16.2	7.5	10.9	7.6	8.3	47.9	9.7	20.4	8.5	10.4
$100,000 or more	31.4	15.1	22.6	11.1	11.6	63.5	21.5	39.4	15.8	16.5
Debt-to-Asset Ratio										
0-40 percent	29.2	10.6	16.8	6.6	6.9	38.2	12.0	20.9	6.7	7.2
41-70 percent	28.0	8.5	18.4	5.1	6.0	62.9	11.8	33.9	3.2	6.4
71 percent or more	16.8	2.2	9.4	0.8	3.2	73.3	-15.3	23.3	-9.1	-1.8
Farmer Age										
39 years or younger	32.3	8.2	17.2	5.9	7.1	83.2	9.9	40.7	6.2	9.1
40-49 years	27.2	9.8	17.2	4.4	5.9	59.5	15.9	31.5	0.7	5.5
50 years or older	22.3	6.0	12.9	4.1	4.5	33.9	4.8	16.9	2.2	3.5

TABLE 8. OPERATING PROFIT MARGIN AND NET FARM INCOME PROFITABILITY MEASURES, QUARTILE VALUES FOR 2007, MEDIAN VALUES FOR 2006, AND 5-YEAR AVERAGE, 2002-2006, OF MEDIAN VALUES, NORTH DAKOTA FARM BUSINESS MANAGEMENT PROGRAM PARTICIPANTS.

Farm Group	2007 Upper Quartile	2007 Lower Quartile	2007 Median	2006 Median	Average of 2002-2006 Medians	2007 Upper Quartile	2007 Lower Quartile	2007 Median	2006 Median	Average of 2002-2006 Medians
	Operating Profit Margin(%)					Net Farm Income($)				
All Farms	38.4	17.8	29.3	12.2	14.4	255,296	51,723	127,791	35,980	42,088
Region										
Red River Valley	31.3	15.9	21.4	19.7	17.4	261,583	64,806	115,712	83,970	78,252
North Central	39.7	20.6	31.0	12.1	13.6	254,292	62,075	157,109	34,777	40,175
South Central	40.7	20.7	31.5	11.1	14.1	277,413	53,988	127,790	32,576	41,096
West	38.4	12.8	27.3	-1.7	10.6	173,807	29,299	77,136	689	28,479
Farm Enterprise										
Crop	41.1	21.4	32.2	13.2	14.0	306,301	96,862	171,838	53,642	55,584
Livestock	29.6	1.2	18.8	2.7	14.7	70,835	2,893	25,531	6,151	24,979
Mixed	34.2	14.2	24.1	9.6	13.2	121,880	30,729	65,303	24,334	31,905
Farm Sales										
$99,999 or less	27.6	-15.6	7.3	8.8	10.5	27,737	-2,700	11,850	5,563	10,625
$100,000-$249,999	35.1	12.0	24.5	4.9	12.3	98,245	25,584	56,641	14,107	29,345
$250,000-$499,999	39.8	23.2	31.9	13.6	15.8	203,316	103,052	141,913	60,175	63,438
$500,000 or more	40.7	20.7	31.7	15.1	16.7	457,364	165,611	296,677	119,008	135,582
Farm Size										
1,999 acres or less	37.7	13.7	26.4	12.2	13.1	146,248	30,169	85,849	27,950	29,503
2,000 acres or more	39.6	21.5	31.1	12.1	15.5	361,152	94,524	191,454	49,897	59,476
Cropland Tenure										
Full tenant	36.2	12.8	23.8	7.7	10.9	151,444	23,017	78,051	23,537	30,959
1-20 percent owned	37.9	19.6	31.3	12.1	13.5	363,882	96,663	187,078	58,022	58,473
21-40 percent owned	41.1	20.7	30.9	13.4	14.6	306,520	78,755	147,870	45,689	50,725
41 percent or more owned	39.2	19.4	30.2	12.5	17.1	186,332	38,476	94,382	28,168	37,033
Net Farm Income										
$19,999 or less	6.2	-19.1	-1.9	-6.4	-3.1	10,232	-13,319	16	-6,694	687
$20,000-$49,999	28.0	12.4	20.4	13.0	12.9	41,381	29,568	35,241	34,262	33,938
$50,000-$99,999	27.6	16.7	22.3	16.5	19.1	86,937	62,793	74,875	69,108	69,661
$100,000 or more	42.8	29.2	35.6	24.7	26.0	350,025	146,248	217,923	156,329	149,459
Debt-to-Asset Ratio										
0-40 percent	43.4	25.6	35.6	18.9	18.6	347,906	109,441	202,336	75,755	74,100
41-70 percent	37.5	18.8	29.5	12.5	15.3	246,546	65,273	130,247	35,883	45,726
71 percent or more	27.3	5.1	18.2	1.4	7.4	95,216	7,357	40,625	4,507	17,517
Farmer Age										
39 years or younger	34.7	15.2	27.6	13.8	15.6	153,758	29,502	76,204	32,664	38,274
40-49 years	38.6	21.0	30.4	9.3	13.4	346,538	94,145	164,243	35,883	51,559
50 years or older	39.2	16.8	29.8	12.9	13.9	274,157	50,865	134,921	42,770	39,796

TABLE 9. REPAYMENT CAPACITY MEASURES, QUARTILE VALUES FOR 2007, MEDIAN VALUES FOR 2006, AND 5-YEAR AVERAGE, 2002-2006, OF MEDIAN VALUES, NORTH DAKOTA FARM BUSINESS MANAGEMENT EDUCATION PROGRAM PARTICIPANTS.

Farm Group	2007 Upper Quartile	2007 Lower Quartile	2007 Median	2006 Median	Average of 2002-2006 Medians	2007 Upper Quartile	2007 Lower Quartile	2007 Median	2006 Median	Average of 2002-2006 Medians
	Term Debt Coverage Ratio					Term Debt and Capital Repayment Margin($)				
All Farms	6.18	1.62	3.28	1.15	1.38	215,139	23,754	86,825	5,378	13,176
Region										
Red River Valley	5.85	1.59	3.26	2.16	1.89	214,921	24,507	75,326	52,314	39,839
North Central	6.25	1.70	3.67	1.13	1.22	216,507	27,531	115,234	5,123	6,894
South Central	7.74	2.02	3.64	1.13	1.53	235,400	36,563	85,344	2,895	17,014
West	4.25	1.15	2.18	0.56	1.14	162,320	3,696	38,778	-14,432	5,189
Farm Enterprise										
Crop	8.26	2.38	4.32	1.52	1.54	266,317	60,700	124,560	17,616	20,051
Livestock	2.10	0.77	1.28	0.79	1.23	36,420	-5,971	11,721	-5,130	6,873
Mixed	3.70	1.20	2.12	0.71	1.17	75,474	6,378	36,455	-12,464	4,923
Farm Sales										
$99,999 or less	2.49	0.59	1.35	0.99	1.17	14,111	-13,402	4,865	-367	2,495
$100,000-$249,999	4.00	1.17	1.94	0.73	1.13	71,002	6,421	28,383	-9,126	4,957
$250,000-$499,999	7.32	2.41	4.03	1.44	1.51	170,424	65,757	105,960	17,214	25,046
$500,000 or more	7.88	2.32	4.10	1.59	1.92	400,400	91,520	240,693	56,093	69,521
Farm Size										
1,999 acres or less	6.15	1.46	2.74	1.15	1.31	109,755	13,308	52,028	3,441	8,064
2,000 acres or more	6.19	1.90	3.73	1.15	1.47	297,982	48,726	149,870	7,345	22,287
Cropland Tenure										
Full tenant	9.99	1.63	3.65	1.55	1.49	121,361	11,721	63,856	12,359	9,957
1-20 percent owned	6.13	2.00	4.17	1.15	1.37	283,349	58,438	154,991	7,395	15,467
21-40 percent owned	6.33	1.88	3.52	1.20	1.44	261,859	43,361	117,374	10,652	18,441
41 percent or more owned	4.40	1.38	2.27	1.02	1.31	146,165	14,111	52,735	146	12,235
Net Farm Income										
$19,999 or less	1.51	0.22	0.95	0.35	0.52	7,689	-20,844	-2,419	-24,003	-15,990
$20,000-$49,999	2.47	1.12	1.58	1.15	1.16	27,614	4,969	14,501	6,225	5,820
$50,000-$99,999	2.97	1.41	1.96	1.66	1.71	55,777	25,536	42,486	29,889	31,241
$100,000 or more	8.62	3.22	4.87	2.96	2.87	299,551	101,817	181,121	103,283	98,692
Debt-to-Asset Ratio										
0-40 percent	9.99	3.26	5.67	2.68	2.68	314,621	75,020	162,320	54,233	47,251
41-70 percent	5.14	1.61	3.06	1.09	1.32	194,399	31,978	89,858	3,063	12,359
71 percent or more	2.39	0.99	1.53	0.58	0.82	50,775	-275	19,518	-19,824	-8,395
Farmer Age										
39 years or younger	7.55	1.49	3.11	1.29	1.46	139,852	13,228	50,545	8,022	13,460
40-49 years	5.40	1.64	3.26	0.97	1.31	274,666	43,361	117,486	-854	13,641
50 years or older	6.52	1.70	3.44	1.27	1.39	243,697	30,199	91,547	11,104	13,582

TABLE 10. ASSET TURNOVER AND OPERATING EXPENSE AND DEPRECIATION EXPENSE EFFICIENCY MEASURES (AS A PERCENTAGE OF GROSS FARM INCOME), QUARTILE VALUES FOR 2007, MEDIAN VALUES FOR 2006, AND 5-YEAR AVERAGE, 2002-2006, OF MEDIAN VALUES, FARM BUSINESS MANAGEMENT EDUCATION PROGRAM PARTICIPANTS.

	2007				Average of	2007				Average of	2007				Average of
Farm Group	Upper Quartile	Lower Quartile	Median	2006 Median	2002-2006 Medians	Upper Quartile	Lower Quartile	Median	2006 Median	2002-2006 Medians	Upper Quartile	Lower Quartile	Median	2006 Median	2002-2006 Medians
	Asset Turnover					Operating Expense(%)					Depreciation Expense (%)				
All Farms	.78	.36	.56	.38	.39	49.8	68.8	58.2	72.5	69.7	2.4	7.3	4.3	5.6	5.8
Region															
Red River Valley	.75	.45	.55	.53	.48	55.7	74.0	64.9	67.7	69.2	3.1	6.7	4.9	5.1	5.2
North Central	.82	.41	.60	.39	.40	49.7	66.4	56.1	72.6	70.2	2.0	6.4	3.6	4.9	5.2
South Central	.80	.32	.58	.38	.39	47.6	65.4	55.4	72.6	69.0	2.1	7.1	4.3	6.7	7.0
West	.60	.26	.42	.27	.31	49.5	66.7	59.4	79.0	69.7	2.8	10.3	6.3	8.7	7.2
Farm Enterprise															
Crop	.88	.50	.65	.48	.47	48.8	66.0	55.4	71.9	70.4	2.4	5.9	4.0	5.1	5.6
Livestock	.36	.19	.26	.21	.25	57.8	77.1	64.3	73.4	65.8	3.4	17.8	8.6	10.2	7.3
Mixed	.48	.26	.35	.29	.32	52.1	70.2	60.6	76.1	70.6	1.3	10.5	4.4	6.0	6.5
Farm Sales															
$99,999 or less	.52	.16	.26	.24	.24	48.2	76.8	59.1	65.8	63.0	1.8	19.4	8.7	7.3	6.9
$100,000-$249,999	.62	.27	.47	.31	.36	50.9	70.6	59.4	76.5	70.2	1.9	9.4	4.7	5.9	5.7
$250,000-$499,999	.77	.41	.60	.43	.44	50.4	65.8	56.9	72.1	69.8	2.0	6.6	4.0	5.4	5.8
$500,000 or more	.86	.48	.65	.47	.48	49.5	69.0	58.0	73.6	71.3	2.8	6.0	4.3	5.6	5.9
Farm Size															
1,999 acres or less	.82	.34	.53	.38	.38	50.8	71.3	60.0	70.6	69.2	2.0	6.7	4.2	5.5	5.8
2,000 acres or more	.75	.37	.58	.39	.40	49.6	66.4	56.3	74.0	70.0	2.6	7.6	4.6	5.7	5.9
Cropland Tenure															
Full tenant	1.38	.51	.83	.60	.57	51.8	70.8	60.8	73.0	71.4	2.0	9.4	4.3	5.0	5.5
1-20 percent owned	.90	.56	.71	.55	.53	52.4	69.6	56.5	75.3	72.7	2.6	5.9	3.8	5.0	5.2
21-40 percent owned	.67	.42	.58	.41	.40	48.0	67.9	58.0	72.1	70.2	2.5	6.2	4.5	5.5	5.8
41 percent or more owned	.48	.24	.34	.26	.27	48.1	66.4	57.5	70.8	65.2	2.0	8.8	5.0	7.2	6.6
Net Farm Income															
$19,999 or less	.40	.16	.24	.29	.32	60.5	89.8	76.8	84.1	82.3	5.5	20.2	11.4	7.9	7.5
$20,000-$49,999	.58	.26	.32	.39	.39	54.7	72.0	63.0	71.2	70.2	1.7	8.8	4.7	5.5	5.2
$50,000-$99,999	.75	.36	.50	.48	.45	58.5	71.9	65.7	70.0	66.5	2.4	7.3	4.9	4.4	5.3
$100,000 or more	.86	.48	.64	.47	.46	46.7	61.5	53.5	62.6	61.5	2.2	5.9	3.8	5.0	5.5
Debt-to-Asset Ratio															
0-40 percent	.68	.34	.49	.34	.36	45.4	60.5	52.8	65.2	64.5	2.5	7.2	4.6	6.5	6.7
41-70 percent	.81	.41	.63	.39	.41	51.6	69.0	59.3	72.1	69.1	2.0	6.4	3.8	5.5	5.3
71 percent or more	.74	.30	.52	.43	.45	57.3	79.0	67.9	81.0	76.3	2.9	10.8	5.4	5.3	5.5
Farmer Age															
39 years or younger	.96	.41	.64	.48	.47	50.8	66.9	58.2	69.1	68.1	1.8	7.6	4.1	4.9	5.1
40-49 years	.80	.44	.60	.39	.41	50.0	68.8	57.9	76.1	71.7	2.4	6.2	4.0	5.6	5.9
50 years or older	.64	.30	.47	.32	.32	49.6	69.5	58.7	71.6	68.7	2.7	7.5	4.9	6.6	6.6

TABLE 11. INTEREST EXPENSE AND FARM INCOME EFFICIENCY MEASURES (AS A PERCENTAGE OF GROSS FARM INCOME), QUARTILE VALUES FOR 2007, MEDIAN VALUES FOR 2006, AND 5-YEAR AVERAGE, 2002-2006, OF MEDIAN VALUES, NORTH DAKOTA FARM BUSINESS MANAGEMENT EDUCATION PROGRAM PARTICIPANTS.

Farm Group	2007 Upper Quartile	2007 Lower Quartile	2007 Median	2006 Median	Average of 2002-2006 Medians	2007 Upper Quartile	2007 Lower Quartile	2007 Median	2006 Median	Average of 2002-2006 Medians
	Interest Expense(%)					Net Farm Income (%)				
All Farms	3.2	8.1	5.2	7.2	6.2	41.1	18.8	30.6	14.2	17.1
Region										
Red River Valley	3.1	7.4	4.7	5.0	4.4	33.1	15.8	25.5	21.8	20.0
North Central	3.3	7.3	5.0	7.6	6.5	43.1	22.1	33.7	15.0	18.0
South Central	2.8	7.5	5.2	6.7	5.8	42.4	19.1	33.5	12.8	16.5
West	3.8	11.1	7.3	10.3	8.1	40.1	14.9	26.6	0.6	13.2
Farm Enterprise										
Crop	2.8	6.4	4.5	6.0	5.2	43.3	23.0	35.0	16.1	18.1
Livestock	5.2	14.3	9.8	10.9	9.2	26.8	1.8	15.9	6.0	16.4
Mixed	5.1	11.1	7.5	10.1	8.1	35.9	14.5	26.1	10.5	15.4
Farm Sales										
$99,999 or less	4.4	17.2	11.8	11.5	10.4	36.6	-7.6	17.1	18.2	18.1
$100,000-$249,999	3.7	10.8	6.9	9.0	7.3	39.9	14.4	26.8	9.4	16.1
$250,000-$499,999	3.2	6.9	4.7	6.1	5.7	41.6	23.8	32.7	16.2	17.9
$500,000 or more	3.0	6.0	4.5	5.5	4.3	42.9	20.1	34.0	14.3	17.7
Farm Size										
1,999 acres or less	3.1	8.8	5.3	7.1	6.4	40.6	15.2	28.4	15.8	17.3
2,000 acres or more	3.3	7.7	5.0	7.2	6.1	41.7	20.8	32.8	13.4	17.2
Cropland Tenure										
Full tenant	2.4	6.4	3.7	4.9	4.5	40.0	15.8	25.8	13.0	16.9
1-20 percent owned	3.3	6.4	4.7	6.5	5.3	40.0	21.4	33.3	13.9	16.1
21-40 percent owned	3.5	8.2	5.5	7.3	6.6	43.3	20.1	33.8	15.7	17.2
41 percent or more owned	3.8	10.5	6.6	10.2	8.5	41.4	16.9	29.8	14.2	18.8
Net Farm Income										
$19,999 or less	7.4	17.5	13.3	11.0	9.2	10.6	-8.8	0.0	-3.3	0.6
$20,000-$49,999	3.9	11.3	7.2	7.5	6.7	31.5	14.4	21.2	15.6	16.4
$50,000-$99,999	4.5	8.8	6.7	5.2	5.3	30.8	16.2	22.7	18.5	22.2
$100,000 or more	2.6	5.8	4.1	4.4	3.9	45.1	29.3	38.3	26.9	28.7
Debt-to-Asset Ratio										
0-40 percent	1.8	4.3	3.0	3.8	3.2	47.3	29.4	39.8	24.1	24.7
41-70 percent	4.3	7.7	5.5	7.6	7.0	38.6	20.1	29.6	14.2	17.5
71 percent or more	6.7	13.6	9.1	10.3	8.9	26.2	4.5	15.3	3.3	8.7
Farmer Age										
39 years or younger	3.2	8.9	5.4	7.0	6.2	39.3	18.0	28.2	18.2	19.6
40-49 years	3.4	7.5	5.1	7.6	6.2	41.4	20.9	32.5	10.5	15.7
50 years or older	2.9	7.8	5.0	6.9	6.3	42.2	16.6	31.5	15.6	17.1

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 profitability 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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