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**Agricultural Economics Report No. 379**

**August 1997**

**Financial Characteristics of  
North Dakota Farms  
1994-1996**

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## ABSTRACT

The performance of over 500 North Dakota farms, 1994-1996, 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.

**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:

- ① **Past performance.** The progress of a business can be monitored by constructing financial measures on a periodic basis and comparing present to past performance.
- ② **Industry benchmarks.** The average or median of a financial measure from several similar businesses provides a good point of reference. Currently, there is not a nationwide database of farm records. However, there are statewide farm record programs in some states, such as 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) was formed by the American Bankers Association in 1989 to develop standards for construction of financial statements and measures of financial performance in agriculture. In 1991, the task force provided recommendations 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 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 from 1994-1996. Similar studies for 1991, 1992 and 1993 are referenced on page 25 of this report. The data are from financial summaries of farms participating in the North Dakota Farm Business Management Education program. 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

More than 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 1994 through 1996, the financial summaries of over 500 farms each year were considered usable for this study. Table 1 shows the distribution of farms by characteristic for 1996.

Most farms were represented in all three years (1994-1996) of this study. There normally is a small turnover of participants in farm management education programs. Also, the number of farms that complete their annual records by a cut off date varies from year to year. In 1996, 1995 and 1994, the number was 551, 596, and 536, respectively.

The farms in this study are larger and the age of the farm operators younger than the state average. In 1996, only 35% of the 31,000 farms in North Dakota had gross receipts greater than \$100,000, whereas 74% of the 551 farms in this study exceed that sales volume (median gross sales was \$176,636). The average age of farm operators in this study is 42 compared to 50 for the state average. The farms in the study are more representative of operations that provide the primary or only source of net family income. The state average

includes all farms with gross sales greater than \$1,000.

## **DEFINITION OF FINANCIAL MEASURES**

Sixteen measures of financial performance were calculated for each farm in this study. The recommendations of the farm financial standards task force for calculating the ratios were followed as closely as possible.

The farm financial standards task force 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. Depreciation was straight line over estimated life of machine.
- 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. A \$20,000 charge was used per full time operator.

### **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. A \$20,000 charge was used per full time operator. 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 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. A \$20,000 charge was used per full time operator. 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 revenue 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 revenue is the return to the operator for unpaid labor and management and equity capital used in the farm business. Net farm revenue 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 nonfarm 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 cash flows 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 nonfarm 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.

## INTERPRETATION OF RESULTS

Each financial measure was calculated for each farm. 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 the tables as a measure 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 cropland. The tables 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?

Caution must be used when analyzing the tables because of the small number of farms and because one characteristic does not completely categorize a farm. A small number of farms increases the possibility that results may not be representative of a farm category. In this study, for 1996, there are only 92 farms from the Red River Valley, 95 livestock and 99 mixed livestock-crop enterprise farms, and 99 farms in the negative net farm income category. Also for 1996, certain tables had fewer farms than indicated in Table 1. Sixty-five farms were omitted from the current liabilities and liquidity analysis because term debt was not

separated into current and non-current portions; 72 farms were omitted from the repayment capacity analysis because of insufficient detail for scheduled term debt payments. The eight farms with no cropland were omitted from cropland tenure categories.

There are some strong correlations between two or more classifications, so it is difficult to associate a financial measure with an individual farm characteristic. The Red River Valley has the highest proportion, relative to other regions, of farms in the full tenant, crop enterprise, and less than 1,600 acres categories. Is a median net farm income of \$64,696 for farms in the Red River Valley associated more with geographic location, tenancy, farm type or farm size?

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 70%, which is worse than the lower quartile value of 67% (shown on table 5) for farm enterprise category. However, other factors such as profitability, land tenure, total assets, and age of operator should also be considered.

Last, 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.

The tables reflect very strong financial performance in the Red River Valley and improvement in the south central region, both from profitable crop production. However, because of extremely poor returns to livestock farms and a decline in crop production nearly all 16 measures of financial performance deteriorated for the third consecutive year in the west and north central regions.

Particular caution must be used in making conclusions on the effect tenure, sales, and to a lesser extent age, have on financial performance. There was disproportionate representation in certain farm categories of livestock farms, which generally had very poor financial performance, and of Red River Valley farms, which mainly were very profitable crop farms. For example, median net

farm income was higher for the category of farms that rented all crop land than for the category that owned over 40% of their crop land. The reason may not be that renting land was more profitable than owning land, but that livestock was very unprofitable! -- Most livestock farms were in the high crop land ownership category, and the Red River Valley had the greatest percent of farms with no crop land ownership.

## FARM CLASSIFICATION AND HIGHLIGHTS

### ALL FARMS

#### Highlights

- Profitability measures improved in 1996 to levels similar to 1994 because of better crop profitability. Financial performance of livestock farms was very weak for the third consecutive year.
- The median measures of both current and total assets, and current and total liabilities have increased from 1994 to 1996, but liabilities have increased by a larger percentage.
- The median current ratio decreased slightly each year from 1994 to 1996. Median current ratio was 1.2 in 1996, one-fourth of all farms had a current ratio higher than 2.1, and one-fourth of all farms had a current ratio less than 0.9.
- The median debt-to-asset ratio was 55.6% in 1996, up from 51.5% in 1995. One-fourth of all farms had less than 34.6% debt and one-fourth had debt in excess of 74.3%.
- The median net farm income was \$31,063 in 1996, a substantial increase from \$23,463 in 1995, but below \$32,523 in 1994. Upper and lower quartiles were \$64,795 and \$7,341, respectively.
- The average net farm income of \$45,043 was about \$14,000 greater than the median, indicating large net income farms skewed the average.
- Median rates of return on assets and equity were 6.5% and 4.9%, respectively.
- The median term debt coverage ratio was 1.2 but 41% of all farms were below 1.0, indicating an inability to make all scheduled term debt payments in 1996.
- Median net farm income as a percent of gross revenue, a financial efficiency measure, was 18%, compared to 16.2% in 1995 and 21.7% in 1994.

## REGION

Farms were classified in one of four geographic region 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 Kindred and Grafton programs are not in the Red River Valley and are classified as south-central and north-central, respectively. The southern areas of both the "Red River Valley" and the "west" region are better represented than the northern areas.

Locations of North Dakota Farm Business Management programs that participated in the 1996 summaries were: Red River Valley: Grafton, Kindred and Wahpeton

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

South Central: Bismarck, Carrington, Enderlin, Jamestown, Napoleon, Oakes, Valley City

West: Bismarck, Carson, Dickinson, Glen Ullin, and Stanley

### Highlights:

- In 1996 the average size of farm increased from the Red River Valley (about 1,300 acres, nearly all crop land) to the west region (over 2,550 acres, including 1,200 acres pasture). Farms in the north central and south central regions averaged about 1,850 acres with nearly 1,450 acres crop land.
- Several farm characteristics are strongly related to region. Red River Valley farms typically have smaller acreage, but have much larger total farm sales, assets and liabilities than farms in other regions. The incidence of livestock and mixed enterprise farms goes from a mere 6% in the Red River Valley to 66% in the west, and percent of crop land owned increases from east to west.
- On the strength of crop profitability, the Red River Valley had much better financial performance than other regions and the south central region had the most dramatic improvement from 1995.
- Nearly all 16 financial measures of performance deteriorated for the third consecutive year for north central and west regions because of extremely poor returns to livestock farms and a decline in crop production. The west had the worst performance in 1996 and the greatest decline from 1995.
- Solvency deteriorated for every region except the Red River Valley, 1994-1996. In two years, median debt-to-asset increased to 53.1% from 41.3% in the north central region and to 56.0% from 48.7% in the west.
- Median net farm income ranged from \$64,696 in the Red River Valley to \$20,882 in the west. It was \$24,376 in the north central and \$32,153 in the south central region. Only 3% of Red River Valley farms had negative net farm income compared to over 20% for other regions.
- Median rate of return on assets and equity ranged from extremely high, 12.5% and 18.9%, respectively, in the Red River Valley to 3.6% and 0.0% in the west.
- Median term debt coverage ratio was 0.9 for the north central and west regions compared to 1.8 for the Red River Valley and 1.3 for the South Central region.
- Median net farm income as a percent of gross revenue ranged from 22.2% for the Red River Valley to 14.3% for the west. It was 17.3% for the south central region, an increase from 10.5% in 1995.

## 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."

### Highlights:

- Two-thirds of all farms statewide were in the crop category, with the remaining farms a near even split between livestock and mixed enterprise farms.
- Over 93% of Red River Valley farms, about two-thirds of farms in the central regions, and one-third of west region farms were classified as crop.
- Forty-two percent of the farms in the state that were classified as livestock were in the west region.
- Median current ratio was 1.3 for crop farms, 1.2 for livestock farms and 1.1 for mixed enterprise farms.
- Livestock and mixed farms have had serious deterioration of solvency. Median debt-to-asset ratio increased each year, 1994-1996, for all farm types. In 1996 it was 67.7% for livestock farms, 63.2% for mixed enterprise farms and 51.3% for crop farms.
- Crop farms had much better profitability measures than livestock farms for the third consecutive year. Median rate of returns on assets and equity were 9.1% and 9.9% for crop farms, respectively, compared to 1.1% and -6.0% for livestock farms.
- Median net farm income for crop farms was \$47,669 in 1996, an increase of nearly \$10,000 from 1995, but remained very poor for livestock and mixed enterprise farms, \$7,904 and \$14,437, respectively.
- Most livestock and mixed enterprise farms were unable to meet scheduled term debt payments in 1996. One-half of livestock and mixed enterprise farms had a term debt coverage ratio of 0.7 and 0.9 or less, respectively. The median for crop farms was 1.6.
- The median asset turnover ratio of .47 for crop farms and .22 for livestock farms is consistent with past years and the relationship generally expected between crop and cow-calf enterprises.
- The median interest expense as percent of gross farm revenue for crop, livestock and mixed enterprise farms was 7.2%, 12.9%, and 11.5%, respectively, which was similar to 1995.
- The median of net farm income as percent of gross revenue was only 9.4% for livestock farms compared to 20.3% for crop farms.

## FARM SALES

Farms were classified in one of three 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 or over

### Highlights

- Median farm sales were \$176,636 and the average was \$213,209. About 30% of farms have sales in excess of \$250,000, and 26% have sales less than \$100,000.
- Farms in the middle sales category, between \$100,000 and \$250,000, have decreased (52% in 1994 to 44% in 1996) while the percentage of farms in the low and high sales categories has increased.
- Red River Valley farms had high sales volume; 58% had farm sales in excess of \$250,000, compared to 20% and 17% of north central and west region farms, respectively, and one-third of south central farms.
- Thirty-six percent of north central and west farms had sales less than \$100,000 compared to only 7% of Red River Valley farms.
- Livestock farms had low sales. Fifty-eight percent of livestock, 43% of mixed enterprise farms, and only 15% of crop farms had farm sales less than \$100,000.
- Farmers between the ages of 35 and 45 tended to have greater farm sales than farmers who were younger or older.
- Farms with over \$250,000 sales had median total assets three times higher than farms with less than \$100,000 sales.
- There was a very strong direct relationship between gross sales and performance for nearly every financial measure in 1996. However, farm type and location is an important factor. Most livestock farms, which generally had very poor financial performance, were in the low sales category and most Red River Valley farms, crop farms with strong profitability, are in the high sales category.
- Median debt-to-asset for farms with low sales has increased to 66.4% compared to a three year improvement to 47.1% for farms with sales greater than \$250,000.
- Farms with more sales were also more efficient in converting sales to net income. The median net farm income as percent of gross was 21.1, 17.6, and 7.6 for the high, medium, and low sales farm categories, respectively.
- Median net farm income was \$80,050, \$32,460, and \$5,035 for the high, medium, and low sales farm categories, respectively.



## FARM SIZE

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

Farm size categories were:       1,600 acres or less  
  1,601 acres or more

### Highlights

- Total acreage per farm, crop land and pasture, increased from 1,308 in the Red River Valley to 2,567 in the west. Average crop acreage did not vary much by region, ranging from 1,303 in the Red River Valley to 1,443 in the south central region.
- Only one-fourth of the farms in the Red River Valley had acreage greater than 1,600 compared to over two-thirds of the farms in the west.
- For the entire state, there was about an even split between farms in the small and large size categories, regardless of farm type (crop, livestock, or mixed).
- Only 36% of the farmers less than 35 years old operate more than 1,600 acres, compared to 55% of farmers between 35 and 45 years old, and 50% of farmers over 45 years.
- Each year, 1994-1996, the median current ratio for the large farm category has been slightly better than for the small farm category.
- The group of farms with more than 1,600 acres had better median measures of solvency, repayment capacity, and profitability than farms with less acres but the median financial efficiency measures were very similar between the two groups.
- Median net farm income was \$40,364 for farms larger than 1,600 acres and \$25,914 for smaller farms, but median net farm income as a percent of gross revenue, a financial efficiency measure, was 18% for both groups.

## CROPLAND TENURE

This is a classification of the portion of cropland 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 was greatest in the west and least in the east. Over one-third of Red River Valley farms rented all crop land.
- Fifty-eight percent of farms in the west region were in the high tenure category (more than 40% of crop land owned), compared to about one-third for the central regions and 12% for the Red River Valley.
- Crop land ownership increases with age. Over one-half of farmers older than 45 years owned more than 40% of their crop land, compared to less than one-quarter of farmers younger than 45 years. Also, 39% of farmers less than 35 years owned no crop land, compared to 20% of farmers 35-45 years, and 11% of farmers older than 45 years.
- Operators of livestock and mixed enterprise farms own a greater portion of their crop land than crop farms. One-half of livestock and mixed enterprise farms are in the highest percent crop land ownership category, compared to 27% of crop farms.
- Twenty-seven percent of small farms (less than 1,600 acres) and 14% of large farms had no crop land ownership. There was a similar percentage of small and large farms that had high crop land ownership, but large farms were much more likely than small farms to own between 1 and 40% of crop land.
- Median current ratio was similar between tenure groups in 1996, but in 1994 and 1995 the farms with greater than 20% crop land ownership had higher current ratios.
- No clear trend between solvency and percent of crop land ownership is shown in the 1994-1996 period.
- Profitability measures were strongest for farms that owned 1% to 20% of crop land and weakest for farms with high land ownership. A conclusion that high ownership causes low profit is tenuous because there were five times as many livestock and mixed enterprise farms, which were very low profit, in the high land ownership group than in the group with 1-20% land ownership.
- Farms with a greater proportion of crop land ownership have more land assets and land interest costs and therefore tend to have lower asset turnover ratios and higher interest expense ratios, but lower operating expense ratios.

## NET FARM INCOME

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

Negative  
\$0 - \$24,999  
\$25,000 - \$49,999  
\$50,000 or more

### Highlights

- Median net farm income was \$31,063 in 1996, a strong improvement from \$23,463 in 1995 but slightly less than \$32,523 in 1994.
- There were some strong associations between net farm income and farm type, farm sales, geographic region, and farm size.
- Nearly one-half of all crop farms had net farm income greater than \$50,000 compared to only 11% of livestock farms. About 4 out of every 10 livestock farms, and 1 in 10 crop farms, had negative net farm income.
- Over three-fourths of the farms with sales greater than \$250,000 had net farm income greater than \$50,000 and only 7% had negative net farm income. Nearly 40% of farms with sales less than \$100,000 had negative net farm income and only 15% exceeded \$25,000 net farm income.
- Net farm incomes were the highest in the Red River Valley where over 60% of farms had net farm income greater than \$50,000 compared to about 30% for the rest of the state.
- Nearly one-half of the farms larger than 1,600 acres were in the highest net farm income group compared to about one-fourth of smaller farms. However, a similar percent, 18%, of large and small farms had negative net farm income.
- Farmers between the ages of 35 to 45 years old generally were more profitable than farmers that were younger or older.
- Solvency, liquidity, repayment capacity, and financial efficiency were strongly correlated with net farm income.
- Over one-half of low debt farms (less than 40% debt-to-asset) had net farm income in excess of \$50,000, compared to 40% of farms with 40-70% debt. Only 13% of high debt farms were in the high profit group and 32% had negative net farm income.
- Median rate of returns on assets and equity were 13.7% and 19.4%, respectively, for farmers with net farm income greater than \$50,000. These high numbers can partially be explained by conservative valuation of assets and unpaid operator labor and management.

## 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:

- Twenty-nine percent of the farms had a debt-to-asset ratio less than 40%, 43% of farms were in the 40-70% debt range, and 28% of farms had greater than 70% debt.
- Farms in the lowest debt-to-asset category had the highest median total assets and the lowest median liabilities.
- There is a strong inverse relationship between level of debt and liquidity, repayment capacity, profitability and financial efficiency measures, except asset turnover ratio. As debt increases, these measures deteriorate.
- As expected, farms in the low debt category have the best median current ratio, 3.0, median term debt coverage ratio, 2.8, and median interest percent ratio, 4.0%, of any farm category.
- Median net farm income for the low, medium, and high debt categories was \$52,330, \$33,515 and \$13,605, respectively.
- Nearly one-third of farms with high debt had negative net farm income.
- Livestock and mixed enterprise farms had more debt than crop farms. Over 42% of livestock and mixed enterprise farms were in the high debt category compared to 21% of crop farms.
- About 41% of farms with low sales (less than \$100,000) were in the high debt group, compared to only 15% of farms that had sales greater than \$250,000.
- Percent debt-to-asset tended to decrease as age of farmer increased.

## FARMER AGE

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

- 34 years or less
- 35 - 44 years
- 45 years or older

### Highlights:

- About 19% of farm operators were less than 35 years, 44% were between 35 and 45 years old, and 37% were older than 45. The percent of farmers in the youngest age category has been decreasing and the percent in the oldest category has been increasing.
- Age of farmers tended to increase from east to west. About 28% of farmers in the Red River Valley were older than 45 compared to 45% of farmers in the west.
- Farmers in the middle age group typically had more gross sales, larger farms, and more profitability than the younger or older age groups.
- There has been little difference in median current ratio between age categories during 1994-1996.
- Median net farm income was \$27,395 for farmers less than 35 years, \$45,611 for farmers between 35 and 45 years old, and \$24,210 for farmers older than 45 years.
- Nearly one-fourth of farmers older than 45 years had negative net farm income.
- In each year, 1994-1996, the young age group of farmers employed assets more efficiently than farmers older than 45 years. The young group had better median measures of repayment capacity, profitability and financial efficiency despite having much fewer total assets and higher debt-to-asset.

**Table 1. Farm Classifications, North Dakota Farm Business Management Education Program, 1996.**

Farm Group/Category	Number of Farms (551)	Percentage
Region		
Red River Valley	92	16.7
North Central	167	30.3
South Central	187	33.9
West	105	19.1
Farm Enterprise		
Crop	366	66.4
Livestock	95	17.2
Mixed	90	16.3
Farm Sales		
\$99,999 or less	145	26.3
\$100,000 - \$249,999	240	43.6
\$250,000 or over	166	30.1
Farm Size		
1,600 acres or less	276	50.9
1,600 acres or over	275	49.9
Cropland Tenure		
Full tenant	113	20.8
1-20 percent owned	125	23.0
21-40 percent owned	113	20.8
41 percent or over owned	192	35.4
Farm Income		
Negative	99	18.0
\$0-\$24,999	138	25.0
\$25,000-\$49,999	115	20.9
\$50,000 or more	199	36.1
Debt-to-asset Ratio		
0-40 percent	159	28.9
41-70 percent	235	42.6
71 percent or more	157	28.5
Farmer Age		
34 years or younger	103	18.7
35-44 years	244	44.3
45 years or older	204	37.0

**TABLE 2. CURRENT ASSETS AND CURRENT LIABILITIES, QUARTILE VALUES FOR 1996, MEDIAN VALUES FOR 1994 AND 1995, NORTH DAKOTA FARM BUSINESS MANAGEMENT EDUCATION PROGRAM PARTICIPANTS**

Farm Group	1996			1995			1994			
	Upper Quartile	Lower Quartile	Median	Upper Quartile	Lower Quartile	Median	Upper Quartile	Lower Quartile	Median	
All Farms	197,336	60,115	119,884	101,000	100,626	100,626	36,925	144,283	79,024	64,064
Region										
Red River Valley	289,928	122,825	186,113	171,980	131,673	131,673	60,908	208,000	132,267	124,869
North Central	148,533	53,275	88,904	83,445	89,261	89,261	25,995	92,527	54,469	46,948
South Central	201,999	62,936	124,068	85,731	93,687	93,687	47,945	155,114	89,837	65,865
West	173,666	58,454	102,022	95,255	92,986	92,986	27,982	121,193	56,390	47,105
Farm Enterprise										
Crop	228,503	82,813	142,852	116,570	114,905	114,905	45,000	167,278	93,355	74,159
Livestock	101,623	34,414	60,115	58,272	79,470	79,470	20,506	79,185	42,365	46,593
Mixed	139,995	57,567	91,127	87,119	85,127	85,127	40,189	116,974	74,770	69,827
Farm Sales										
\$99,999 or less	69,035	26,586	49,820	40,274	51,385	51,385	18,339	62,435	38,171	27,302
\$100,000-\$249,999	149,671	74,773	115,824	102,249	100,457	100,457	48,051	132,457	81,418	69,197
\$250,000 or over	358,436	169,867	243,929	253,972	244,439	244,439	80,007	237,875	155,114	165,810
Farm Size*										
1,600 acres or less	156,330	44,286	81,134	53,058	67,605	67,605	28,746	109,148	55,514	38,914
1,601 acres or over	248,096	97,488	151,366	125,147	129,027	129,027	54,890	190,297	103,944	83,637
Cropland Tenure										
Full tenant	189,410	49,447	110,072	83,831	89,236	89,236	30,519	161,668	62,949	57,154
1-20 percent owned	236,524	74,910	132,159	110,079	123,680	123,680	43,925	182,506	95,841	95,003
21-40 percent owned	201,999	96,559	145,991	121,288	132,161	132,161	52,615	163,269	109,148	87,588
41 percent or over owned	165,424	53,679	95,591	81,931	88,405	88,405	31,171	108,568	60,446	52,421
Net Farm Income**										
Negative	109,347	36,725	63,531	52,916	74,900	74,900	32,673	116,709	67,448	62,724
\$0-\$24,999	115,211	39,060	63,487	66,491	63,359	63,359	29,816	113,574	54,827	53,153
\$25,000-\$49,999	146,786	67,886	107,525	97,885	85,063	85,063	40,603	135,535	76,274	54,073
\$50,000 or more	305,476	145,847	200,813	187,747	152,582	152,582	54,620	210,268	113,945	97,210
Debt-to-Asset Ratio										
0-40 percent	260,974	86,949	150,985	125,147	114,598	114,598	15,357	92,602	38,815	33,588
41-70 percent	190,242	68,011	129,574	108,656	99,755	99,755	50,161	182,506	95,966	91,794
71 percent or more	129,850	41,556	74,910	59,376	73,262	73,262	48,204	157,115	86,499	77,037
Farmer Age										
34 years or younger	138,984	46,295	86,949	73,955	80,515	80,515	21,411	125,717	42,831	46,834
35-44 years	222,748	74,773	137,022	118,549	117,883	117,883	43,925	157,115	83,907	70,121
45 years or older	186,113	58,056	110,072	92,968	93,763	93,763	39,375	138,541	81,023	71,035

\*Farm size categories in 1995 and 1994 were: 1,200 acres or less, and 1,201 acres or over.

\*\*Net Farm Income categories in 1995 and 1994 were: negative; 0-19,999; 20,000-39,999; and 40,000 or more.

**TABLE 3. LIQUIDITY MEASURES, QUARTILE VALUES FOR 1996, MEDIAN VALUES FOR 1994 AND 1995, NORTH DAKOTA FARM BUSINESS MANAGEMENT EDUCATION PROGRAM PARTICIPANTS.**

Farm Group	1996			1995			1994			1996		
	Upper Quartile	Lower Quartile	Median	Upper Quartile	Lower Quartile	Median	Upper Quartile	Lower Quartile	Median	Upper Quartile	Lower Quartile	Median
All Farms	2.1	0.9	1.2	1.3	1.4	1.4	67,472	-7,246	19,042	18,984	27,598	
Region												
Red River Valley	2.0	1.0	1.3	1.2	1.2	1.2	102,134	-865	42,944	32,034	24,458	
North Central	2.6	0.9	1.3	1.5	2.0	2.0	54,274	-3,916	18,330	22,151	43,017	
South Central	1.8	0.8	1.1	1.1	1.2	1.2	52,064	-16,840	8,555	6,422	20,597	
West	2.4	1.0	1.4	1.4	1.7	1.7	63,209	-3,701	26,429	35,951	39,677	
Farm Enterprise												
Crop	2.4	0.9	1.3	1.3	1.4	1.4	91,180	-9,626	25,595	32,034	33,149	
Livestock	1.9	0.9	1.2	1.1	1.4	1.4	35,044	-4,841	12,424	7,429	19,276	
Mixed	1.7	0.9	1.1	1.3	1.3	1.3	46,183	-5,278	11,046	17,656	20,048	
Farm Sales												
\$99,999 or less	1.8	0.8	1.2	1.3	1.5	1.5	24,442	-7,354	6,643	7,085	19,505	
\$100,000-\$249,999	2.0	0.9	1.2	1.2	1.5	1.5	55,628	-13,718	14,944	20,068	26,928	
\$250,000 or over	2.7	1.0	1.4	1.4	1.4	1.4	193,476	10,589	66,493	67,607	73,245	
Farm Size*												
1,600 acres or less	2.2	0.9	1.2	1.2	1.4	1.4	48,114	-9,367	10,487	7,085	18,186	
1,601 acres or over	2.1	1.0	1.3	1.3	1.5	1.5	97,906	-2,231	27,479	33,822	38,879	
Cropland Tenure												
Full tenant	1.9	0.9	1.2	1.3	1.3	1.3	65,407	-8,447	14,580	10,112	22,868	
1-20 percent owned	2.2	1.0	1.3	1.2	1.2	1.2	85,033	182	36,292	18,280	21,262	
21-40 percent owned	1.8	0.9	1.2	1.4	1.6	1.6	80,136	-14,842	17,582	42,534	42,918	
41 percent or over owned	2.4	0.9	1.3	1.4	1.7	1.7	53,015	-6,539	18,330	20,068	29,997	
Net Farm Income**												
Negative	1.2	0.7	1.0	0.8	0.8	0.8	17,063	-24,435	-709	-10,771	-14,126	
\$0-\$24,999	1.6	0.9	1.1	1.2	1.1	1.1	23,411	-11,064	3,841	8,820	7,795	
\$25,000-\$49,999	2.4	0.9	1.4	1.4	1.6	1.6	49,779	-9,367	22,081	22,456	27,595	
\$50,000 or more	3.4	1.1	1.7	1.7	2.0	2.0	161,115	20,683	80,136	78,755	72,849	
Debt-to-Asset Ratio												
0-40 percent	7.7	1.8	3.0	3.2	3.1	3.1	202,286	37,393	88,741	86,105	76,815	
41-70 percent	1.7	0.9	1.2	1.2	1.4	1.4	52,270	-3,712	19,710	16,624	22,084	
71 percent or more	1.1	0.7	0.9	0.8	0.9	0.9	7,392	-26,590	-6,892	-15,043	-8,511	
Farmer Age												
34 years or younger	2.3	1.0	1.2	1.3	1.4	1.4	49,517	-1,884	10,968	9,506	21,262	
35-44 years	2.4	0.9	1.3	1.3	1.5	1.5	89,920	-3,712	27,479	32,832	37,301	
45 years or older	1.8	0.9	1.2	1.2	1.4	1.4	55,823	-13,718	14,580	17,451	25,611	

\*Farm size categories in 1995 and 1994 were: 1,200 acres or less; and 1,201 acres or over.

\*\*Net Farm Income categories in 1995 and 1994 were: negative; 0-19,999; 20,000-39,999; and 40,000 or more.



**TABLE 4. TOTAL ASSETS AND TOTAL LIABILITIES, QUARTILE VALUES FOR 1996, MEDIAN VALUES FOR 1994 AND 1995, NORTH DAKOTA FARM BUSINESS MANAGEMENT EDUCATION PROGRAM PARTICIPANTS**

Farm Group	1996				1995			1994		
	Upper Quartile	Lower Quartile	Median	1994 Median	1995 Median	1994 Median	Upper Quartile	Lower Quartile	1995 Median	1994 Median
All Farms	696,520	313,230	469,587	439,749	438,289	439,749	133,852	353,880	225,793	201,037
Region			<b>Total Farm Assets(\$)</b>				<b>Total Farm Liabilities(\$)</b>			
Red River Valley	908,707	390,061	643,234	529,822	631,888	529,822	175,651	439,819	276,831	254,985
North Central	618,752	283,911	427,093	390,120	387,133	390,120	103,627	286,841	172,274	150,871
South Central	658,205	283,329	449,492	419,936	398,423	419,936	147,249	378,540	228,127	210,598
West	686,774	331,367	454,088	457,183	445,350	457,183	142,560	364,238	215,661	200,486
Farm Enterprise										
Crop	786,649	339,844	527,542	454,102	476,350	454,102	128,915	378,540	225,861	206,000
Livestock	495,001	255,796	391,146	419,936	388,618	419,936	132,351	309,544	224,552	200,486
Mixed	553,232	277,399	399,949	373,917	383,432	373,917	167,181	337,233	242,295	164,014
Farm Sales										
\$99,999 or less	358,879	171,339	255,278	237,422	244,335	237,422	82,974	241,342	122,925	108,089
\$100,000-\$249,999	577,533	344,673	441,609	443,221	436,671	443,221	143,977	327,020	224,552	208,911
\$250,000 or over	1,038,947	603,664	793,929	777,568	810,458	777,568	205,050	497,166	354,220	334,666
Farm Size*										
1,600 acres or less	515,736	211,450	354,828	302,736	291,635	302,736	103,581	289,568	163,385	151,299
1,601 acres or over	824,254	421,981	603,664	513,998	528,231	513,998	193,774	410,776	254,365	226,071
Cropland Tenure										
Full tenant	482,709	146,490	324,847	248,579	285,465	248,579	60,340	308,261	128,130	132,692
1-20 percent owned	742,821	321,256	476,100	411,526	408,936	411,526	138,852	381,335	233,540	210,105
21-40 percent owned	752,724	421,981	536,000	496,378	522,952	496,378	218,884	381,157	255,021	248,565
41 percent or over owned	767,142	343,504	500,916	536,436	518,368	536,436	167,845	363,125	237,886	212,186
Net Farm Income**										
Negative	515,736	211,184	357,673	443,710	328,333	443,710	154,369	367,081	237,657	264,255
\$0-\$24,999	475,121	228,041	354,137	301,747	333,228	301,747	123,122	319,258	170,094	165,825
\$25,000-\$49,999	597,552	283,911	449,492	364,207	379,101	364,207	112,760	308,469	209,426	170,410
\$50,000 or more	911,726	487,883	695,295	572,900	662,061	572,900	150,474	431,510	239,166	213,130
Debt-to-Asset Ratio										
0-40 percent	905,907	365,458	626,271	529,822	533,273	529,822	50,567	210,184	100,375	107,176
41-70 percent	704,628	340,302	513,004	444,005	490,970	444,005	181,212	381,335	265,277	240,457
71 percent or more	476,612	226,901	354,137	317,670	326,595	317,670	215,538	399,637	272,332	274,983
Farmer Age										
34 years or younger	476,612	181,319	321,256	301,747	319,704	301,747	82,974	278,243	160,642	168,891
35-44 years	725,504	334,615	492,193	451,877	493,364	451,877	147,282	378,106	239,209	210,598
45 years or older	762,124	344,673	504,206	543,182	490,188	543,182	159,486	367,081	236,824	218,616

\*Farm size categories in 1995 and 1994 were: 1,200 acres or less; and 1,201 acres or over.

\*\*Net Farm Income categories in 1995 and 1994 were: negative; 0-19,999; 20,000-39,999; and 40,000 or more.

**TABLE 5. SOLVENCY MEASURES, QUARTILE VALUES FOR 1996, MEDIAN VALUES FOR 1994 AND 1995, NORTH DAKOTA FARM BUSINESS MANAGEMENT EDUCATION PROGRAM PARTICIPANTS**

Farm Group	1996			1995			1994			1996			1995			1994										
	Upper Quartile	Lower Quartile	Median	Upper Quartile	Lower Quartile	Median	Upper Quartile	Lower Quartile	Median	Upper Quartile	Lower Quartile	Median	Upper Quartile	Lower Quartile	Median	Upper Quartile	Lower Quartile	Median								
	Debt-to-Asset (%)									Equity-to-Asset (%)									Debt-to-Equity							
All Farms	34.6	74.3	55.6	51.5	49.8	49.8	65.4	25.7	44.4	48.5	50.2	0.5	2.9	1.3	1.1	1.0										
Region																										
Red River Valley	37.3	72.3	52.8	52.9	53.4	53.4	62.7	27.7	47.2	47.1	46.6	0.6	2.6	1.1	1.1	1.1										
North Central	30.9	68.7	53.1	45.4	41.3	41.3	69.1	31.3	46.9	54.6	58.7	0.4	2.2	1.1	0.8	0.7										
South Central	39.5	77.1	57.6	56.0	51.4	51.4	60.5	22.9	42.4	44.0	48.6	0.7	3.4	1.4	1.3	1.1										
West	37.9	77.0	56.0	49.8	48.7	48.7	62.1	23.0	44.0	50.2	51.3	0.6	3.3	1.3	1.0	0.9										
Farm Enterprise																										
Crop	31.1	66.8	51.3	49.2	47.9	47.9	68.9	33.2	48.7	50.8	52.1	0.5	2.0	1.1	1.0	0.9										
Livestock	43.8	79.9	67.7	56.5	52.8	52.8	56.2	20.1	32.3	43.5	47.2	0.8	4.0	2.1	1.3	1.1										
Mixed	46.3	83.1	63.2	57.4	50.2	50.2	53.7	16.9	36.8	42.6	49.8	0.9	4.9	1.7	1.3	1.0										
Farm Sales																										
\$99,999 or less	44.7	83.0	66.4	55.9	52.3	52.3	55.3	17.0	33.6	44.1	47.7	0.8	4.9	2.0	1.3	1.1										
\$100,000-\$249,999	33.7	75.2	55.8	51.3	48.9	48.9	66.3	24.8	44.2	48.7	51.1	0.5	3.0	1.3	1.1	1.0										
\$250,000 or over	31.3	61.7	47.1	49.1	50.1	50.1	68.7	38.3	52.9	50.9	49.9	0.5	1.6	0.9	1.0	1.0										
Farm Size*																										
1,600 acres or less	34.8	77.3	57.8	55.4	53.8	53.8	65.2	22.7	42.2	44.6	46.2	0.5	3.4	1.4	1.2	1.2										
1,601 acres or over	34.3	68.5	53.2	50.4	47.5	47.5	65.7	31.5	46.8	49.6	52.5	0.5	2.2	1.1	1.0	0.9										
Cropland Tenure																										
Full tenant	29.3	78.7	57.9	49.0	53.8	53.8	70.7	21.3	42.1	51.0	46.2	0.4	3.7	1.4	1.0	1.2										
1-20 percent owned	34.8	71.8	52.6	59.0	52.4	52.4	65.2	28.2	47.4	41.0	47.6	0.5	2.5	1.1	1.4	1.1										
21-40 percent owned	42.2	73.7	58.5	49.9	50.7	50.7	57.8	26.3	41.5	50.1	49.3	0.7	2.8	1.4	1.0	1.0										
41 percent or over owned	31.1	70.5	53.5	50.4	44.1	44.1	68.9	29.5	46.5	49.6	55.9	0.5	2.4	1.2	1.0	0.8										
Net Farm Income**																										
Negative	52.1	87.6	74.2	70.7	63.3	63.3	47.9	12.4	25.8	29.3	36.7	1.1	7.1	2.9	2.4	1.7										
\$0-\$24,999	46.6	83.1	64.1	54.4	55.7	55.7	53.4	16.9	35.9	45.6	44.3	0.9	4.9	1.8	1.2	1.3										
\$25,000-\$49,999	33.4	73.4	52.6	53.9	47.4	47.4	66.6	26.6	47.4	46.1	52.6	0.5	2.8	1.1	1.2	0.9										
\$50,000 or more	25.1	60.2	44.7	40.6	42.9	42.9	74.9	39.8	55.3	59.4	57.1	0.3	1.5	0.8	0.7	0.8										
Debt-to-Asset Ratio																										
0-40 percent	13.2	31.3	22.8	23.3	24.1	24.1	86.8	68.7	77.2	76.7	75.9	0.2	0.5	0.3	0.3	0.3										
41-70 percent	47.8	62.0	55.5	55.5	54.1	54.1	52.2	38.0	44.5	44.5	45.9	0.9	1.6	1.2	1.2	1.2										
71 percent	77.1	94.7	84.5	83.4	82.0	82.0	22.9	5.3	15.5	16.6	18.0	3.4	17.9	5.5	5.0	4.6										
Farmer Age																										
34 years or younger	37.3	77.9	61.5	56.5	55.9	55.9	62.7	22.1	38.5	43.5	44.1	0.6	3.5	1.6	1.3	1.3										
35-44 years	37.6	70.3	53.1	51.6	49.7	49.7	62.4	29.7	46.9	48.4	50.3	0.6	2.4	1.1	1.1	1.0										
45 years or older	30.4	74.7	55.4	49.9	44.4	44.4	69.6	25.3	44.6	50.1	55.6	0.4	3.0	1.2	1.0	0.8										

\*Farm size categories in 1995 and 1994 were: 1,200 acres or less, and 1,201 acres or over.

\*\*Net Farm Income categories in 1995 and 1994 were: negative; 0-19,999; 20,000-39,999; and 40,000 or more.

TABLE 6. RATE OF RETURN ON ASSETS AND RATE OF RETURN ON EQUITY PROFITABILITY MEASURES, QUARTILE VALUES FOR 1996, MEDIAN VALUES FOR 1994 AND 1995, NORTH DAKOTA FARM BUSINESS MANAGEMENT EDUCATION PROGRAM PARTICIPANTS

Farm Group	1996			1994			1995		
	Upper Quartile	Lower Quartile	Median	Upper Quartile	Lower Quartile	Median	Upper Quartile	Lower Quartile	Median
All Farms	12.7	1.1	6.5	18.3	-4.9	4.9	18.3	-4.9	4.9
Region									
Red River Valley	18.6	7.2	12.5	28.5	5.8	18.9	28.5	5.8	18.9
North Central	9.7	-0.6	4.9	11.1	-5.9	1.4	11.1	-5.9	1.4
South Central	13.7	0.9	7.1	21.1	-4.9	6.3	21.1	-4.9	6.3
West	9.3	-0.5	3.6	10.1	-14.3	0.0	10.1	-14.3	0.0
Farm Enterprise									
Crop	14.9	3.7	9.1	22.4	0.0	9.9	22.4	0.0	9.9
Livestock	5.6	-4.7	1.1	3.3	-23.8	-6.0	3.3	-23.8	-6.0
Mixed	7.7	-1.8	2.7	10.3	-14.7	0.0	10.3	-14.7	0.0
Farm Sales									
\$99,999 or less	3.2	-7.6	-0.6	0.0	-24.8	-8.7	0.0	-24.8	-8.7
\$100,000-\$249,999	11.7	3.0	6.5	16.9	-0.3	5.5	16.9	-0.3	5.5
\$250,000 or over	18.5	7.0	12.1	30.0	6.2	15.9	30.0	6.2	15.9
Farm Size*									
1,600 acres or less	12.8	-0.3	6.0	19.2	-6.4	3.4	19.2	-6.4	3.4
1,601 acres or over	12.6	1.7	7.0	17.6	-3.6	5.9	17.6	-3.6	5.9
Cropland Tenure									
Full tenant	17.5	-1.8	9.8	29.1	-10.9	10.3	29.1	-10.9	10.3
1-20 percent owned	16.9	4.2	10.6	29.3	0.0	12.7	29.3	0.0	12.7
21-40 percent owned	12.9	1.6	8.3	18.7	-2.7	8.7	18.7	-2.7	8.7
41 percent or over owned	7.3	-0.5	3.7	7.4	-8.7	0.3	7.4	-8.7	0.3
Net Farm Income**									
Negative	-1.7	-11.7	-5.8	-9.6	-49.8	-19.2	-9.6	-49.8	-19.2
\$0-\$24,999	4.6	0.5	2.5	0.1	-10.3	-3.6	0.1	-10.3	-3.6
\$25,000-\$49,999	10.3	5.6	7.2	14.7	3.2	7.4	14.7	3.2	7.4
\$50,000 or more	18.9	10.1	13.7	31.6	12.0	19.4	31.6	12.0	19.4
Debt-to-Asset Ratio									
0-40 percent	13.6	2.7	8.1	14.8	1.4	8.5	14.8	1.4	8.5
41-70 percent	13.0	2.1	7.0	20.5	-5.3	6.5	20.5	-5.3	6.5
71 percent or more	9.7	-3.7	3.8	15.9	-28.4	0.0	15.9	-28.4	0.0
Farmer Age									
34 years or younger	15.5	-0.3	7.2	24.0	-14.3	6.9	24.0	-14.3	6.9
35-44 years	14.5	2.7	8.7	22.4	0.0	10.0	22.4	0.0	10.0
45 years or older	9.1	-0.6	4.2	10.3	-9.2	1.0	10.3	-9.2	1.0

\*Farm size categories in 1995 and 1994 were: 1,200 acres or less; and 1,201 acres or over.

\*\*Net Farm Income categories in 1995 and 1994 were: negative; 0-19,999; 20,000-39,999; and 40,000 or more.

**TABLE 7. OPERATING PROFIT MARGIN AND NET FARM INCOME PROFITABILITY MEASURES, QUARTILE VALUES FOR 1996, MEDIAN VALUES FOR 1994 AND 1995, NORTH DAKOTA FARM BUSINESS MANAGEMENT PROGRAM PARTICIPANTS.**

Farm Group	1996				1994 Median	1996				1995 Median	1994 Median
	Upper Quartile	Lower Quartile	Median	1995 Median		Upper Quartile	Lower Quartile	Median	1995 Median		
All Farms	26.6	3.5	17.3	14.5	17.9	64,795	7,341	31,063	23,463	32,523	32,523
Region											
Red River Valley	32.3	13.3	23.3	17.8	17.4	116,098	31,977	64,696	52,182	40,170	40,170
North Central	23.9	-2.6	14.6	15.5	22.8	57,821	4,713	24,376	26,297	41,375	41,375
South Central	27.4	3.1	17.4	7.5	11.0	63,864	4,757	31,253	11,844	18,568	18,568
West	24.5	-2.1	13.3	19.4	21.1	52,090	871	20,882	27,589	28,738	28,738
Farm Enterprise											
Crop	28.3	9.5	20.2	17.0	19.7	83,943	20,352	47,669	37,971	40,312	40,312
Livestock	20.8	-20.5	5.8	2.8	17.0	28,550	-10,164	7,904	8,094	18,568	18,568
Mixed	24.1	-10.0	11.6	10.7	12.9	37,182	-2,912	14,437	12,538	20,321	20,321
Farm Sales											
\$99,999 or less	12.4	-29.3	-2.6	-4.9	10.7	16,858	-6,582	5,035	7,226	16,611	16,611
\$100,000-\$249,999	26.5	7.9	17.5	15.5	18.3	56,278	14,395	32,460	27,924	33,970	33,970
\$250,000 or over	33.1	16.2	24.1	20.7	22.2	131,255	52,293	80,050	71,688	73,021	73,021
Farm Size*											
1,600 acres or less	25.5	0.0	13.8	9.1	13.3	54,466	6,567	25,914	13,007	19,509	19,509
1,601 acres or over	27.4	6.9	18.9	17.1	20.4	79,343	10,606	40,364	34,253	41,122	41,122
Cropland Tenure											
Full tenant	24.9	-3.7	15.8	5.9	9.8	63,864	7,063	31,977	15,683	22,034	22,034
1-20 percent owned	27.0	9.4	19.3	14.0	20.9	84,277	20,708	51,916	30,874	43,979	43,979
21-40 percent owned	28.3	5.6	18.2	19.8	21.0	71,797	10,098	35,274	44,811	39,705	39,705
41 percent or over owned	26.0	-1.6	15.1	15.7	22.3	52,330	2,760	22,528	18,638	28,738	28,738
Net Farm Income**											
Negative	-4.7	-51.0	-20.3	-23.9	-13.1	-5,150	-25,935	-11,742	-14,925	-11,085	-11,085
\$0-\$24,999	12.7	2.2	7.9	4.3	2.8	20,262	7,125	13,847	11,105	10,638	10,638
\$25,000-\$49,999	24.0	13.4	19.4	16.0	17.9	40,824	29,384	33,663	29,143	30,412	30,412
\$50,000 or more	36.4	23.3	28.4	27.3	30.5	126,492	63,000	83,050	75,393	72,937	72,937
Debt-to-Asset Ratio											
0-40 percent	33.1	9.6	23.2	19.4	22.8	89,062	25,000	52,330	45,692	42,715	42,715
41-70 percent	26.6	7.3	18.7	16.3	17.8	68,066	12,886	33,515	26,172	32,910	32,910
71 percent or more	19.5	-10.0	9.3	-0.3	8.8	32,352	-5,654	13,605	2,110	12,574	12,574
Farmer Age											
34 years or younger	23.5	-1.0	14.1	12.3	19.2	58,021	6,567	27,395	18,655	34,379	34,379
35-44 years	28.6	8.4	20.0	16.3	19.0	79,442	14,020	45,611	33,195	37,001	37,001
45 years or older	25.8	-2.8	14.0	13.3	16.4	55,495	706	24,210	15,417	28,519	28,519

\*Farm size categories in 1995 and 1994 were: 1,200 acres or less, and 1,201 acres or over.

\*\*Net Farm Income categories in 1995 and 1994 were: negative; 0-19,999; 20,000-39,999; and 40,000 or more.

**TABLE 8. REPAYMENT CAPACITY MEASURES, QUARTILE VALUES FOR 1996, MEDIAN VALUES FOR 1994 AND 1995, NORTH DAKOTA FARM BUSINESS MANAGEMENT EDUCATION PROGRAM PARTICIPANTS**

Farm Group	1996			1996			1995			1994		
	Upper Quartile	Lower Quartile	Median	Upper Quartile	Lower Quartile	Median	Upper Quartile	Lower Quartile	Median	Upper Quartile	Lower Quartile	Median
All Farms	2.5	0.5	1.2	1.1	1.3	1.3	31,945	-13,578	5,024	1,652	7,069	
Region												
Red River Valley	3.3	1.1	1.8	1.5	1.5	1.5	68,181	4,128	30,510	17,375	12,449	
North Central	1.8	0.2	0.9	1.0	1.9	1.9	17,375	-18,927	-4,618	-530	15,355	
South Central	3.0	0.5	1.3	0.8	0.9	0.9	42,486	-13,941	9,127	-7,003	-2,046	
West	1.7	0.4	0.9	1.1	1.0	1.0	18,375	-19,804	-1,852	2,932	614	
Farm Enterprise												
Crop	3.1	0.8	1.6	1.3	1.6	1.6	49,775	-8,167	15,319	8,892	13,346	
Livestock	1.3	0.3	0.7	0.6	0.8	0.8	5,868	-20,048	-7,367	-8,115	-3,604	
Mixed	1.3	0.2	0.9	1.0	1.2	1.2	13,345	-24,826	-1,793	57	5,083	
Farm Sales												
\$99,999 or less	1.5	0.1	0.7	0.8	1.2	1.2	4,671	-21,001	-6,607	-3,828	4,316	
\$100,000-\$249,999	2.3	0.5	1.1	1.0	1.3	1.3	24,555	-14,365	2,895	-530	5,775	
\$250,000 or over	3.8	1.1	2.1	1.7	1.5	1.5	87,364	7,350	43,388	32,617	21,564	
Farm Size*												
1,600 acres or less	2.4	0.5	1.3	1.1	1.2	1.2	26,352	-10,014	5,407	1,894	4,212	
1,601 acres or over	2.7	0.5	1.1	1.0	1.4	1.4	44,623	-18,700	3,727	1,144	10,347	
Cropland Tenure												
Full tenant	4.1	0.4	1.6	1.0	1.2	1.2	41,795	-9,852	6,197	228	3,132	
1-20 percent owned	3.1	0.8	1.4	1.0	1.6	1.6	50,532	-5,434	11,599	-407	16,614	
21-40 percent owned	2.3	0.5	1.2	1.4	1.5	1.5	44,212	-16,845	7,916	12,117	11,347	
41 percent or over owned	1.7	0.5	0.9	1.0	1.2	1.2	21,297	-19,405	-1,713	423	4,212	
Net Farm Income**												
Negative	0.5	-0.6	0.1	0.0	-0.1	-0.1	-13,071	-42,724	-26,823	-30,409	-31,705	
\$0-\$24,999	1.5	0.4	0.9	0.8	0.4	0.4	5,743	-15,600	-4,272	-4,067	-8,444	
\$25,000-\$49,999	2.4	0.8	1.3	1.2	1.3	1.3	20,702	-6,085	6,209	5,499	7,638	
\$50,000 or more	4.0	1.5	2.5	2.3	2.3	2.3	86,783	19,663	47,539	38,837	31,970	
Debt-to-Asset Ratio												
0-40 percent	5.8	1.0	2.8	2.4	2.1	2.1	62,887	-527	26,160	18,690	16,664	
41-70 percent	2.1	0.5	1.1	1.1	1.3	1.3	31,747	-13,071	3,489	2,838	7,069	
71 percent or more	1.4	0.2	0.8	0.2	0.4	0.4	9,127	-22,372	-5,427	-20,780	-12,173	
Farmer Age												
34 years or younger	2.3	0.5	1.2	1.1	1.5	1.5	20,931	-8,551	3,577	1,700	12,200	
35-44 years	3.0	0.8	1.3	1.2	1.4	1.4	45,912	-8,759	11,759	9,784	7,565	
45 years or older	2.1	0.3	0.9	0.8	1.2	1.2	26,352	-20,497	-1,091	-4,734	3,132	

\*Farm size categories in 1995 and 1994 were: 1,200 acres or less; and 1,201 acres or over.

\*\*Net Farm Income categories in 1995 and 1994 were: negative; 0-19,999; 20,000-39,999; and 40,000 or more.

TABLE 9. ASSET TURNOVER AND OPERATING EXPENSE AND DEPRECIATION EXPENSE EFFICIENCY MEASURES (AS A PERCENTAGE OF GROSS FARM INCOME), QUARTILE VALUES FOR 1996, MEDIAN VALUES FOR 1994 AND 1995, NORTH DAKOTA FARM BUSINESS MANAGEMENT EDUCATION PROGRAM PARTICIPANTS

Farm Group	1996			1995			1994			1996			1995			1994										
	Upper Quartile	Lower Quartile	Median	Upper Quartile	Lower Quartile	Median	Upper Quartile	Lower Quartile	Median	Upper Quartile	Lower Quartile	Median	Upper Quartile	Lower Quartile	Median	Upper Quartile	Lower Quartile	Median								
	Asset Turnover									Operating Expense (%)									Depreciation Expense (%)							
All Farms	.56	.25	.39	.36	0.4	0.4	57.1	77.0	66.0	67.4	64.9	2.1	9.9	5.6	5.7	4.7										
Region																										
Red River Valley	.70	.43	.54	.48	0.5	0.5	57.2	75.0	64.9	70.2	70.0	1.5	6.6	4.4	4.0	3.3										
North Central	.49	.24	.34	.36	0.4	0.4	57.7	77.1	66.2	65.4	57.7	1.7	9.0	4.5	4.7	4.9										
South Central	.61	.27	.42	.35	0.4	0.4	56.7	76.7	65.9	70.8	67.8	2.8	11.5	7.6	7.9	6.0										
West	.43	.20	.29	.28	0.3	0.3	56.8	81.9	66.7	62.3	60.8	2.7	11.1	6.9	6.8	5.9										
Farm Enterprise																										
Crop	.63	.33	.47	.45	0.4	0.4	56.8	75.1	65.0	67.2	64.5	2.1	8.6	5.0	4.6	4.8										
Livestock	.29	.15	.22	.21	0.3	0.3	57.4	83.2	68.9	68.6	66.8	2.2	17.0	9.2	9.8	3.9										
Mixed	.40	.20	.28	.29	0.3	0.3	58.2	81.9	69.1	71.7	63.7	1.8	11.1	6.4	7.8	6.0										
Farm Sales																										
\$99,999 or less	.35	.14	.22	.24	0.3	0.3	54.2	86.1	71.1	67.3	60.1	2.0	13.8	7.8	8.8	4.8										
\$100,000-\$249,999	.54	.28	.40	.37	0.4	0.4	57.1	75.5	65.8	66.9	64.9	1.8	10.0	5.0	5.8	4.7										
\$250,000 or over	.68	.36	.50	.46	0.5	0.5	57.8	74.1	65.6	69.2	68.3	2.5	8.2	5.2	4.5	4.7										
Farm Size*																										
1,600 acres or less	.57	.25	.40	.34	0.4	0.4	57.0	77.5	65.9	69.2	65.5	1.9	9.3	5.4	6.0	4.3										
1,601 acres or over	.54	.25	.38	.37	0.4	0.4	57.2	75.8	66.0	67.2	64.9	2.4	10.6	5.9	5.6	4.9										
Cropland Tenure																										
Full tenant	.89	.44	.61	.61	0.6	0.6	58.4	80.1	71.3	73.2	72.3	1.5	8.2	4.5	4.8	4.8										
1-20 percent owned	.66	.39	.54	.50	0.6	0.6	57.8	75.7	67.9	71.1	64.9	1.4	8.2	3.7	4.4	3.8										
21-40 percent owned	.50	.31	.40	.41	0.4	0.4	58.2	75.8	66.4	65.1	64.5	2.3	9.9	5.6	5.6	5.2										
41 percent or over owned	.33	.18	.25	.24	0.3	0.3	53.7	75.5	63.6	65.0	59.8	3.2	11.5	7.6	7.2	6.1										
Net Farm Income**																										
Negative	.33	.13	.19	.26	0.3	0.3	77.1	98.5	86.6	90.2	89.5	3.4	19.5	10.4	11.7	8.4										
\$0-\$24,999	.46	.24	.33	.30	0.3	0.3	59.6	78.9	69.1	72.6	72.7	2.8	10.3	6.3	6.6	5.4										
\$25,000-\$49,999	.55	.28	.40	.38	0.4	0.4	56.5	72.6	64.3	66.4	62.0	1.2	8.2	4.9	5.0	4.8										
\$50,000 or more	.69	.37	.49	.44	0.4	0.4	52.3	66.6	59.6	60.6	56.5	1.8	7.6	4.3	4.0	3.9										
Debt-to-Asset Ratio																										
0-40 percent	.50	.25	.35	.33	0.3	0.3	51.4	71.3	59.9	62.3	58.1	2.3	10.6	6.3	5.6	5.5										
41-70 percent	.57	.27	.40	.39	0.4	0.4	58.3	75.5	65.6	67.1	65.9	2.2	9.6	5.6	5.3	4.4										
71 percent or more	.59	.24	.40	.38	0.5	0.5	61.8	83.4	74.5	75.3	71.4	1.9	9.5	5.2	6.3	5.1										
Farmer Age																										
34 years or younger	.71	.32	.49	.48	0.5	0.5	57.7	77.0	67.2	67.4	63.9	1.0	7.9	3.4	4.4	4.2										
35-44 years	.59	.29	.44	.38	0.4	0.4	57.4	75.1	65.6	67.1	65.1	2.2	9.8	5.2	5.7	4.1										
45 years or older	.43	.19	.29	.29	0.3	0.3	56.0	79.5	66.7	68.3	64.5	3.1	11.5	7.0	6.7	6.7										

\*Farm size categories in 1995 and 1994 were: 1,200 acres or less, and 1,201 acres or over.

\*\*Net Farm Income categories in 1995 and 1994 were: negative; 0-19,999; 20,000-39,999; and 40,000 or more.

TABLE 10. INTEREST EXPENSE AND FARM INCOME EFFICIENCY MEASURES (AS A PERCENTAGE OF GROSS FARM INCOME), QUARTILE VALUES FOR 1996, MEDIAN VALUES FOR 1994 AND 1995, NORTH DAKOTA FARM BUSINESS MANAGEMENT EDUCATION PROGRAM PARTICIPANTS

Farm Group	1996			1995			1994				
	Upper Quartile	Lower Quartile	Median	Upper Quartile	Lower Quartile	Median	Upper Quartile	Lower Quartile	Median		
All Farms	4.9	13.3	8.9	8.8	7.6	7.6	28.1	6.6	18.0	16.2	21.7
Region											
Red River Valley	4.0	10.0	6.4	7.0	6.7	6.7	33.1	12.6	22.2	18.6	18.6
North Central	5.0	13.3	9.5	8.4	7.4	7.4	27.7	5.0	19.3	19.4	29.0
South Central	4.4	12.9	8.2	8.9	8.2	8.2	27.6	3.8	17.3	10.5	16.3
West	6.8	16.3	11.7	10.3	10.0	10.0	24.9	0.8	14.3	18.3	23.8
Farm Enterprise											
Crop	4.3	11.3	7.2	7.5	6.8	6.8	31.4	11.6	20.3	19.4	22.5
Livestock	7.0	19.2	12.9	12.7	10.3	10.3	21.4	-12.1	9.4	6.1	15.9
Mixed	7.5	16.7	11.5	10.1	8.8	8.8	24.4	-2.0	12.2	8.4	21.7
Farm Sales											
\$99,999 or less	7.3	22.0	13.3	12.5	8.3	8.3	23.7	-14.4	7.6	11.2	23.4
\$100,000-\$249,999	4.9	13.0	9.5	8.9	8.7	8.7	29.4	8.7	17.6	16.5	21.3
\$250,000 or over	4.0	9.1	6.2	6.3	5.9	5.9	33.3	13.5	21.1	18.5	21.7
Farm Size*											
1,600 acres or less	4.4	13.3	8.6	9.2	8.2	8.2	29.4	7.0	18.0	14.8	21.9
1,601 acres or over	5.2	13.1	9.1	8.5	7.2	7.2	27.1	5.8	18.0	17.0	21.7
Cropland Tenure											
Full tenant	2.3	9.9	5.9	5.5	5.1	5.1	31.2	7.2	17.3	13.7	16.5
1-20 percent owned	4.0	10.3	6.6	7.5	6.5	6.5	30.5	11.7	20.5	16.8	23.8
21-40 percent owned	6.1	11.9	9.3	8.8	8.5	8.5	26.6	5.4	17.3	18.7	22.5
41 percent or over owned	7.4	18.9	12.0	11.4	10.6	10.6	26.6	2.2	16.3	15.1	23.1
Net Farm Income**											
Negative	10.2	22.1	14.6	13.7	12.9	12.9	-5.5	-26.1	-13.2	-15.8	-8.3
\$0-\$24,999	7.3	16.3	11.4	9.7	9.6	9.6	18.2	5.8	11.0	9.2	9.6
\$25,000-\$49,999	4.9	11.5	8.1	8.6	8.8	8.8	30.5	14.2	19.6	17.8	22.6
\$50,000 or more	3.0	8.5	5.9	6.0	5.5	5.5	36.5	21.9	28.2	28.0	32.4
Debt-to-Asset Ratio											
0-40 percent	1.9	7.6	4.0	4.0	4.5	4.5	37.5	16.3	28.2	24.6	29.1
41-70 percent	6.4	14.0	9.9	9.2	9.1	9.1	26.0	8.7	18.4	16.4	18.9
71 percent or more	7.2	18.5	11.3	12.1	11.0	11.0	18.3	-5.5	7.9	1.8	10.5
Farmer Age											
34 years or younger	3.8	12.2	7.8	7.3	6.1	6.1	27.1	7.2	17.5	19.1	22.7
35-44 years	4.6	12.3	7.9	8.0	7.8	7.8	30.7	9.4	20.1	16.8	22.2
45 years or older	5.9	15.4	10.0	10.1	9.3	9.3	25.4	0.8	15.2	12.7	16.6

\*Farm size categories in 1995 and 1994 were: 1,200 acres or less, and 1,201 acres or over.

\*\*Net Farm Income categories in 1995 and 1994 were: negative; 0-19,999; 20,000-39,999; and 40,000 or more.

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