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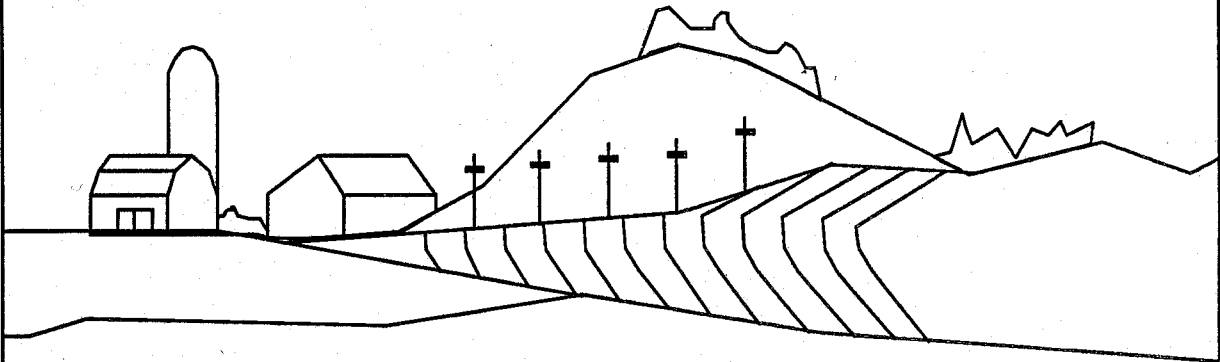
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Entering the 1990s:



An Update of the Financial Status of North Dakota Farm and Ranch Operators

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ENTERING THE 1990s: AN UPDATE OF THE FINANCIAL STATUS OF NORTH DAKOTA FARM AND RANCH OPERATORS

F. Larry Leistritz, David L. Watt, and Janet K. Wanzek*

The year 1989 was difficult for North Dakota farm and ranch operators as many experienced drought conditions. Because the preceding year (1988) had been characterized by the most severe drought conditions that most of the state had faced since the 1930s, many farmers and ranchers began 1989 with grain and feed reserves substantially depleted compared to typical levels. For example, inventories of all wheat on farms in the state totaled 163 million bushels on December 1, 1988 and 93 million bushels on June 1, 1989, compared to 215 million bushels on March 1, 1988 (NASS 1989). Further, while Congress responded to 1989 drought conditions with a special assistance program similar to that implemented in 1988, it seemed likely that the levels of assistance that would be available to most North Dakota producers would be less than in 1988.

Because of the unique combination of conditions prevailing in 1989, many policymakers wanted to learn how these conditions affected the financial status of farmers and ranchers. This report addresses these issues.

Study Procedures

Information was drawn from a 1990 update of the North Dakota longitudinal farm panel study. This study began in 1985 when 933 farm and ranch operators were contacted by telephone regarding their 1984 financial situation and socioeconomic characteristics. Initial screening questions were incorporated into the 1985 survey to ensure that all respondents were less than 65 years old, were operating a farm, considered farming to be their primary occupation, and sold at least \$2,500 of farm products in 1984 (Leholm et al. 1985). These producers were subsequently contacted in 1986, 1988, 1989, and 1990 and asked to provide financial information for the previous year.

The 1990 survey, like those of previous years, was conducted in late March and early April in order to contact producers soon after they had completed their income taxes but before fieldwork began. Producers received a letter before the telephone call asking that they have copies of their 1040F Form and a recent balance sheet available for reference during the interview. This report is based on data from 340 producers who provided information in each of the five surveys. (For more detailed discussions of survey procedures and results of the 1985, 1986, 1988, and 1989 surveys, see Leholm et al. 1985, Leistritz et al. 1987, Leistritz et al. 1989a, and Leistritz et al. 1989b).

Selected characteristics of survey participants are compared to data from the 1987 Census of Agriculture in Table 1. The distribution of farms by region (Figure 1) is comparable between the 1989 and 1990 surveys and between the surveys and the 1987 Census count. The age distribution also is similar between the surveys and the Census except in the two youngest age brackets. This difference probably reflects the fact that there was no procedure for incorporating new farming entrants into the farm panel.

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TABLE 1. DISTRIBUTION OF NORTH DAKOTA FARMS BY REGIONS, ACRES OPERATED, AND AGE OF OPERATOR FROM THE 1987 CENSUS OF AGRICULTURE AND THE 1989 AND 1990 FARM OPERATOR SURVEYS

Item	1987 Census ^a	1989 Survey	1990 Survey
	----- percent -----		
Region:			
West	17.0	15.1	16.3
West Central	34.4	32.8	32.9
East Central	27.4	28.3	28.0
East	21.2	23.8	22.8
Age:^b			
Less than 25	3.2	0.0	0.0
25 to 34	17.6	14.4	13.6
35 to 44	20.0	23.7	24.4
45 to 54	18.5	23.2	25.2
55 or over	40.7	38.7	36.8
Acres Operated:^b			
Less than 180	8.9	3.0	1.5
180 to 499	15.2	9.0	6.5
500 to 999	33.0	23.2	23.9
1,000 to 1,999	26.4	41.2	39.5
2,000 or more	16.7	23.6	28.6

^aSOURCE: U.S. Bureau of the Census. 1989. 1987 Census of Agriculture, North Dakota State and County Data. Washington, D.C.: U.S. Department of Commerce.

^bIncludes only farms whose operator reported farming as his/her principal occupation.

Comparing the distribution of acres operated between the surveys and the Census shows that the surveys included fewer farms in the smallest size groups (less than 500 acres operated).

The remainder of this report is organized into three parts. First, salient characteristics of the farm operation and family situation of respondents are briefly described. Second, effects of the 1989 drought and drought assistance programs are examined, and the off-farm work involvement of farm operators and their spouses in 1989 is briefly reviewed. Finally, the financial situation of farm and ranch operators and their families is assessed by examining their income for 1989 and their balance sheet data as of December 31, 1989.

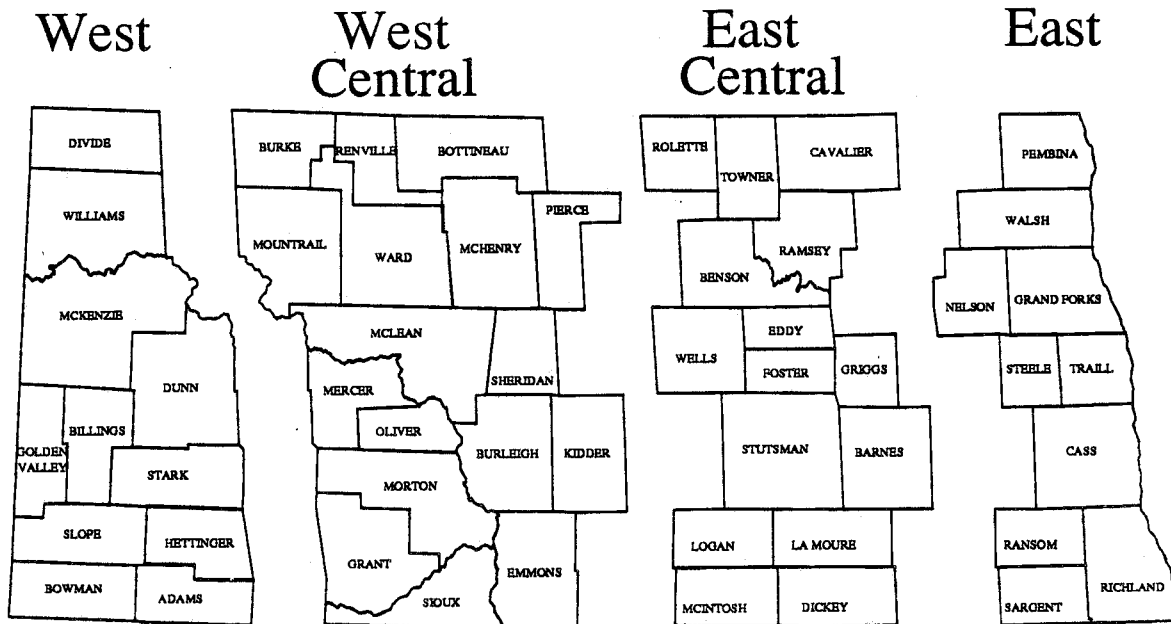


Figure 1. North Dakota Geographic Locations

Farm and Family Characteristics

The total acres operated by farm panel members had increased slightly (2.2 percent) between the 1989 and 1990 surveys (Table 2). (The values shown in Table 2, as in other tables where values for both 1988 and 1989 are reported, are for those producers who provided data for both years.) The overall change in acres operated was comprised of an increase in acres owned (8.4 percent) partially offset by a decrease in acres rented (3.9 percent). When asked how many acres they planned to be farming five years from now, the respondents as a group expected to reduce the size of their operation by an average of about 11 percent.

The typical respondent reported that the farm had been in the family for slightly more than 60 years (Table 3). Only 13 percent reported that the farm had been in the family less than 30 years. More than 31 percent of the respondents began farming during the 1970s. The average household size was 3.4 persons.

Effects of 1989 Drought

Respondents reported drought losses were less severe than in 1988 (Table 4). The statewide losses averaged 46 percent for small grains, 45 percent for row crops, 46 percent for hayland, and 43 percent for pasture. About 60 percent of the respondents received some form of drought assistance, such as crop disaster assistance payments or aid from the Emergency Feed Program or Emergency Feed Assistance Program. For the producers who received drought assistance, crop disaster payments were by far the largest source of aid (Table 5). The 1989 drought assistance payments averaged about half the 1988 level. In contrast, the drought losses (in terms of yields) for 1989 averaged about 70 percent of 1988 levels (Figure 2).

TABLE 2. FARM CHARACTERISTICS OF SURVEY RESPONDENTS,
1989 AND 1990

Item	1989 Survey	1990 Survey
Acres owned (mean) ^a	796.0	863.2
Acres rented to others (mean) ^a	40.4	31.3
Acres rented from others (mean) ^a	970.7	932.9
Total acres operated	1726.2	1764.8
Acres plan to farm five years from now (mean)	--	1563.4

^aAcres owned, rented to others, and rented from others represent the mean for all operators, including those who had no acres in a given category (e.g., acres owned).

The extent of drought losses and magnitude of impact assistance payments varied by region (Appendix Table 1). The west central region (Figure 1) had the highest percentage drought losses and the highest percentage of producers who received drought disaster assistance. The largest average and median crop disaster payments, however, were received by producers in the east central region.

One potential response to drought conditions and associated reductions in farm income is increased off-farm work by farm operators and/or their spouses (Leistritz and Ekstrom 1986). The drought conditions of 1988 and 1989 apparently led to increased off-farm employment for many members of North Dakota farm households. Almost 26 percent of the farm operators surveyed had worked at an off-farm job in 1989 (Table 6), compared to only 19 percent one year earlier. Even more striking is the fact that almost 47 percent of their spouses worked off the farm in 1989, up from 37 percent in 1988.

Farm Financial Situation

Both gross farm income and net cash farm income dropped in 1989 compared to 1988 levels (Table 7). The average net cash farm income reported by survey respondents declined by \$5,162 or 23 percent between 1988 and 1989. The percentage of producers reporting a zero or negative net cash farm income increased from 11 percent in 1988 to 16 percent in 1989.

TABLE 3. FAMILY CHARACTERISTICS OF SURVEY RESPONDENTS, 1990

Item	Units	1990 Survey
Years the Farming Operation Has Been in the Family:		
Mean	No.	63.5
Distribution:		
Less than 10	Percent	1.5
10-29	Percent	11.5
30-49	Percent	18.6
50-69	Percent	23.0
70-99	Percent	30.9
100 or more	Percent	6.5
Year Operator Began Farming		
Before 1950	Percent	15.4
1951-60	Percent	25.3
1961-70	Percent	21.3
1971-80	Percent	31.5
1981-85	Percent	6.5
Number of Persons in Household		
Mean	No.	3.4
Distribution:		
One	Percent	4.4
Two	Percent	31.9
Three	Percent	22.4
Four	Percent	18.9
Five	Percent	14.7
Six or more	Percent	7.7

The average value of farm and personal assets reported by respondents as of December 31, 1989 represented a slight decrease (2.9 percent) compared to the previous year; the median value was unchanged. During the same period, total debt increased by 3.9 percent. These changes in the value of producers' assets and liabilities represent a reversal of the changes observed between 1987 and 1988, when asset values increased and debt decreased (Leistritz et al. 1989b).

Consistent with these changes in the value of assets and liabilities, the average producer's net worth declined (5.7 percent) and average and median values of the debt-to-asset ratio increased. The reader is cautioned, however, that the relatively large increase in the average debt-to-asset ratio resulted in part from the influence of those producers (6.8 percent) whose debts exceeded the value of their assets. The median values may be more reflective of the change experienced by a typical producer.

TABLE 4. DROUGHT LOSSES IN 1988 AND 1989

Item	1989 Survey	1990 Survey
Percent Loss for Small Grains:		
Mean	70.3	45.5
Median	70.0	40.0
Percent Loss for Row Crops:		
Mean	56.6	44.7
Median	55.0	40.0
Percent Loss for Hayland:		
Mean	66.7	45.9
Median	72.5	50.0
Percent Loss for Pasture:		
Mean	59.1	42.9
Median	60.0	50.0
Did Respondent Receive Drought Assistance?		
Yes (percent)	94.2	59.7
No (percent)	5.8	40.3

Values of financial variables are summarized by region in Appendix Table 2. All regions showed a decrease in average gross farm income, and all but the west central region had a decrease in average net cash farm income. Median values, which likely are more reflective of the typical producer's situation, indicated a decline in gross and net income in all four regions. The average value of total assets decreased in three of the four regions (all but the west), and the median value also decreased in three of four regions (all but the west central). The average value of total liabilities increased in three regions, and average net worth decreased in three regions.

The total family income reported by farm households reflected the decrease in net cash farm income from 1988 to 1989. Total farm family income decreased about 17 percent, on average, from 1988 to 1989 (Table 8). This reflects the decrease in net cash farm income, which was only partially offset by increases in off-farm earnings and other nonfarm income.

Conclusions and Implications

Results of the 1990 survey of the North Dakota longitudinal farm panel indicate that 1989 was a less-than-favorable year financially for most of the state's producers. Their 1989 drought losses, while generally less than those incurred in 1988, were still substantial, and

TABLE 5. RECEIPT OF DROUGHT ASSISTANCE BY RESPONDENTS
IN 1989

Item	Value
Amount Received for Crop Disaster Payments:	
Mean	\$8,512
Median	\$4,918
Amount Received from Emergency Feed Program:	
Mean	\$375
Median	\$0
Amount Received from Emergency Feed Assistance Program:	
Mean	\$166
Median	\$0
Amount of Advanced Deficiency Payments That Were Forgiven:	
Mean	\$239
Median	\$0
Total Drought Assistance Payments Received:	
Mean	\$8,715
Median	\$4,827

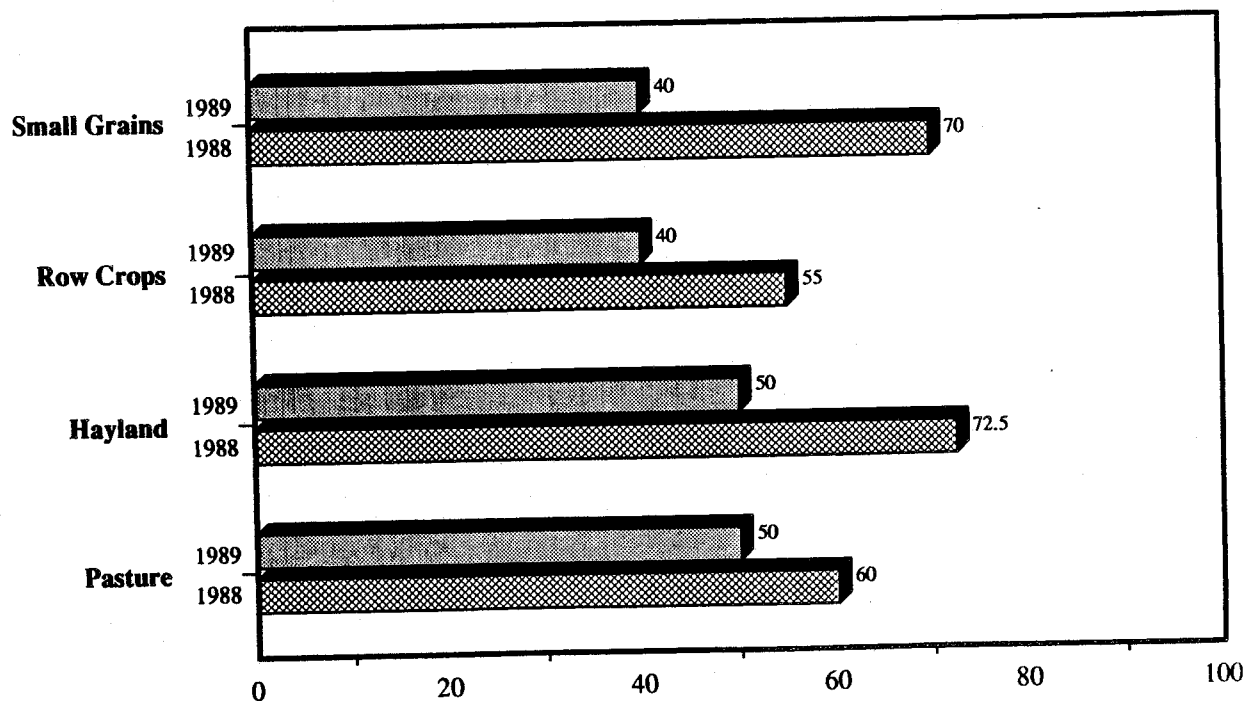


Figure 2. Drought Losses, 1989 and 1988 (median values)

TABLE 6. OFF-FARM WORK BY FARM OPERATORS AND SPOUSES, 1989

Item	Unit	1988 Survey	1989 Survey
Did Operator Work Off the Farm?			
Yes	Percent	19.2	25.7
No	Percent	80.8	74.3
How Many Days Operator Worked (at least 4 hours) Off the Farm:			
Mean	No.	--	105
Median	No.	--	70
Did Spouse Work Off the Farm?			
Yes	Percent	37.4	46.8
No	Percent	62.6	53.2
How Many Days Spouse Worked (at least 4 hours) Off the Farm:			
Mean	No.	--	149
Median	No.	--	180

the federal drought assistance received by the typical producer was much less than in 1988. Therefore, the typical producer's net cash farm income was substantially lower in 1989 than in 1988. Most producer's balance sheets also deteriorated during 1989. Asset values decreased slightly and debt increased during 1989, resulting in declining net worth for the average producer.

The debt-to-asset ratio of producers has been used frequently as an index of vulnerability to financial problems (Leistritz and Ekstrom 1988). A number of analysts have indicated that a debt-to-asset ratio greater than 0.7 generally indicates extreme financial vulnerability. Often producers who are so highly leveraged cannot meet their interest payments and other current expenses out of current income, and many have difficulty making principal payments (Johnson et al. 1986; Jolly and Barkema 1985). The survey results indicate that the percentage of North Dakota producers who fall into this financially vulnerable category increased during 1989, rising from 14.1 percent as of December 31, 1988 to 17.1 percent as of December 31, 1989. This change represents a reversal of a pattern of financial recovery which had begun in 1987 and indicates the need for policymakers' continued attention to the farm financial situation.

While all areas of North Dakota have suffered from the drought conditions of the past two years, the west central region appears to have been the worst hit in 1989 with the most severe yield losses, the lowest level of net cash farm income, the lowest level of operator net worth, and the largest percentage decrease in net worth.

TABLE 7. SELECTED FINANCIAL ITEMS FOR NORTH DAKOTA FARM AND RANCH OPERATORS

Item	Unit	1988	1989
Gross Farm Income:			
Mean	Dollars	124,903	119,250
Median	Dollars	90,000	80,701
Distribution:			
Less than \$40,000	Percent	13.0	20.1
\$40,000 - \$99,999	Percent	42.4	39.3
\$100,000 - \$249,999	Percent	34.4	30.0
\$250,000 - \$499,999	Percent	7.7	7.9
\$500,000 or more	Percent	2.5	2.6
Net Cash Farm Income:			
Mean	Dollars	22,441	17,279
Median	Dollars	17,000	10,177
Distribution:			
Zero or negative	Percent	11.2	16.4
\$1 to \$4,999	Percent	7.3	15.4
\$5,000 to \$9,999	Percent	12.1	16.8
\$10,000 to \$24,999	Percent	36.4	29.2
\$25,000 or more	Percent	32.9	22.1
Total Assets:			
Mean	Dollars	419,047	407,162
Median	Dollars	300,000	300,000
Total Debt:			
Mean	Dollars	133,991	139,279
Median	Dollars	90,000	100,000
Net Worth:			
Mean	Dollars	285,891	269,633
Median	Dollars	185,000	175,000
Debt-to-Asset Ratio:			
Mean	Percent	38.0	55.5
Median	Percent	30.0	33.6
Distribution:			
No debt	Percent	16.3	13.5
0.01 to 0.40	Percent	47.1	44.1
0.41 to 0.70	Percent	22.5	26.4
0.71 to 1.00	Percent	9.8	9.3
More than 1.00	Percent	4.3	6.8

TABLE 8. TOTAL FARM FAMILY INCOME, NORTH DAKOTA, 1988 AND 1989

Item	Unit	1988	1989
Net Cash Farm Income	Percent	74.7	62.0
Off-Farm Earnings	Percent	15.3	19.5
Other Nonfarm Income	Percent	10.0	18.5
Total Farm Family Income	Dollars	\$31,537	\$26,165

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APPENDIX TABLE 1. DROUGHT EFFECTS IN 1989 BY REGION

Item	Region			
	West	West Central	East Central	East
Percent Yield Loss for Small Grain:				
Mean	41.9	62.0	45.7	27.4
Median	42.5	64.0	45.0	25.0
Percent Yield Loss for Row Crops:				
Mean	47.5	62.3	36.5	39.5
Median	55.0	72.5	30.0	33.0
Percent Yield Loss for Hayland:				
Mean	45.4	58.1	48.7	25.5
Median	50.0	60.0	50.0	20.0
Percent Yield Loss for Pasture:				
Mean	44.8	57.0	42.3	20.3
Median	50.0	50.0	50.0	10.0
Respondent Received Disaster Assistance (Percent)				
	61.3	75.0	60.6	41.1
Amount of Crop Disaster Payments Received:				
Mean (Dollars)	6,613	8,831	10,508	7,042
Median (Dollars)	1,656	5,000	7,500	3,919

APPENDIX TABLE 2. SELECTED FINANCIAL ITEMS FOR NORTH DAKOTA FARM AND RANCH OPERATORS BY REGION

Item	Unit	West		West Central		East Central		East	
		1988	1989	1988	1989	1988	1989	1988	1989
Gross Farm Income:									
Mean	Dollars	110,389	102,952	94,503	89,261	144,788	132,942	156,727	155,371
Median	Dollars	75,000	71,400	80,000	60,000	92,250	86,957	134,500	120,000
Distribution:									
Less than \$40,000	Percent	15.1	17.4	12.5	27.0	13.3	16.7	10.3	14.9
\$40,000 - \$99,999	Percent	49.1	58.7	57.3	43.8	40.0	40.5	20.6	22.4
\$100,000 - \$249,999	Percent	30.2	19.6	25.0	22.5	31.1	29.8	52.9	44.8
\$250,000 - \$499,999	Percent	1.9	0.0	4.2	6.7	12.2	8.3	13.2	14.9
\$500,000 or more	Percent	3.8	4.3	1.0	0.0	3.3	4.8	2.9	3.0
Net Cash Farm Income:									
Mean	Dollars	21,695	17,779	14,526	15,174	23,162	20,652	31,389	16,054
Median	Dollars	15,500	9,460	13,000	8,586	15,000	11,987	26,674	15,255
Distribution:									
Zero or negative	Percent	8.3	22.2	16.1	12.8	10.3	11.9	10.1	20.9
\$1 to \$4,999	Percent	16.7	13.3	7.5	20.9	5.7	15.5	2.9	10.4
\$5,000 to \$9,999	Percent	12.5	17.8	14.0	20.9	16.1	16.7	2.9	11.9
\$10,000 or \$24,999	Percent	41.7	26.7	41.9	29.1	37.9	29.8	27.5	31.3
\$25,000 or more	Percent	20.8	20.0	20.4	16.3	29.9	26.2	56.5	25.4

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APPENDIX TABLE 2. SELECTED FINANCIAL ITEMS FOR NORTH DAKOTA FARM AND RANCH OPERATORS BY REGION
(CONTINUED)

Item	Unit	West		West Central		East Central		East	
		1988	1989	1988	1989	1988	1989	1988	1989
Total Assets:									
Mean	Dollars	473,310	501,767	337,438	327,797	445,533	404,004	518,675	509,723
Median	Dollars	300,000	286,000	291,500	294,100	324,000	300,000	451,000	385,000
Total Debt:									
Mean	Dollars	158,142	161,759	119,106	138,123	137,697	125,452	156,000	162,035
Median	Dollars	80,000	100,000	100,000	100,000	81,000	100,000	114,000	100,000
Net Worth:									
Mean	Dollars	312,492	348,278	219,110	190,552	310,622	280,517	364,117	344,209
Median	Dollars	173,000	168,000	150,000	150,000	229,600	200,000	237,597	214,000
Debt-to-Asset Ratio:									
Mean	Percent	52.5	39.1	37.7	90.2	36.4	35.4	34.8	46.7
Median	Percent	32.0	30.0	32.4	38.9	28.0	32.2	30.0	33.3
Distribution:									
No Debt	Percent	10.2	7.8	14.6	12.4	21.6	20.9	14.9	10.4
0.01 to 0.40	Percent	46.9	52.9	48.5	43.8	42.0	38.4	49.3	47.8
0.41 to 0.70	Percent	22.4	17.6	21.4	22.5	21.6	30.2	25.4	34.3
0.71 to 1.00	Percent	12.2	15.7	12.6	11.2	8.0	5.8	9.0	3.0
More than 1.00	Percent	8.2	5.9	2.9	10.1	6.8	4.7	1.5	4.5