Farm Financial Stress in North Dakota: Selected Characteristics of Farm and Ranch Operations

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American farmers are facing their most severe financial crisis since the 1930s. An unprecedented proportion of farmers are likely to be forced to quit farming in the next two to five years as a result of low commodity prices, high interest rates, and falling land values.

The U.S. Department of Agriculture (1985) estimates that nearly 20 percent of all farmers have debt-to-asset ratios of over 40 percent, a ratio that will cause substantial financial stress on many farms. A recent survey funded by the North Dakota Department of Agriculture and conducted by the North Dakota Crop and Livestock Reporting Service and North Dakota State University indicated that 36 percent of North Dakota farm and ranch operators already had such debt-to-asset ratios (Pederson et al. 1985).

A rapid increase in the number of farm failures is likely to lead to a substantial decline in the total number of farms and farm families in North Dakota. A decline in farm numbers could, in turn, have very serious implications not only for the affected farm families but also for agribusiness firms, for the entire trade and service sector in many of the state's agricultural trade centers, and for such public services as primary and secondary schools.

This article presents the results of a random telephone survey of 933 North Dakota farmers conducted in March and April 1985. Initial screening questions in these interviews were used 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. A comparison of data with the 1982 Census of Agriculture for North Dakota revealed a close correspondence by age and by number of farms in each of the eight state planning regions.

Specific characteristics examined in the survey included the following:

1. Demographic characteristics, such as age, marital status, education, and previous migration patterns
2. Employment history and vocational skills and preferences
3. Participation in community organizations and activities
4. Marketing and trading patterns
5. Farm characteristics, such as acreage operated, principal enterprises, and type of business organization
6. Financial characteristics, such as levels of assets, debt, and income and sources of credit

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Demographic Characteristics

The average age of these operators was 45.1 years. Only 3 percent of those surveyed were less than 25 years old while 43.9 percent were between 25 and 44. The average age of spouses was 42.7.

Almost 86 percent of the operators surveyed were married. The average household size was 3.5, and the median household size was two.

Most of the farm operators surveyed had lived almost all their lives in the county where they now resided. About 60 percent of these operators had never lived outside their present county of residence for more than one year.

About three-fourths of the respondents had completed at least high school, and about 39 percent had attended college or received some other form of postsecondary education; their spouses had slightly higher levels of educational attainment.

Employment Characteristics

Of the operators surveyed, 24 percent had worked off the farm in 1984, but only 24 percent of these had worked full-time (at least one 40-hour week). About 29 percent of the spouses were employed off the farm, and 41 percent of these worked at full-time jobs.

Only 15 percent of the operators who were otherwise employed reported working more than 200 days off the farm while 32 percent had worked 100 to 200 days. On the other hand, about 40 percent of employed spouses had worked more than 200 days off the farm, and another 37 percent had worked 100 to 200 days.

About one-third of those operators who were employed off the farm had worked at jobs for less than three years, about 40 percent had worked off the farm for three to 10 years, and 26 percent had worked longer than 10 years.

Operators' experience in full-time off-farm employment was relatively limited. Of the respondents, 43.5 percent had never worked in a full-time job off the farm, and an additional 33 percent had less than five years of such experience.

A relatively small, but important, percentage of the survey respondents and spouses who were not already working off the farm planned to seek off-farm jobs in 1985—9.6 percent of the operators and 6.6 percent of the spouses.

Organizational Participation

Church was the most common form of organization of which these families were members (91.6 percent), followed by farm organizations (70.3 percent) and community service clubs (40.1 percent).

A substantial majority of the farm operators surveyed (64 percent) attended extension meetings or experiment station field days. About half of the respondents also requested publications or enrolled in short courses.

Marketing and Trade Patterns

Spring wheat was the principal crop produced by 65 percent of the operators; another 12.5 percent reported durum wheat to be their major crop, and 6.4 percent reported it to be sunflower. Sixty percent of the farmers marketed their grain with an elevator located within 10 miles of their farm.

Livestock were produced by 563 farms, or about 60 percent of the total sample. (The 1982 Census of Agriculture reports that 56.8 percent of all North Dakota farms raised livestock.) Of the surveyed livestock producers, 80 percent reported beef cattle as their principal livestock enterprise. The average distance to their livestock market was about 65 miles, and about 44 percent of the producers reported distances greater than 50 miles.

The average distance traveled to obtain the convenience items of food, hardware, and banking services fell in the range of 16.7 to 18.2 miles; average distances traveled to obtain furniture and automobiles were 36.5 and 32.6 miles, respectively. Average distance to the farmer's primary farm machinery dealer was 21.1 miles. About 29 percent of the respondents obtained machinery from a supplier located within 10 miles, whereas about 27 percent traveled 26 miles or more.

Farm Characteristics

The acreage operated by surveyed farmers averaged 1,623 acres with about 80 percent of the farms falling in the range of 500 to 3,000 acres. Cropland (including tame hayland) accounted for about 72 percent of the typical farm operation.

Overall, the respondents owned about 50 percent of the land they farmed. Only 13 percent of the respondents owned no land, but only 21 percent owned 90 percent or more of the land they operated.

The sole proprietorship was the predominant form of farm business organization in North Dakota. Seventeen percent reported a partnership organization, almost invariable with relatives as the other partners, and about 3 percent were part of a family corporation.

Financial Characteristics

When the respondents' estimates of their total debt and assets were averaged the following resulted: average total debt was $139,870 and average total asset value was $423,042 (Table 1); this translates into a total-debt to total-asset ratio of 33.06 percent. In other words, the average operator in North Dakota was carrying 33.06 cents of debt for every dollar of assets he controlled. Some 17.3 percent of the farm operators had no debt against their business, and an additional 43.8 percent had less than $100,000 of total debt.

Table 1. Distribution of Total Assets and Debt of North Dakota Farmers

Range	Distribution of Assets	Distribution of Debt
	(--------percent	of farmers--------)
No Debt		17.3
$1 - $49,999	5.0	25.2
$50,000 - $99,999	9.7	18.6
$100,000 - $249,999	34.9	23.9
$250,000 - $499,999	36.4	10.4
$500,000 - $999,999	8.5	3.9
$1,000,000 and over	5.5	0.7
TOTAL	100.0	100.0
Average Total Assets	$423,042	
Average Total Debt	$139,870	

Nearly 57 percent of the total assets were held as long-term assets such as land and buildings with a useful life of over 10 years. Intermediate-term assets (e.g., machinery and breeding livestock) and current-term assets accounted for 31.0 percent and 11.9 percent, respectively, of the average total assets of the respondents.

The average long-term debt as a percentage of total debt was 54.1 percent. Intermediate-term and current-term debt accounted for 35.8 percent and 9.5 percent, respectively, of the average total debt.

The total-asset and total-debt information obtained from the respondents represents a snapshot of the financial picture of North Dakota farmers as of January 1, 1985. One of the better indicators of the financial health of a farm business is the debt-to-asset ratio. Farmers with debt-to-asset ratios below 40 percent may not be making a very good return to management and on their capital investment but are usually able to meet their out-of-pocket expenses. Farmers with debt-to-asset ratios between 41 and 70 percent are in a satisfactory to weak financial position but are also usually able to meet their out-of-pocket expenses. Most farmers with debt-to-asset ratios exceeding 70 percent are currently experiencing extreme difficulty meeting cash flow needs of the farm and for family living.

Just over three-fifths of the farmers sampled in this survey had debt-to-asset ratios below 40 percent, which is considered to be a strong financial position. An additional 23.6 percent of the farmers had debt-to-asset ratios between 41 and 70 percent, which is a satisfactory to weak financial position, but nearly 15 percent of the farmers had debt-to-asset ratios in the weak category of 70 percent or more.

The average gross cash farm income of North Dakota farmers responding to the survey was $105,347 (Table 2), and their average net cash farm income was $14,897 (Table 3). Gross farm income included all cash sales of grain and livestock including government payments and custom work performed for others. Net cash farm income included gross cash farm income less gross cash farm and depreciation expenses in 1984. Although the average net cash farm income for the respondents was $14,897, some 21 percent of the farmers had a negative net cash farm income in 1984.

Table 2. Distribution of Gross Cash Farm Income of North Dakota Farmers

Range	Percent of Farmers
$0 - $9,999	1.1
$10,000 - $19,999	4.3
$20,000 - $39,999	15.7
$40,000 - $99,999	40.1
$100,000 - $249,999	31.6
$250,000 - $499,999	5.1
$500,000 and over	2.1
TOTAL	100.0

Average Gross Cash Farm Income: $105,347.00

Detailed Characteristics of North Dakota Farm Operators

Because of the relative importance of the amount of debt farm operators are carrying, many of the farm operator's characteristics in this section are described by debt-to-asset ratio categories. The detailed items discussed are demographic, income and employment characteristics; trade patterns; community involvement; and satisfaction with farming.

Demographic Characteristics

Fifty-three percent of the farm operators who started farming in the 1970s or 1980s had debt-to-asset ratios greater than 40 percent while over 78 percent of the operators who started farming before 1960 had debt-to-asset ratios of 40 percent or less (Table 4). Seventy-seven percent of the farmers with no debt were between the ages of 50 and 64 (Table 5).

Farm families with debt had a substantially larger household size than farm families with no debt. Two-thirds of the farm families carrying over 40 percent debt loads had children under the age of 19, but only 30 percent of the families with no debt had children under 19. Farm families with over 70 percent debt had an average 1.5 children under 19 years old, compared to 0.8 children for the entire sample. Because families with higher debt are more vulnerable to financial failure, a substantial impact on the primary and secondary schools in North Dakota appears very possible.

Table 3. Distribution of Net Cash Farm Income by Debt-To-Asset Ratio Categories of North Dakota Farmers

Range	No Debt	1% to 40% Debt	41% to 70% Debt	Over 70% Debt	Total[a]
	(percent of farmers)				
Negative	8.97	14.40	30.41	42.11	21.01
$0 - $4,999	5.52	10.67	6.70	11.40	8.94
$5,000 - $9,999	13.10	10.40	19.07	11.40	13.04
$10,000 - $19,999	28.97	28.27	19.59	20.18	25.24
$20,000 - $29,999	11.72	12.80	9.28	8.77	11.23
$30,000 - $49,999	22.76	12.53	10.82	5.26	12.92
$50,000 and over	8.97	10.93	4.12	0.88	7.61
TOTAL	100.00	100.00	100.00	100.00	100.00

Average Net Cash Farm Income: $14,897.00

[a] Total column based on all farmers who responded to net farm income question.

Table 4. Year Started Farming by Debt-To-Asset Ratio Categories of North Dakota Farmers

Year Started	No Debt	1% to 40% Debt	41% to 70% Debt	Over 70% Debt	Total Row
	(Percent)				
before 1950	39.07	45.03	7.95	7.95	100.00
1950-1959	22.11	50.75	19.60	7.54	100.00
1960-1969	8.65	50.81	29.73	10.81	100.00
1970-1979	7.78	39.26	30.37	22.59	100.00
after 1980	8.86	37.97	25.32	27.85	100.00

Table 5. Age of Respondent by Debt-To-Asset Ratio Categories of North Dakota Farmers

Age	No Debt	1% to 40% Debt	41% to 70% Debt	Over 70% Debt
	(Percent)			
less than 30	6.12	8.77	16.35	23.85
30-39	10.20	22.06	32.21	30.77
40-49	6.80	27.07	27.88	23.85
50-59	45.58	29.32	20.19	16.15
60-64	31.29	12.78	3.37	5.38
TOTAL	100.00	100.00	100.00	100.00

Income Characterisitics

A substantially higher percentage of farmers with over 40 percent debt had gross farm incomes in the $40,000 to $250,000 range than farmers with no debt. Over 42 percent of the farmers with more than 70 percent debt suffered negative net cash farm income, but only about 9 percent of the farmers with no debt had negative net cash farm income in 1984 (Table 3). It appears that a farmer's debt-to-asset ratio affects his net income more than his gross income, although obviously very high net cash farm incomes are correlated with high gross farm incomes.

Contrary to conventional thinking, there was little relationship between the farm operator's age and negative cash farm incomes. A major implication of the relationship between age and net cash farm income is that many farmers in each age group lost significant equity in 1984 beyond the obvious declines in land and machinery values. Even after accounting for the off-farm income of farm families, at least 40 percent of all farmers in all age categories lost equity in 1984.

Employment Characteristics

Farm operators and their spouses with high debt-to-asset ratios were more likely to seek work off the farm than their less highly leveraged counterparts. Of the operators with debt-to-asset ratios over 70 percent, about 36 percent worked off the farm in 1984, compared to about 25 percent for the total sample. About 39 percent of the respondents with debt-to-asset ratios of 41 to 70 percent either worked off the farm or planned to seek off-farm jobs, and more than 51 percent of the farm operators with debt-to-asset ratios over 70 percent either worked off the farm or planned to seek off-farm employment, compared to 34 percent of farm operators for the entire sample.

Highly leveraged operators who worked off the farm were also more frequently employed full-time than those with lighter debt loads. Yet, more than one-third of the operators in the two highly leveraged categories had no experience in full-time nonfarm employment. Further, more than 60 percent of the operators in each category had three years' employment experience or less.

Trade Patterns and Community Participation

Trade patterns of farm families and their participation in community activities appear to be affected relatively little by their financial status.

Satisfaction of Farm Families With Farming

Over 83 percent of all the farmers surveyed were satisfied with farming as an occupation. Farmers were also asked how satisfied they were with current financial returns to agriculture. One-half of the respondents with debt between 41 and 70 percent, and 61 percent of those with debt over 70 percent were dissatisfied with current financial returns in agriculture, compared to 42 percent for the overall sample.

Farmers were asked whether they would be expanding their farm operations during the next three years.

Almost one-fourth of all farmers thought expansion was likely, but nearly two-thirds of all operators felt it was unlikely (the remainder were uncertain). It is interesting to note that more of the most highly leveraged farmers felt expansion was more likely than farmers with no debt.

Respondents also were asked whether they felt they could continue farming for at least three years. About three-fourths of all producers said it was likely that they would be able to continue. The most highly leveraged farmers were less optimistic, however; one-half of the operators with debt-to-asset ratios over 70 percent felt they were likely to be able to continue. Overall, 7 percent of all farmers surveyed felt their chances of being able to continue farming over the next three years were unlikely.

In addition, farmers were asked if they thought the state government should provide assistance to financially stressed farmers. Just over 45 percent of all respondents thought that state government should provide assistance. Farmers with no debt were almost two to one against state help while over 58 percent of the operators with over 70 percent debt felt that state government should help financially stressed farmers.

Finally, farmers were asked if the federal government should assist financially stressed farmers. Over 55 percent of all respondents felt the federal government should help those who are financially stressed. Only 44 percent of the respondents with no debt favored federal assistance, compared to 63 percent of the farmers with over 40 percent debt.

Summary and Implications

Despite recent declines in asset values, the overall solvency of North Dakota agriculture remains quite sound. The average farm operator had 33.06 cents of debt against every dollar of assets he controlled. Yet, at least 40 percent of farmers regardless of age were unable to cash flow their farm operations and households when family living expenses, taxes, and principal payments were subtracted from net cash farm income. The liquidity of North Dakota farmers as a whole is not nearly as favorable as their solvency.

The financial problems that many North Dakota farmers are experiencing are aggravated in large measure from an uneven distribution of farm debt. Of the survey respondents, 17.3 percent had no debt and an additional 44.5 percent had debt-to-asset ratios of less than 40 percent. Thus, more than 60 percent of the respondents appear to be in relatively strong financial positions. However, the operators with debt-to-asset ratios between 41 and 70 percent (23.6 percent) and particularly those with debt-to-asset ratios exceeding 70 percent (14.6 percent) are probably experiencing considerable financial stress.

This study revealed that many farm families will be seeking off-farm employment to supplement their farm earnings. As increasing numbers of farm families seek off-farm employment, the proportion that will be unsuccessful in finding work is expected to be relatively high because of the financial problems of nonfarm businesses.

At a statewide level, there was very little difference in the marketing and trade patterns of farm families by the amount of debt they were carrying. Although further analysis of the state by region needs to be conducted, the apparent implication is that if farmers with high debt-to-asset ratios are forced out of farming there will not be a disproportionate effect on any particular size of town.

Farmers as a group were satisfied with farming as an occupation but very displeased with the financial returns from farming. Although farmers were unhappy with the financial returns to agriculture, less than 7 percent felt they would be unable to continue farming during the next three years.

Further analysis of the data will be conducted in the near future by state planning region. Results of this analysis will appear in a future issue. Copies of a more detailed discussion of this survey can be obtained by writing to the Agricultural Economics Department at North Dakota State University and asking for Ag. Econ. Report No. 199.

Literature Cited

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