

SAVINGS AND INVESTMENTS
OF NORTH DAKOTA FARMERS

By

Cole R. Gustafson

and

Sydney L. Chama

Acknowledgments

Thanks to the North Dakota farmers who completed our questionnaire. Thanks also to the North Dakota Agricultural Experiment Station for the resources to undertake the study. We acknowledge the constructive comments of Larry Leistritz, Andrew Swenson, and David Watt; the editing of Charlene Lucken, and the diligent typing of Carol Jensen.

Table of Contents

	<u>Page</u>
List of Tables	iii
Highlights	v
Background	2
Secondary Impacts	2
Survey Methods	3
Pretest and Survey Mailing	3
Data Analysis	4
Survey Response Rate	4
Nonresponse Bias	5
Follow-up Procedures	5
Population Test for Nonresponse Bias	5
Respondent Test for Nonresponse Bias	5
Sample Description	8
Socioeconomic Characteristics	8
Savings Objectives	10
Nonfarm Investments	10
Investment Criteria	11
Respondents' Attitudes	14
Level of Investment Information	17
Measures of Association	18
Cross-tabulation	18
Rank Order Correlation Analysis	22
Conclusion	23
References	27
Appendix I	29
Appendix II	33

List of Tables

<u>Table</u>	<u>Page</u>
1 Response Rates by Mailings, 1991 Farm Saving and Investment Survey	4
2 Distribution of North Dakota Farms by Regions, Acres Operated, and Age of Operator From 1987 Census of Agriculture and 1991 Farm Saving and Investment Survey . .	6
3 Significance Tests of Differences Between Respondents and Nonrespondents	7
4 Socioeconomic Characteristics of North Dakota Farm Operators, 1991 Farm Saving and Investment Survey	9
5 Percentage of Respondents Indicating the Importance of Savings Objectives	10
6 Frequency of Farmers Holding Various Financial Assets . . .	10
7 Proportion of Respondents' Financial Assets by Asset Category and Investment Value	11
8 Geographical Location of Financial Assets	12
9 Geographical Location of Financial Assets by Investment Value	13
10 Planned Changes in Portfolio Composition	13
11 Percentage Distribution of Respondents on the Importance of Investment Characteristics	14
12 Distribution of Respondents' Marginal Investments and Weight Allocation	16
13 Distribution of Respondents by Risk Attitudes	16
14 Distribution of Respondents by the Desire to Help Local Economy	17
15 Distribution of Respondents by Levels of Investment Information	18
16 Effect of Socioeconomic Characteristics on Saving Purposes, Risk Attitudes, and Levels of Information	19
17 Percentage of Respondents With Various Financial Assets by Net Farm Income	20
18 Percentage of Respondents With Various Financial Assets by Asset Position	21

List of Tables (Continued)

<u>Table</u>		<u>Page</u>
19	Percentage of Respondents With Various Financial Assets by Age	21
20	Percentage of Respondents With Various Financial Assets by Education Level	22
21	Correlations Among Respondents' Investment Levels and Age, Family Size, and Education Level	24
22	Correlations Among Respondents' Investment Levels and Net Farm Income and Asset Position	25

Highlights

Off-farm financial investments, such as stocks, bonds, mutual funds, and certificates of deposit, can offer farmers significant opportunities for diversification. Moreover, deregulation of financial markets in the 1980s enhanced the ability of farmers to invest in these financial assets.

This study reports the results of a mail survey to 473 North Dakota farmers to identify the type and size of financial assets these farmers hold, their geographic placement, and their motives for investment.

The 119 North Dakota farmers who responded to this survey had not taken advantage of the financial innovations deregulation that financial markets afford. Their investments were concentrated in local savings accounts, checking accounts, and farm real estate. Few respondents had investments outside the state. Less than a third of the respondents held mutual funds, government securities, or common stocks. Nearly all of the respondents managed their own investment portfolios and were concerned primarily with the yield and safety of financial assets. The respondents saved primarily for emergency and retirement.

Savings and Investments of North Dakota Farmers
Cole R. Gustafson and Sydney L. Chama*

During the farm financial crisis of the 1980s, numerous surveys at national, state, and regional levels sought to determine the financial position of farmers with differing socioeconomic and structural characteristics (USDA, Jolley et al.). Information from these surveys was used to formulate targeted public responses to the financial crisis; to assist lenders in quantifying the depth and duration of the problem as it affected their financial institutions' profitability, capitalization, and risk-bearing capacity; and to aid farmers in making the financial, production, and household resource adjustments to cope with the prevailing economic environment.

While significant research focused on farm operators with high financial leverage, little attention was placed on the financial management strategies of farmers with high levels of equity and corresponding low levels of debt. They, too, faced an increasingly complicated decision environment in the 1980s. The deregulation of U.S. financial markets led to the introduction of new financial products and a need for new investment strategies. High-equity farmers are likely to have significant holdings of financial assets. Seventy-five percent of North Dakota's farmers, for example, have off-farm investments exceeding \$22,000 (Gustafson, Nielsen, and Morehart).

Penson reported that yields of equities, government bonds, and time and savings accounts are important determinants of demand for financial assets in the farm sector. Financial assets also offer unique diversification opportunities to farmers. Although earlier portfolio studies (Barry, 1980; Bjornson and Innes; Irwin et al.; and Monke et al.) reported that returns on nonfarm assets were slightly lower than returns on agricultural assets of comparable systematic risk, investment in financial assets is an attractive means of diversification for many farmers.

Although the yield and diversification of financial assets are important to farmers, little is known about the size, geographic placement, income return, and risk characteristics of actual investments North Dakota farmers hold. The alternative investments of these individuals have important ramifications for the financial well-being and resiliency of highly solvent farms, the availability of investment/venture capital for rural economic development, and the competitiveness of rural financial institutions.

The objectives of this study were to identify the type of financial assets North Dakota farmers hold and to relate their investment selections to the socioeconomic characteristics of the farm unit. The following sections describe the economic implications of farmers' alternative investment selections, the survey, and the results.

*The authors are, respectively, associate professor and former graduate research assistant in the Department of Agricultural Economics, North Dakota State University, Fargo.

Background

Before 1980, financial markets were highly regulated to safeguard savers and investors, to standardize instruments and practices, to modify competition, and to respond to imperfections and gaps in financial markets (Barry, 1981). However, these regulations discouraged deposits at financial institutions when interest rates rose in the latter 1970s, induced financial innovations to circumvent existing regulations, reduced financial intermediation, and impeded flows of funds. As a result, financial market deregulation in the early 1980s removed price ceilings on loans and deposits, limited controls on ownership forms and geographic scope of financial institutions, and expanded the types of products and services that depository institutions could offer.

Deregulation has enabled farmers to make additional investments, ranging from interest-bearing checking accounts and money market funds at local banks to mutual and venture capital funds across the nation (Barry and Barnard). This new environment gives rise to the question of whether farmers have taken advantage of new investment opportunities or have continued to rely on traditional financial institutions.

Financial assets available to farmers differ considerably in terms of the following investment characteristics: yield, safety, liquidity, inflation hedge, convenience, and tax status. Consequently, the optimal amount of a given farmer's portfolio invested in financial assets is likely to change as the array of financial assets expands.

Secondary Impacts

The secondary impacts of farmers' financial asset selections have important implications for rural economic development and the prosperity of rural financial institutions. Farmers' placement of financial capital in local financial institutions enhances their ability to lend locally and stimulates economic activity.

Several studies have quantified the impact of local commercial bank-lending decisions on community development. Dreese identified specific bank-lending policies that heightened economic growth in Appalachia. Minsky found that commercial bank-lending policies and financial services contributed greatly to California's economic development. Pariser concluded that efficient, well-managed commercial banks in North Dakota complemented community economic development.

However, greater community economic activity also increases the prosperity of rural financial institutions, which, in turn, enhances their ability to lend locally. Gustafson and Beauclair quantified the simultaneous relationship that exists between community development and commercial bank performance. Their results indicated a strong circular relationship whereby economic activity at the retail, wholesale, and farm levels in North Dakota is strongly influenced by

commercial bank lending policies, which, in turn, raises bank profits and the availability of loanable funds.

Survey Methods

A random mail survey was sent to 473 North Dakota farmers to obtain information on their motives for saving and on the investment characteristics of their selected financial assets. The survey instrument consisted of five sections (Chama). Section one elicited the respondents' attitudes and opinions toward financial planning, financial markets, and deregulation. The second section identified the respondents' motives for saving.

In the third section, respondents completed a matrix that yielded information on the size, type, and geographic location of their financial assets. Alternative types of financial assets included currency, savings accounts, checking accounts, certificates of deposit, U.S. government securities, corporate bonds, common stocks, mutual funds, farm real estate,¹ nonfarm real estate, precious metals, collectibles, and other assets. Geographic alternatives included the following: within county of residence; within other counties of North Dakota; within surrounding states of Minnesota, South Dakota, and Montana; within other U.S. states; or geographic location unknown. Seven categories of size, ranging from less than \$1,000 to more than \$100,000, were identified. The respondents' interest in rural development, satisfaction with their investment portfolio, attitude toward risk, and sources of investment information also were requested.

In section four, the respondents rated the relative importance of yield, safety, liquidity, inflation hedge, convenience, tax consequences, paperwork, location, and personnel in their selection of financial assets. The final section obtained information on the socioeconomic and financial characteristics of the farm unit, including age, family size, and education of the respondent and the enterprises, income, assets, and liabilities of the farm. The last section also screened respondents to exclude retired farmers and nonfarmers from the study.²

Pretest and Survey Mailing

A pretest of the survey instrument was mailed to 20 farmers to check the clarity, relevancy, and reliability of questions asked.

¹Farm real estate, though technically not considered a financial asset, is included in the analysis because of its expected importance in the respondents' investment portfolios.

²The U.S. Department of Agriculture and the Census of Agriculture defines nonfarm to be any establishment that sold or would sell less than \$1,000 of agricultural products in one year.

After comments on the pretest questionnaire were incorporated, it was sent to the respondents. A total of 90 usable questionnaires were obtained for a response rate of 20 percent. The sensitivity of the information being elicited and the timing of the mailings during spring fieldwork activities were negative factors affecting the response rate.

Data Analysis

Survey data analysis is an interactive process by which the responses to the survey's questions are examined to see whether they support the hypotheses underlying the questions asked. This section covers the statistical procedures used in data analysis: the response rate and nonresponse rate, the summary statistics that describe the sample data, and the inferential analysis that links sample and population estimates.

Survey Response Rate

Response rate was calculated as the number of people who returned completed questionnaires divided by the number of people sampled. The questionnaire design involved "screening" questions to find members of the farming population who met the study's requirements. The respondents who did not meet the study's requirements included those who work in businesses that serve agriculture, those who are retired farmers, and those who are not associated with agriculture. Hence, only respondents who were either full- or part-time farmers were included in the response rate calculation.

Of the 473 questionnaires sent out, 119 were returned (25 percent response rate). The response was lower than those achieved in most state surveys (Leistritz et al.), mainly because of the sensitivity of the subject and the time of contact. Twenty-four percent of the returned questionnaires did not meet the study's requirements and were considered unusable. After adjusting for screened units, an overall response rate of about 20 percent was obtained (Table 1).

TABLE 1. RESPONSE RATES BY MAILINGS, 1991 FARM SAVING AND INVESTMENT SURVEY

Mailing	Sample Size	Returns		Percent Response
		Unusable	Usable	
First mailing	473	17	60	13.0
Second mailing	395	12	30	8.0
Total	473	29	90	20.0

Nonresponse Bias

The effect of nonresponse on survey estimates depends on the extent to which those not responding differ from those who do respond. The respondents who do not respond are often less cooperative but do not differ significantly from those who do respond (Weisberg and Bowens). However, the higher the refusal rate, the more important it is to ascertain that the responses represent the population.

Several statistical and methodological techniques have been developed to reduce the bias that nonresponse introduces into survey estimates, including methods to increase response rate, i.e., mail follow-ups, and the statistical procedures to detect nonresponse bias, i.e., population and respondent comparisons.

Follow-up Procedures. Follow-ups in mail surveys help to remind people to return their questionnaires and, thus, increase response rates. A follow-up mailing was used in this study, increasing the overall response rate from 60% to 90%.

Population Test for Nonresponse Bias. De Vaus observed that if the characteristics of the population from which the sample was drawn are known, characteristics in the sample can be compared with those in the population.

Selected characteristics of the survey respondents were compared with North Dakota data from the 1987 Census of Agriculture to determine representativeness (Table 2). The chi-square goodness-of-fit test was used to compare survey response distributions with census figures. The probabilities (P) associated with the occurrence of calculated chi-squares (X^2) were larger than the set level of significance. Therefore, no significant differences existed between the sample and the population it represents at 0.01 significance level. Since the sample corresponded to the population it represented, bias due to nonresponse was considered minimal.

The survey responses indicated absence of farm operators who are less than 25 years of age, probably because of difficult economic conditions, which may have discouraged young people from farming. The size distribution of farms over 1,000 acres corresponded closely to survey responses and census figures. However, survey responses represented only 9.1 percent of farms that are less than 500 acres in size while census figures show 24.1 percent, probably because farm financial stress may have forced small farm operators out of business.

Respondent Test for Nonresponse Bias. For mail surveys, bias due to nonresponse also can be studied by comparing those who respond immediately with those who respond to follow-ups (Fowler).

Responses between mailings were compared, using a Kruskal-Wallis test, which is a nonparametric one-way analysis of variance by ranks and is useful in testing whether independent samples are from the same population (Daniel).

TABLE 2. DISTRIBUTION OF NORTH DAKOTA FARMS BY REGIONS, ACRES OPERATED, AND AGE OF OPERATOR FROM 1987 CENSUS OF AGRICULTURE AND 1991 FARM SAVING AND INVESTMENT SURVEY

Item	1987 Census*	1991 Survey
Farm location (region):		
West	17.0	21.6
West central	34.4	22.8
East central	27.4	28.8
East	21.2	24.0
$\chi^2 = 5.59$	0.2 > P > 0.1	
Farm size (acres):		
Less than 180	8.9	2.3
180 to 499	15.2	6.9
500 to 999	20.0	31.0
1,000 to 1,999	26.4	28.7
2,000 or more	16.7	17.2
$\chi^2 = 9.76$	0.05 > P > 0.02	
Operator age:		
Less than 25	3.2	0.0
25 to 34	15.2	14.9
35 to 44	20.0	23.0
45 to 54	18.5	24.1
55 or over	40.7	37.9
$\chi^2 = 5.54$	0.3 > P > 0.2	

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

The following questions were selected from the questionnaire to determine if the socioeconomic characteristics differed significantly among individuals responding to the questionnaire without any type of follow-up and those responding after follow-up steps:

- Q2. Savings objectives.
- Q3. Type of financial assets held and their geographical location.
- Q15. Investment characteristics.
- Q16. Respondent's age.
- Q17. Respondent's family size.
- Q18. Respondent's education level.
- Q21. Years of farming experience.
- Q24. Net taxable farm income.
- Q25. Respondent's asset position.

Table 3 presents the results of the decision to accept or reject the null hypothesis, which is that the two groups, those responding to the first mailing and those responding to the second mailing, are identical with respect to the selected characteristics.

TABLE 3. SIGNIFICANCE TESTS OF DIFFERENCES BETWEEN RESPONDENTS AND NONRESPONDENTS

Socioeconomic Characteristic	X ²	Decision
Savings objectives:		
Retirement	0.45	Accept
Future emergencies	0.95	"
Education of children	0.81	"
Buy a house	0.99	"
Invest	0.77	"
Inheritance by children	0.57	"
Financial assets held:		
Cash	0.08	Accept
Savings account	0.98	"
Checking account	0.31	"
Certificates of deposit	0.39	"
U.S. government securities	0.19	"
Corporate bonds	0.59	"
Common stocks	0.87	"
Farm real estate	0.54	"
Nonfarm real estate	0.28	"
Precious metals	0.50	"
Collectibles	0.87	"
Other nonfarm investments	0.80	"
Location of investments:		
Within county	0.10	Accept
In other counties		"
within North Dakota	0.64	"
In Montana, South Dakota, and Minnesota	0.42	"
Outside Northern Plains Region	0.06	"
Investment criteria:		
Yield	0.88	Accept
Safety	0.20	"
Liquidity	0.06	"
Inflation hedge	0.49	"
Convenience	0.50	"
Tax consequences	0.59	"
Paperwork	0.36	"
Geographical location	0.92	"
Friendly people	0.84	"
Age	0.95	Accept
Family size	0.72	"
Education level	0.27	"
Net farm income	0.30	"
Asset position	0.40	"

Significant differences were based on a 95 percent confidence level. No significant differences between the mailings were found to the nine questions, suggesting little potential for nonresponse bias in the survey.

The Kruskal-Wallis test also was used to determine if part-time farmers differed from full-time farmers on essential study variables. No significant differences were found between the groups, based on a 5 percent significance level. The analysis did not make any distinction between the two groups.

The questionnaires that were selected for analysis were edited to eliminate incompleteness and inconsistency and were assigned numerical symbols to allow for quick storage and retrieval of information.

Sample Description

Survey responses were organized to describe sample characteristics. The following general areas provided the basis for organizing survey responses:

- Socioeconomic characteristics
- Savings objectives
- Nonfarm investments
- Attributes of investments
- Respondent's beliefs and attitudes

Univariate analysis was used to organize survey responses.

Socioeconomic Characteristics. The socioeconomic characteristics of the survey respondents are summarized in Table 4. These characteristics include age distribution, family size, level of education, years of farming experience, acres operated, net taxable farm income, and asset position.

The median age for the surveyed farmers was 50 years. Only 6 percent of those surveyed were over 65 years old. The respondents' median family size was three. More than 30 percent of the respondents had a family size larger than three.

At least 50 percent of the farmers surveyed completed at least 13 years of education. About 23 percent had college or graduate education.

About three-fifths of the respondents had a total value of personal assets (farm and nonfarm assets) less than \$400,000. About 11 percent had a total value of personal assets above \$1 million. The median was around \$300,000.

The "median" land operated was 1,050 acres, and net taxable farm income was \$15,000. Only 10 percent of the respondents operated less than 600 acres. About 30 percent had net farm income above \$20,000.

The medians for important study variables, i.e., age, family size, net farm income, and asset position, corresponded closely with the 1987 Census of Agriculture for North Dakota.

TABLE 4. SOCIOECONOMIC CHARACTERISTICS OF NORTH DAKOTA FARM OPERATORS, 1991 FARM SAVING AND INVESTMENT SURVEY

Socioeconomic Characteristics	Percent of Farmers in Group	Median Value
Operator age:		
25-34	15.6	
35-44	22.2	
45-54	23.3	50
55-64	25.6	
65 and over	13.3	
Family size:		
One	7.8	
Two	38.9	
Three	20.0	3
Four	8.9	
Five and over	24.5	
Level of education:		
8th grade or less	11.2	
9th through 11th grade	9.0	
12th grade	29.2	
13 to 15 years	27.0	14
16 years	13.5	
17 or more years	10.1	
Years of farming experience:		
Less than 10 years	6.0	
11 to 20	31.0	
21 to 30	19.0	25
31 to 40	22.6	
More than 40	21.4	
Total acres operated:		
Less than 300	2.6	
301 to 600	7.8	
601 to 900	35.1	
901 to 1,200	35.1	1,050
More than 1,200	19.5	
Net taxable farm income:		
Net loss	12.2	
Less than \$5,000	8.5	
\$5,000 - \$10,000	15.9	
\$10,000 - \$20,000	20.7	\$15,000
\$20,000 - \$35,000	19.5	
\$35,000 - \$50,000	11.0	
Over \$50,000	12.2	
Asset position:		
Under \$200,000	32.5	
\$200,000 - \$399,999	27.3	
\$400,000 - \$599,999	18.2	\$300,000
\$600,000 - \$799,999	6.5	
\$800,000 - \$999,999	3.9	
\$1,000,000 and over	11.7	

Savings Objectives. The savings motives of the North Dakota farmers surveyed are summarized in Table 5. More than 90 percent of the respondents indicated that saving money for retirement and for future emergencies was important. Fewer than 50 percent considered saving for the children's inheritance and saving to buy a house was important.

TABLE 5. PERCENTAGE OF RESPONDENTS INDICATING THE IMPORTANCE OF SAVINGS OBJECTIVES

Savings	Percent of Farmers Who Thought Objective Was Important	Standard Error
For future emergencies	92	3
For retirement	91	3
For investment	69	5
For education of children	63	5
For inheritance by children	49	5
For buying a house	48	5

Nonfarm Investments. The nonfarm investments of North Dakota farm operators surveyed are summarized in Table 6. More than 80 percent of respondents had savings in savings accounts, checking accounts, and farm real estate. At least 70 percent of the farmers did not invest in the riskier financial instruments: stocks and mutual funds. Sixty percent of the surveyed farmers owned certificates of deposit.

TABLE 6. FREQUENCY OF FARMERS HOLDING VARIOUS FINANCIAL ASSETS

Financial Assets	Percent of Respondents Holding Assets
Checking account	97
Farm real estate	89
Savings account	83
Cash	79
Certificates of deposit	60
Nonfarm real estate	34
Mutual funds	30
U.S. government securities	29
Common stocks	27
Other nonfarm investments	25

Farm real estate alone accounted for 50 percent of the respondents' total investments with about 42 percent valued above \$100,000 (Table 7). Although more than 80 percent of the respondents reported having savings in savings and checking accounts, the two assets together represented only 13 percent of the total investments.

TABLE 7. PROPORTION OF RESPONDENTS' FINANCIAL ASSETS BY ASSET CATEGORY AND INVESTMENT VALUE

Asset Category	Investment Value				Total
	Under \$25,000	\$25,000-\$49,999	\$50,000-\$99,999	Over \$1,000,000	
-----percent of total financial assets-----					
Farm real estate	0	2	6	42	50
Nonfarm real estate	0	1	3	4	8
Certificates of deposit	1	3	1	3	8
Savings account	2	1	2	2	7
Checking account	2	1	1	2	6
Mutual funds	0	1	2	2	5
Common stocks	1	0	1	2	4
Corporate bonds	0	1	0	2	3
U.S. government securities	0	1	1	1	3
Others	<u>1</u>	<u>1</u>	<u>1</u>	<u>3</u>	<u>6</u>
Total	7	12	18	63	100

Table 8 summarizes the geographical location of investments. At least 80 percent of the respondents had no out-of-state investments, except for mutual funds. Only 12 percent had out-of-state mutual funds over \$50,000. The value of reported out-of-state farm real estate was below \$25,000. Out-of-state investments in corporate bonds, common stocks, and most mutual funds were located outside the Northern Plains region.

More than 70 percent of the total investment was within the respondents' own counties (Table 9). Only 10 percent of the reported total investment was outside the state.

Forty-five percent of the respondents were satisfied with their present portfolio composition; 15 percent were not. About 25 percent of the dissatisfied respondents planned to invest more in fixed-yield assets (Table 10). Another 25 percent planned to invest in more farm real estate. Only 6 percent planned to invest in common stocks.

Investment Criteria. Important factors in respondents' investment decisions are shown in Table 11. More than 70 percent considered yield, safety, tax consequences, friendly atmosphere in financial institutions, convenience, and liquidity important investment criteria.

TABLE 8. GEOGRAPHICAL LOCATION OF FINANCIAL ASSETS

Item	Within County	In Other Counties	Investments in MN, MT, & SD			Investments Outside Northern Plains Region		
			Under \$25,000	\$25,000- \$49,000	\$50,000 and Over	Under \$25,000	\$25,000- \$49,999	\$50,000 and Over
-----percent-----								
Farm real estate	85	12	2	0	0	1	0	0
Corporate bonds	82	6	0	0	0	6	0	6
Checking account	79	19	0	0	0	0	0	0
Nonfarm real estate	77	12	0	4	0	7	0	0
Savings account	70	20	1	0	0	6	0	3
Certificates of deposit	70	18	7	0	0	3	0	2
Common stocks	65	22	0	0	0	4	4	5
Mutual funds	49	8	0	11	0	20	0	12
Others	83	10	2	1	1	2	1	0

TABLE 9. GEOGRAPHICAL LOCATION OF FINANCIAL ASSETS BY INVESTMENT VALUE

	Within County	In Other Counties	In MN, SD, & MT	Outside the Northern Plains Region	Total
	-----percent-----				
Farm real estate	43	6	1	0	50
Nonfarm real estate	7	1	0	0	8
Certificates of deposit	5	2	1	0	8
Checking account	4	2	0	0	6
Savings account	3	2	0	2	7
Mutual funds	3	0	0	2	5
Common stocks	2	0	0	2	4
Corporate bonds	2	0	0	1	3
Others	<u>5</u>	<u>3</u>	<u>0</u>	<u>1</u>	<u>9</u>
Total	74	16	2	8	100

TABLE 10. PLANNED CHANGES IN PORTFOLIO COMPOSITION

Type of Change	Planned Changes in Portfolio Composition by Those Dissatisfied
	-----percent-----
More in:	
Farm real estate	25
Fixed-yield assets	25
Mutual funds	17
Nonfarm real estate	15
Common stocks	6
Other assets	<u>12</u>
Total	100

TABLE 11. PERCENTAGE DISTRIBUTION OF RESPONDENTS ON THE IMPORTANCE OF INVESTMENT CHARACTERISTICS

Characteristic	Some Degree of Importance	Neutral	Some Degree of Unimportance
	-----percent-----		
Yield	85	9	6
Safety	85	9	6
Tax consequences	79	15	8
Friendly people	77	16	7
Convenience	72	18	10
Liquidity	71	20	9
Inflation hedge	68	18	14
Paperwork	60	29	11
Geographical location	49	33	18

Respondents' Attitudes. The respondents' attitudes toward risk and their desire to help the local economy were used in this study to determine how attitudes influenced investment choices.

Fishbein defined an attitude as a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related. He pointed out that the concept of attitude is so complex that its measurement is often a difficult task.

Attitudes have been measured successfully through the principle of scaling. In survey research, a scale is a composite measure of a concept composed of information derived from several questions (De Vaus). This approach helps to develop more valid measures by obtaining as much information on the concept as possible (De Vaus).

The scales used in this study consisted of a number of statements designed to ascertain the respondents' risk attitudes and the desire to help the local economy. A score was allocated to each response, depending on how favorable the answer was to the attitude being measured. The scores for each statement were added to give an overall score for the set of statements, indicating a respondent's "position" on the abstract dimension of the concept.

The response distribution of respondents on attitude questions is summarized in Appendix I. Sixty-two percent of the respondents thought North Dakota had many investment opportunities, and 53 percent thought that farm and rural people were not at an investment disadvantage. About 60 percent agreed that impartial investment advice is hard to get; only 21 percent disagreed.

Fifty-four percent agreed that they should invest more in local financial institutions; only 16 percent disagreed. Forty-nine percent favored investing in North Dakota to aid developmental projects; only 26 percent did not.

Eighty-six percent reported that they made investment decisions conservatively, and 66 percent did not have funds set aside to take advantage of unforeseen investment opportunities.

Ninety percent of the respondents managed investments themselves. More than 60 percent relied on their own experience as a source of investment information. About 40 percent used professional publications as sources of investment information. Forty-four percent did not understand financial investment concepts. Only 26 percent, however, indicated that they needed a financial planner.

Sixty-four percent of the respondents reported that income tax laws and interest rates affected their investment decisions. About 70 percent indicated that they should take better advantage of tax laws.

Sixty percent agreed that financial institutions were not as financially secure as they had been in the past. However, more than 80 percent reported that the recent uncertainty surrounding financial markets had not affected their investment behavior.

To assess the risk attitudes of respondents, their responses to the following questions were used to classify respondents as adventuresome or conservative:

- Q4. If you received a \$10,000 windfall, in which financial assets would you invest your proceeds?
- Q8. Considering the risk management of your financial assets, would you say that you are conservative, somewhat conservative, somewhat adventuresome, or adventuresome?
- Q9. Do you have funds set aside to take advantage of unforeseen investment opportunities?
- Q11. Rather than buying individual stocks, investors should purchase mutual funds.

Four points were given for a response of adventuresome, three for somewhat adventuresome, two for somewhat conservative, and one for conservative. Five points were allotted to respondents having funds set aside to take advantage of unforeseen investment opportunities and one point for not having such funds since having such funds implied more risk taking. Five more points were given for disagreeing with the statement about the purchase of mutual funds rather than individual stocks and one for agreeing since individual stocks are riskier than mutual funds.

The distribution of responses to question 4 and the allocation of points are shown in Table 12. Savings accounts had the lowest risk in the group and received one point. The last four had the highest risk and received four points.

TABLE 12. DISTRIBUTION OF RESPONDENTS' MARGINAL INVESTMENTS AND WEIGHT ALLOCATION

Item	Percent	Risk	Points
Savings account	9	low	1
Certificates of deposit	37		2
U.S. government securities	11		3
Corporate bonds	2		3
Common stocks	2		4
Mutual funds	20		4
Farm real estate	18		4
Nonfarm real estate	3		High

The distribution of responses, summed up for each respondent, is summarized in Table 13. More than 80 percent of the respondents indicated that they were at least somewhat conservative when making investments.

TABLE 13. DISTRIBUTION OF RESPONDENTS BY RISK ATTITUDES

Risk Attitude	Points	Percent
Adventuresome	12 and over	12
Somewhat conservative	8 to 11	41
Conservative	8 or less	47

To determine if farmers put their savings in local financial institutions to help the local economy, we used the responses to the following statements:

- Q5. If you could invest your \$10,000 windfall in North Dakota in programs to aid rural development, you would invest it locally even if other investments offered higher returns.

Q1q. I should invest more in local financial institutions than in out-of-state.

Respondents were allotted points, ranging from five for strongly agree with the statements down to one for strongly disagree. After adding the points for each respondent, the summary in Table 14 was obtained. About 63 percent of the respondents favored saving at local financial institutions to help the local economy.

TABLE 14. DISTRIBUTION OF RESPONDENTS BY THE DESIRE TO HELP LOCAL ECONOMY

Attitude	Points	Percent
High desire to help local economy	8 and over	63
Modest desire to help local economy	5 to 7	27
No desire to help local economy	4 or less	10

Level of Investment Information. Inquiries about the sources of investment information and who made investment decisions were used to classify investors according to the level of investment information. Opinions to the following statements also were used:

Q1b. I do not understand financial investment concepts.

Q1n. What I need is a financial planner.

Q1s. I should take better advantage of tax laws.

The respondent who managed investments himself received five points. If investment information sources appeared to be qualified professionals or investment advisory publications, the respondent received five more points.

Five points were given for disagreeing with the statement, "I do not understand financial investment concepts"; another five for disagreeing with "what I need is a financial planner," since lack of investment knowledge and needing a financial planner imply a low level of investment information. Five more points were given if the respondent claimed that tax laws affected his investing savings, since awareness of tax matters indicated some sophistication in the management of investments.

Verbal descriptions of the point totals are summarized in Table 15. Twenty-six percent of the surveyed farmers were highly informed, and 6 percent were uninformed.

TABLE 15. DISTRIBUTION OF RESPONDENTS BY LEVELS OF INVESTMENT INFORMATION

Investment Information	Points	Percent
Highly informed	22 or more	26
Fairly well-informed	18 to 21	51
Somewhat informed	10 to 17	18
Uninformed	10 or less	6

Measures of Association

To understand and explain savings attitudes and investment behavior, we must analyze relationships among several variables. Bivariate frequency distribution (cross-tabulation) displays data so that we can determine association between two variables. The statistics that summarize association in cross-tabulation are called correlation coefficients (De Vaus).

Cross-tabulation is a useful way to display relationships between variables with two categories. When dealing with variables of more than two categories, we can use the rank order correlation technique.

This section is devoted to the representation of cross-tabulations and nonparametric measures of correlation. Cross-tabulations were used to examine how the respondent's socioeconomic characteristics affected saving purposes, risk attitudes, and level of investment information. Rank order correlation analysis was used to summarize existing relationships between investment levels and socioeconomic characteristics.

Cross-tabulation. To analyze the effect of age, family size, education level, and net farm income on saving purposes, information levels, and risk attitudes, the respondent characteristics were combined into two categories. The chart below summarizes subgroup descriptions:

	<u>Class</u>
Under 45 years of age	Young
Over 45 years of age	Old
Family size of 4 or less	Small
Family size of more than 4	Large
Education below college level	Low
College level and higher	High
Net farm income over \$20,000	High
Net farm income below \$20,000	Low

Table 16 summarizes the results of the relationships. At least 62 percent of the respondents who considered saving for retirement, emergencies, and education of the children important were old with small family sizes. All the respondents who fell into the category of "uninformed" had low education levels and were old.

TABLE 16. EFFECT OF SOCIOECONOMIC CHARACTERISTICS ON SAVING PURPOSES, RISK ATTITUDES, AND LEVELS OF INFORMATION

Item	Age		Family Size		Education Level		Net Farm Income	
	Young	Old	Small	Large	Low	High	Low	High
Saving for:	-----percent-----							
Retirement	38	62	76	24	76	24	57	43
Emergencies	36	64	74	26	78	22	55	45
Children's education	30	70	67	33	68	32	62	38
Investing	42	58	77	23	75	25	64	36
Investment information:								
Highly informed	10	31	36	6	33	8	16	27
Fairly well-informed	14	25	28	10	25	15	27	11
Somewhat informed	8	6	10	4	15	0	8	7
Uninformed	<u>0</u>	<u>6</u>	<u>6</u>	<u>0</u>	<u>4</u>	<u>0</u>	<u>2</u>	<u>2</u>
Total	32	68	80	20	77	23	53	47
Risk attitude:								
Adventuresome	2	10	10	2	10	2	4	9
Somewhat conservative	8	33	35	6	27	15	27	18
Conservative	<u>23</u>	<u>24</u>	<u>35</u>	<u>12</u>	<u>40</u>	<u>6</u>	<u>22</u>	<u>20</u>
Total	33	67	80	20	77	23	53	47

Among the respondents who were at least somewhat conservative, 67 percent had low education. Among the respondents who were adventuresome, old farmers were five times more adventuresome than the young.

Appendix II presents the response distribution of respondents' attitudes with respect to age, education level, net farm income, and asset position. Net farm income and asset position had less impact than age and education level on responses.

Forty-nine percent of North Dakota farmers reported that they were just as wealthy as their neighbors. More than 80 percent of the respondents who indicated that they were wealthier than their neighbors were over 45 years old and had a high net farm income and asset position.

Among surveyed farmers who said they were dissatisfied with their investment composition, almost 65 percent were younger than 45 years. Older farmers indicated they would put more in varied-yield assets than did younger farmers.

The respondents who had a financial planner to manage their investments had a low net farm income and asset position. More low-income farmers indicated they did not understand financial investment concepts and that management fees charged to investors were too high.

Tables 17, 18, 19, and 20 show how the extent of ownership of financial assets varied with net farm income, asset position, age, and education level, respectively. For farm real estate, savings and checking accounts, and certificates of deposit, ownership was similar at all net farm income levels and asset positions. However, for U.S. government securities, corporate bonds, common stocks, and mutual funds, ownership became more frequent as net farm income, asset position, and education level rose. The respondent's age showed a positive effect on the ownership of all financial assets. As the age rose, ownership became more frequent.

TABLE 17. PERCENTAGE OF RESPONDENTS WITH VARIOUS FINANCIAL ASSETS BY NET FARM INCOME

Financial Asset	Net Farm Income					All Cases
	Under \$5,000	\$5,000-\$10,000	\$10,000-\$20,000	\$20,000-\$35,000	Over \$35,000	
	-----percent-----					
Farm real estate	18	13	20	16	22	89
Savings account	16	12	20	16	19	83
Checking account	21	13	21	19	23	97
Certificates of deposit	9	12	10	15	14	60
U.S. government securities	4	3	6	4	12	29
Corporate bonds	0	2	5	4	10	21
Common stocks	2	4	7	4	10	27
Mutual funds	2	3	6	5	14	30
Nonfarm real estate	4	6	8	5	11	34

TABLE 18. PERCENTAGE OF RESPONDENTS WITH VARIOUS FINANCIAL ASSETS BY ASSET POSITION

Financial Asset	Asset Position				
	\$100,000 or Less	\$100,001-\$199,999	\$200,000-\$399,999	\$400,000-\$599,999	Over \$600,000
	-----percent-----				
Farm real estate	14	16	23	15	21
Savings account	14	11	23	17	21
Checking account	17	13	27	18	21
Certificates of deposit	8	8	18	14	12
U.S. government securities	5	6	5	4	9
Corporate bonds	4	7	4	1	5
Common stocks	4	8	6	1	8
Mutual funds	4	4	4	9	10
Nonfarm real estate	7	6	10	4	9

TABLE 19. PERCENTAGE OF RESPONDENTS WITH VARIOUS FINANCIAL ASSETS BY AGE

Financial Asset	Age			
	Under 35	35-44	45-54	55 and Over
	-----percent-----			
Farm real estate	13	21	20	36
Savings account	12	20	20	32
Checking account	14	22	23	38
Certificates of deposit	7	11	14	28
U.S. government securities	4	8	7	10
Corporate bonds	5	4	3	9
Common stocks	5	5	4	11
Mutual funds	0	10	9	11
Nonfarm real estate	2	10	8	4

TABLE 20. PERCENTAGE OF RESPONDENTS WITH VARIOUS FINANCIAL ASSETS BY EDUCATION LEVEL

Financial Asset	Years Completed in School			
	11 or Less	12	13-15	16 and Over
	-----percent-----			
Farm real estate	18	26	23	22
Checking account	19	28	26	23
Certificates of deposit	16	14	17	11
U.S. government securities	4	9	10	6
Corporate bonds	4	7	6	4
Common stocks	9	5	9	4
Mutual funds	3	7	10	9
Nonfarm real estate	5	8	12	9

Rank Order Correlation Analysis. Rank order correlation analysis is used to gauge the association among variables with more than two categories (De Vaus). For rank order correlation analysis, financial assets were grouped into three categories: risk-free assets (savings and checking accounts), risky assets (common stocks and mutual funds), and farm real estate. Investment levels were defined as low, under \$10,000; medium, \$10,000 to \$24,999; and high, over \$25,000. Respondents were divided into subgroups defined as young (under 45 years of age), middle (45 to 54 years), and old (over 55 years). Family size of under 4 was small, 4 to 5 medium, and over 6 large. Education level up to 12 years was low, 13 to 15 years medium, and 16 years and over high.

To summarize relationships among savings levels and socioeconomic characteristics, Spearman's rho was calculated. Statistical significance of the correlations was determined, using the student's t statistic. Siegel indicated that the significance of an obtained Spearman's correlation coefficient is tested by computing the student's t statistic associated with that value.

$$t = r [(N-2)/(1-r^2)]^{1/2}$$

where

- t = t statistic
- r = Correlation coefficient (Spearman's rho)
- N = Sample size
- N-2 = Degrees of freedom

The significance of t is determined by referring to a table of critical values. If the calculated t value is higher than the tabulated t value at a 0.5 significance level, then the association is significant.

The correlation coefficients for savings levels and respondent demographic characteristics are presented in Table 21. The coefficients for age and family size were low, ranging from 0.0 to 0.3. Education levels had higher coefficients, ranging from 0.1 to 0.5. All correlation coefficients for family size were negative.

Table 22 summarizes the results of rank order correlation analysis between savings levels and respondent's financial position. Coefficients are higher than those for demographic characteristics, ranging from 0.1 to 0.5.

Conclusion

North Dakota farmers responding to this mail survey have not taken advantage of the financial innovations that deregulation of financial markets affords. Their investments are concentrated in local savings accounts, checking accounts, and farm real estate. Few respondents had investments outside of the state. In addition, less than a third of the respondents reported holdings of mutual funds, government securities, or common stocks. Nearly all of the respondents managed their own investment portfolios and were primarily concerned with the yield and safety of financial assets. They saved primarily for emergency and retirement.

The results of this study raise several questions. First, if farmers and other rural residents continue to patronize rural financial institutions, why are capital shortages still perceived to exist in rural areas - especially for economic development? A study investigating the investment and portfolio management activities of rural financial institutions appears warranted. Second, why do farmers' investments remain concentrated in agriculture? Also needed is further study of farmers' financial management skills and risk-bearing capabilities, the transaction costs associated with financial asset investing in rural areas, and the ability of rural financial markets to provide the necessary equity capital that would permit financial asset diversification on the part of farmers.

TABLE 21. CORRELATIONS AMONG RESPONDENTS' INVESTMENT LEVELS AND AGE, FAMILY SIZE, AND EDUCATION LEVEL

Investment Level	Age			Family Size			Education Level		
	Young	Middle	Old	Small	Medium	Large	Low	Medium	High
Saving:									
Low	20	22	19	39	17	5	33	16	11
Medium	9	11	9	19	11	0	13	6	11
High	2	8	0	8	2	0	0	6	3
Total	31	41	28	66	30	5	46	28	25
Correlation		0.0			-0.1			0.3	
Significant		No			No			Yes	
Checking:									
Low	26	33	17	50	23	3	38	16	21
Medium	4	4	9	11	4	1	10	7	0
High	1	6	0	6	2	0	3	3	2
Total	31	43	26	67	29	4	51	26	23
Correlation		0.1			-0.1			-0.1	
Significant		No			No			No	
Stocks:									
Low	12	0	18	18	6	6	18	12	0
Medium	12	12	17	35	6	0	29	6	6
High	11	18	0	24	6	0	0	24	6
Total	35	30	35	76	18	6	47	42	12
Correlation		-0.3			-0.2			0.5	
Significant		Yes			No			Yes	
Mutual funds:									
Low	10	18	10	19	14	5	10	14	14
Medium	10	10	13	23	5	5	5	10	19
High	9	10	10	19	10	0	4	19	5
Total	29	38	33	61	29	10	19	43	38
Correlation		0.0			-0.2			-0.1	
Significant		No			No			No	
Farm real estate:									
Low	1	0	0	0	1	0	0	0	1
Medium	7	3	4	9	4	0	12	0	2
High	29	34	22	58	22	5	39	25	21
Total	37	37	26	67	27	5	51	25	23
Correlation		0.1			0.0			0.2	
Significant		No			No			Yes	

TABLE 22. CORRELATIONS AMONG RESPONDENTS' INVESTMENT LEVELS AND NET FARM INCOME AND ASSET POSITION

Investment Level	Net Farm Income			Asset Position		
	Low	Medium	High	Low	Medium	High
Savings:						
Low	36	10	10	48	5	4
Medium	13	9	10	18	9	5
High	2	3	7	5	0	5
Total	51	22	27	71	14	14
Correlation		0.3			0.4	
Significant		Yes			Yes	
Checking:						
Low	42	20	12	58	10	5
Medium	9	3	6	12	2	5
High	0	0	8	3	2	3
Total	51	23	26	73	14	13
Correlation		0.3			0.3	
Significant		Yes			Yes	
Stocks:						
Low	18	0	12	20	0	7
Medium	29	12	0	40	0	0
High	12	0	17	13	7	13
Total	59	12	29	73	7	20
Correlation		0.2			0.3	
Significant		No			Yes	
Mutual funds:						
Low	10	10	19	26	0	10
Medium	24	0	10	26	11	0
High	4	4	19	11	0	16
Total	38	14	48	63	11	26
Correlation		0.1			0.3	
Significant		No			Yes	
Farm real estate:						
Low	1	0	0	2	0	0
Medium	9	4	1	11	2	0
High	48	15	22	65	9	12
Total	58	19	23	78	11	12
Correlation		0.1			0.1	
Significant		No			No	

References

- Barry, P.J. "Capital Asset Pricing and Farm Real Estate." *Amer. J. Agr. Econ.* 62(1980):548-53.
- Barry, Peter J. "Impacts of Regulatory Change on Financial Markets for Agriculture." *Amer. J. Agr. Econ.* 63(1981):905-912.
- Barry, Peter J. and Freddie L. Barnard. "Interaction Effects on Rural Financial Intermediaries of Financial Stress and Deregulation." *Amer. J. of Agr. Econ.* 67(1985):1191-95.
- Bjornson, B. and R. Innes. "Another Look at Returns to Agricultural Assets and Nonagricultural Assets." *Amer. J. Agr. Econ.* 74(1992):109-119.
- Chama, Sydney L. *Saving and Investment Patterns of North Dakota Farmers*, unpublished M.S. thesis, Dept. of Agr. Econ., North Dakota State University, Fargo, September 1991.
- Daniel, Wayne N. "A Foundation for Analysis in the Health Sciences." *Biostatistics*. Fifth edition. John Wiley & Sons, New York, 1991, 576-624.
- De Vaus, A.D. "Contemporary Social Research." *Survey in Social Research*, Dept. of Soc., Latrobe University, Melbourne, 1986.
- Dreese, G. Richard. "Banks, Bankers, and Economic Growth in Appalachia." Series 73, No. 8-10. Morgantown, W.V., Office of Research and Development, Appalachian Center, West Virginia University, 1973.
- Fishbein, Martin. *Attitude Theory and Measurement*. John Wiley & Sons, Inc., New York, 1967.
- Fowler, Floyd J., Jr. "Applied Social Research Methods Series." *Survey Research Methods, Vol I*. Saye Publications, Beverly Hills, Calif., 1984.
- Gustafson, Cole R. and Shaun C. Beauclair. "Community Development and Commercial Bank Performance: A Mutually-Dependent Relationship." *J. Comm. Dev. Soc.* 22(1991):83-97.
- Gustafson, Cole. R., Elizabeth Nielsen, and Mitchell J. Morehart. "Comparison of the Financial Results of Recordkeeping and Average Farms in North Dakota." *N. Centr. J. Agr. Econ.* 12(1990):165-72.
- Irwin, S., D. Forster, and B. Sherrick. "Returns to Farm Real Estate Revisited." *Amer. J. Agr. Econ.* 70(1988):580-87.
- Jolley, Robert W., Arnold Paulson, James D. Johnson, Kenneth H. Baum, and Richard Prescott. "Incidence, Intensity, and Duration of Financial Stress Among Farm Firms." *Amer. J. Agr. Econ.* 67(1984):1108-1115.

- Leistritz, F. Larry, Brenda L. Ekstrom, and Harvey G. Vreugdenhil. *Causes and Consequences of Economic Stress in Agriculture: Contrasting the Views of Rural Residents*. Agr. Econ. Rpt. No. 219. Dept. of Agr. Econ., North Dakota State University, Fargo, 1986.
- Minsky, H.P. *California Banking in a Growing Economy, 1946-75*. Institute of Business and Economic Research, Berkeley, Calif., 1965.
- Monke, J., M. Boehlje, and G. Pederson. "Farm Returns: They Measure Up to Returns to Other Investments." *Choices* 7(1992):28-30.
- Pariser, D.B. *Structure and Performance of the North Dakota Commercial Banking System, 1962-71*. Bureau of Business and Economic Research, University of North Dakota, Grand Forks, 1974.
- Penson, J.B. "Demand for Financial Assets in the Farm Sector: A Portfolio Balance Approach." *Amer. J. Agr. Econ.* 54(1972):163-173.
- Siegel, Sidney. *Nonparametric Statistics for Behavioral Sciences*. McGraw-Hill Book Co., New York, 1956.
- U.S. Department of Agriculture. *Financial Characteristics of U.S. Farms, January 1, 1988*. Agricultural Information Bulletin 551, Economic Research Service, Washington, D.C., October 1988.
- U.S. Department of Commerce. *1987 Census of Agriculture, North Dakota State and County Data*. Bureau of the Census, Washington, D.C., 1989.
- Weisberg, Heubert F., and Bruce D. Bowens. *An Introduction to Survey Research and Data Analyses*. W. H. Freeman and Co., San Francisco, 1977.

APPENDIX I:
DISTRIBUTION OF RESPONSES ON ATTITUDE QUESTIONS

DISTRIBUTION OF RESPONSES ON ATTITUDE QUESTIONS.

Item	Response		
	Agree	NO Opinion/ Does not Matter	Disagree
Percent.....		
Q1a. Too many financial investment choices	25	47	28
Q1b. Do not understand financial concepts	44	14	42
Q1c. Few investment opportunities in ND	21	17	62
Q1d. Interstate banking will increase invest.	30	32	38
Q1e. Rural people are at a disadvantage when it comes to investing	30	17	53
Q1f. ND investments will go out of state if interstate banking occurs	34	36	30
Q1g. Income tax affects the way I invest	64	22	14
Q1h. Commissions charged to investors are too high	42	43	15
Q1i. Impartial investment advice is hard to get	59	20	21
Q1j. Banks are not as fin. secure as they were in the past	60	13	27
Q1k. Stock brokers encourage excess trading	51	36	13
Q1l. Purchase mutual funds instead of indiv. stocks	29	54	17
Q1m. Investing is too complicated today	39	33	28
Q1n. I need a fin. planner	26	31	43
Q1o. Interest rates affect my investments	60	28	12
Q1p. ND rates are below national average	36	51	13
Q1q. I should invest more locally	54	30	16
Q1r. Life insurance is a good way to save money	23	34	43

(continued)

APPENDIX I (Continued)

	Response		
	Agree	No Opinion/ Does not Matter	Disagree
Percent.....		
Q1s. Take better advantage of tax laws	69	19	12
Q5. Should invest more in ND to aid development	49	25	26
Q6. Satisfied with current invest. composition	45	40	15
Q8. Prefer lower risk and yield	86	-	14
Q9. Funds set aside for unforeseen invest. opportunities	34	-	66
Q10. Financial market uncertainty has affected your invest. behavior	18	-	82
Q11a. Plan to invest more in off-farm assets	29	-	71
Q11b. Reason for future investments:			
Higher Yield	41	-	59
More Safety	37	-	63
More Liquidity	11	-	89
Other reason	11	-	89
Q12. Who manages invest.:			
Myself	90%		
Fin. Planner	4%		
Stock Broker	4%		
Other	2%		
Q13. Sources of invest. information are			
Investment articles	35	-	65
TV programs	17	-	83
Farm magazines	25	-	75
Newspapers	37	-	63
Invest. advisors	30	-	70
Own experience	67	-	33
Q14. In relation to your neighbors, would you say that you are			
Wealthier	13%		
Less wealthy	38%		
Just as wealthy	49%		

APPENDIX II:
DISTRIBUTION OF RESPONSES ON ATTITUDE QUESTIONS
BY AGE, EDUCATION LEVEL, NET FARM INCOME,
AND ASSET POSITION

DISTRIBUTION OF RESPONSES ON ATTITUDE QUESTIONS BY AGE,
EDUCATION LEVEL, NET FARM INCOME, AND ASSET POSITION.

Items	Age		Education Level		Net Income		Asset Position	
	1 ¹	2 ¹	1 ²	2 ²	1 ³	2 ³	1 ⁴	2 ⁴
Importance of Investment Criteria-								
Yield:								
Unimportant	1	5	5	0	5	1	5	0
No opinion	3	6	9	0	6	3	6	1
Important	33	52	63	23	47	38	66	22
Total	37	63	77	23	58	42	77	23
Safety:								
Unimportant	3	2	5	0	2	2	5	0
No opinion	2	7	9	0	7	3	6	2
Important	32	54	63	23	49	37	66	21
Total	37	63	77	23	58	42	77	23
Liquidity:								
Unimportant	4	3	8	0	6	3	8	0
No opinion	9	11	16	5	14	7	14	5
Important	24	49	53	18	38	32	55	18
Total	37	63	77	23	58	42	77	23
Tax Consequences:								
Unimportant	3	5	5	3	5	3	7	3
No opinion	3	10	12	1	9	6	8	3
Important	31	48	60	19	44	33	62	17
Total	37	63	77	23	58	42	77	23
Convenience:								
Unimportant	4	6	8	2	5	5	10	1
No opinion	7	11	16	2	11	7	10	5
Important	26	46	53	19	42	30	57	17
Total	37	63	77	23	58	42	77	23
Friendly People:								
Unimportant	3	3	7	0	4	4	6	0
No opinion	8	8	9	7	7	9	11	5
Important	26	52	61	16	47	29	60	18
Total	37	63	77	23	58	42	77	23
There are too many invest. alternatives today:								
No	9	18	19	10	15	12	17	10
No opinion	18	29	36	10	24	21	39	8
Yes	10	16	22	3	19	9	21	5
Total	37	63	77	23	58	42	77	23

(continued)

APPENDIX II (Continued)

Item	Age		Education Level		Net Farm Income		Asset Position	
	1 ¹	2 ¹	1 ²	2 ²	1 ³	2 ³	1 ⁴	2 ⁴
I do not understand fin. invest.:								
No	11	31	27	15	24	21	31	15
No opinion	13	13	21	2	5	12	18	2
Yes	13	19	29	6	23	9	28	6
Total	37	63	77	23	58	42	77	23
ND have few invest. opportunities:								
No	22	40	41	21	35	30	48	15
No opinion	8	8	16	1	9	7	14	1
Yes	7	14	20	1	14	5	15	7
Total	37	63	77	23	58	42	77	23
Interstate banking will increase invest. opportunities:								
No	15	21	30	9	27	11	29	6
No opinion	12	20	27	4	14	17	23	4
Yes	10	22	20	10	17	14	25	13
Total	37	63	77	23	58	42	77	23
Rural people are at a disadvantage when investing:								
No	18	36	36	16	30	25	37	20
No opinion	8	9	15	1	11	6	15	1
Yes	11	18	26	6	17	11	25	2
Total	37	63	77	23	58	42	77	23
ND invest. capital will go out of state if interstate banking occurs:								
No	12	19	22	10	22	11	26	5
No opinion	15	19	30	6	18	17	27	5
Yes	10	25	25	7	18	14	24	13
Total	37	63	77	23	58	42	77	23
Interest rate changes affect my invest.:								
No	3	9	9	3	6	6	9	3
No Opinion	14	16	24	3	18	10	26	3
Yes	20	38	44	17	34	26	42	17
Total	37	63	77	23	58	42	77	23
Income tax laws affect my invest.:								
No	4	9	12	2	11	2	11	1
No opinion	10	12	18	3	14	8	17	1
Yes	23	42	47	18	33	32	49	21
Total	37	63	77	23	58	42	77	23

(continued)

APPENDIX II (Continued)

Item	Age		Education Level		Net Farm Income		Asset Position	
	1 ¹	2 ¹	1 ²	2 ²	1 ³	2 ³	1 ⁴	2 ⁴
Interest rates in ND are below national average:								
No	7	6	9	4	6	8	9	4
No opinion	20	31	43	9	30	21	40	9
Yes	10	26	25	10	22	13	28	10
Total	37	63	77	23	58	42	77	23
Mgt fees charged to investors are too high:								
No	6	9	10	6	8	4	12	5
No opinion	16	27	38	2	26	18	32	8
Yes	15	27	29	15	24	20	33	10
Total	37	63	77	23	58	42	77	23
Impartial invest. advice is hard to get:								
No	8	13	18	3	15	7	14	5
No opinion	6	13	18	2	9	8	15	1
Yes	23	37	41	18	34	27	48	17
Total	37	63	77	23	58	42	77	23
What I need is a fin. planner:								
No	23	28	32	11	25	19	30	14
No opinion	14	17	25	5	14	13	26	0
Yes	10	18	20	7	19	10	21	9
Total	37	63	77	23	58	42	77	23
I should invest more in local fin. instit:								
No	7	9	12	3	8	1	9	4
No opinion	10	19	24	5	35	20	26	2
Yes	20	35	41	15	35	21	42	17
Total	37	63	77	23	58	42	77	23
I should take better advantage of tax laws:								
No	3	9	7	5	7	6	11	3
No opinion	10	9	15	3	12	7	14	1
Yes	24	45	55	15	39	29	52	18
Total	37	63	77	23	58	42	77	23

(continued)

APPENDIX II (Continued)

Item	Age		Education Level		Net Farm Income		Asset Position	
	1 ¹	2 ¹	1 ²	2 ²	1 ³	2 ³	1 ⁴	2 ⁴
Where would you invest your windfall money?								
Fixed-yield assets:	14	31	37	9	31	17	40	6
Varied-yield assets:	10	22	24	8	14	18	22	10
Real estate:	12	10	16	6	13	8	17	7
Total	37	63	77	23	58	42	77	23
You would invest your windfall money locally even if other invest. offered higher returns:								
Disagree	12	16	21	9	17	12	21	4
Does not matter	9	11	18	3	14	7	14	4
Agree	16	36	38	11	27	23	42	15
Total	37	63	77	23	58	42	77	23
How satisfied are you with current invest. composition:								
Dissatisfied	9	6	11	4	8	8	9	5
Neutral	15	24	31	8	24	14	35	5
Satisfied	13	33	35	11	26	20	33	13
Total	37	63	77	23	58	42	77	23
How could you change your invest. composition? More in:								
Mutual funds	5	12	13	4	9	11	13	5
Common stocks	1	6	6	0	4	4	2	3
Real estate	14	23	27	10	25	9	31	6
Fixed-yield asset	11	15	19	7	12	13	20	9
Other assets	6	7	12	2	8	5	11	0
Total	37	63	77	23	58	42	77	23
Would you say that you are at least:								
Conservative	28	59	70	19	55	37	69	18
Adventuresome	9	4	7	4	3	5	8	5
Total	37	63	77	23	58	42	77	23
Do you have funds set aside?								
No	26	40	45	20	41	23	56	11
Yes	11	23	32	3	17	19	21	12
Total	37	63	77	23	58	42	77	23

(continued)

APPENDIX II (Continued)

Item	Age		Education Level		Net Farm Income		Asset Position	
	1 ¹	2 ¹	1 ²	2 ²	1 ³	2 ³	1 ⁴	2 ⁴
Has recent fin. mkt uncertainty affected your invest. behavior?								
No	34	47	61	21	49	35	62	20
Yes	3	16	16	2	9	7	15	3
Total	37	63	77	23	58	42	77	23
Who manages your investments?								
Myself	32	58	67	20	54	34	69	21
Fin. planner	3	3	3	3	4	0	5	0
Other	2	2	7	0	0	8	3	2
Total	37	63	77	23	58	42	77	23
The source of invest. information is your own experience:								
No	12	20	26	7	17	17	24	9
Yes	25	43	51	16	41	25	53	14
Total	37	63	77	23	58	42	77	23
Do you plan to invest more in nonfarm assets?								
No	27	45	58	13	43	27	55	11
Yes	10	18	19	10	15	15	22	12
Total	37	63	77	23	58	42	77	23
In relation to your neighbors, Would you say that you are								
Wealthier	2	11	11	2	4	10	5	9
Less wealthy	15	23	29	8	24	13	38	2
Just as wealthy	20	29	37	13	30	19	34	12
Total	37	63	77	23	58	42	77	23

1¹ : Under 45 years old.

2¹ : Over 45 years.

1² : Below college level.

2² : At least college education.

1³ : \$20,000 or less.

2³ : Over \$20,000.

1⁴ : Less than \$600,000.

2⁴ : \$600,000 or more.