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Beginning Farmers in North Dakota

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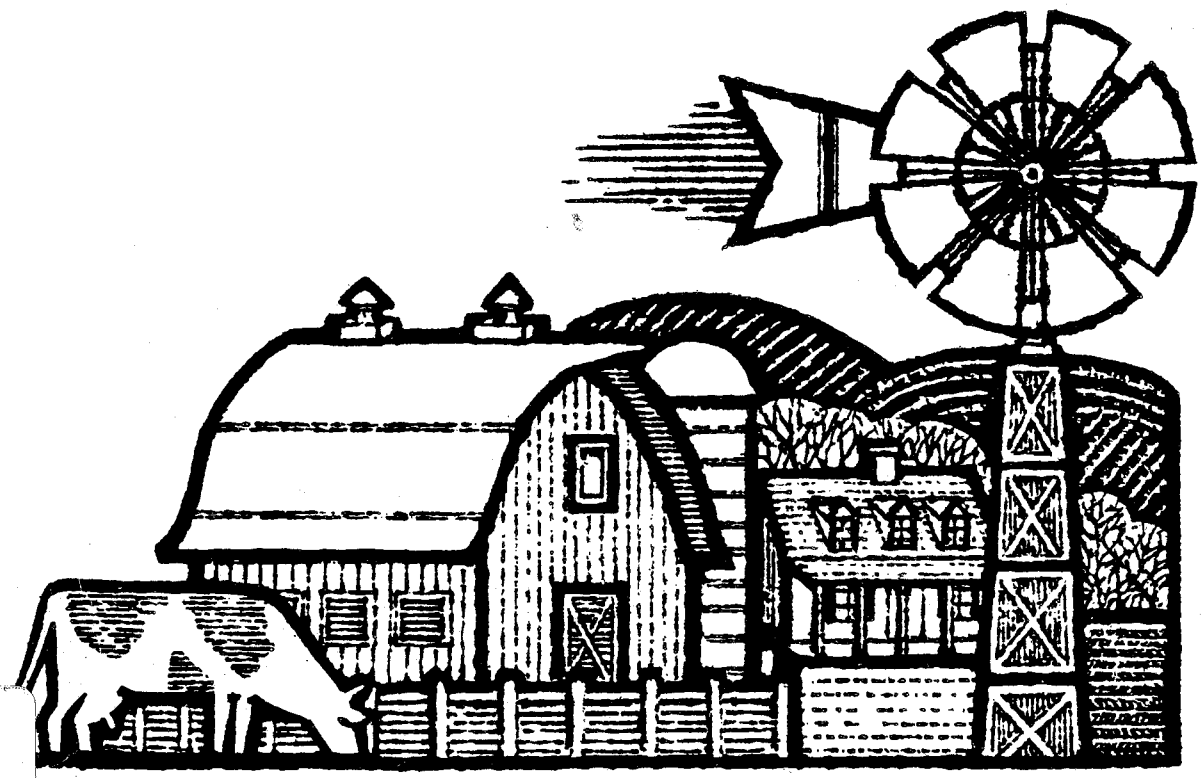

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Highlights

The decade of the 1980s has been characterized as one of extreme economic stress for many farm and ranch operators. While most attention has been focused on the negative aspects of the restructuring of the agricultural economy that has occurred during the last few years, some persons have chosen this same time period to launch their farming careers. The purpose of this study is to describe the demographic and economic characteristics of individuals who have begun farming in North Dakota during the period 1984-88 and to compare them where possible to characteristics of established farmers. Attributes of special interest include (1) farm characteristics, (2) demographic characteristics, (3) financial characteristics, (4) off-farm work, (5) participation in government agricultural programs, and (6) information sources, opinions, and outlook.

Information about the attributes of beginning farmers and their families was obtained from a telephone survey conducted in March and April 1989. Of 481 potential candidates, 352 were contacted by phone; 178 provided useable questionnaires, 89 did not qualify for inclusion in the survey, and 85 chose not to participate. The other 129 could not be contacted for a variety of reasons.

Respondents were screened to determine if they (1) had either begun farming as a career since 1984, re-entered farming since 1984, or taken on substantial financial and management responsibilities after farming with another person; (2) had farmed for at least one year at the time of the survey; and (3) considered farming to be their primary occupation. The major findings of the study follow.

- *About 57 percent of these operators owned no land, and more than 90 percent rented at least part of the land they farmed in 1988; beginning farmers operated slightly more than 1,200 acres. Producers who had purchased land had most often bought it from a relative, and almost half of these operators also rented part of the land they farmed from a relative. Sole proprietorships were the most common type of farm organization, but partnerships were more frequent for beginning farmers than for established farmers.*

- *Almost three-fourths of the beginning farmers were less than 31 years old, and almost 69 percent were married. Overall, beginning farmers had higher levels of education than established farmers and about 89 percent indicated that they had six or more years of farming experience prior to beginning farming or ranching as a career.*

- *Beginning farmers are much more likely to work at an off-farm job than their established counterparts and about 61 percent of the beginning farmers' spouses had worked off the farm in 1988. Of the producers who had not worked off the farm in 1988, 14 percent planned to look for off-farm work during 1989. Most would like to work 30 hours or more per week, would be willing to commute 20 miles or more, and would accept a wage of $5.00 per hour.*

- *Beginning farmers reported average and median asset values that were about one-third of those for the farm panel. 'Beginning farmers' assets were concentrated in the intermediate-term category, which includes machinery and breeding livestock. Beginning farmers reported debt levels that were roughly half of those for the farm panel members. Almost 9 percent reported that their debts exceeded the value of their assets, and another 18 percent had debt-to-asset ratios exceeding 0.7, a level often associated with severe financial stress. However, more than 92 percent were current on all their debt payments.*

- *Commercial banks were a major source of credit, and relatives (although not a major source for any type of credit) were more important for beginning farmers than for the panel producers. Relatively few had utilized the Bank of North Dakota's beginning farmer program, perhaps because of the 35-percent downpayment requirement for land.*

- *Average gross farm income for new farmers lagged about $40,000 behind that of established farmers, and new farmers' depreciation and interest expenses were about half the amount taken by established farmers. New farmers netted an average of $11,782 compared to $21,422 for established farms. Earnings from off-farm work made up 35 percent of their total income and appear to be a key factor affecting new producers' ability to become established in the industry.*

- *The average return to assets for the beginning farmers was somewhat higher than for their established counterparts due to the composition of their assets (mostly intermediate term), although the median value was lower. Almost half of the beginning farmers had a negative return to equity in 1988, but about 31 percent had returns to equity exceeding 10 percent.*

- *Most of the beginning farmers were confident of their ability not only to continue farming but also to expand their operation within the next three years. Nearly half were also satisfied or very satisfied with current financial returns in farming.*

This study has pointed out that beginning farmers are young, well-educated persons with a positive outlook about the future of farming. They have relied on their relatives for part of the land they operate and for partially financing their operation. Although their debt levels are higher compared to established farms, over 90 percent are current on their debt payments. The interdependence of the farm and nonfarm sectors of rural economies is particularly pronounced in the case of beginning farmers. The availability of adequate off-farm job opportunities for operators and their spouses may be critical to the success of these households.

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Beginning Farmers in North Dakota

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The decade of the 1980s has been characterized as one of extreme economic stress for many farm and ranch operators. In many respects, the economic conditions facing farmers have been the most severe since the 1930s (Murdock and Leistritz 1988; McKinzie et al. 1987; Runge 1986). The various manifestations of these adverse economic conditions have been described by many observers. (For example, see Baker 1987; Brake and Boehlje 1985; Doeksen 1987; Duncan and Harrington 1986; Leistritz et al. 1987; Murdock et al. 1987; Stinson et al. 1986.) Some authors have focused on the causes of the farm crisis that became evident in the mid-1980s (Harrington and Carlin 1987; Petrulis et al. 1987) by emphasizing the role of national monetary and fiscal policies and international markets in depressing farm incomes and land values. Others have emphasized the effects of the farm economic situation on producers, lenders, and rural communities that are economically dependent on farming (Harl 1986; Murdock and Leistritz 1988; Raup 1985). Among the more salient of these effects are the displacement of producers to other occupations and, often, to other places of residence; substantial losses for agricultural lenders and unsecured creditors such as farm supply dealers; and economic decline and population loss for farm-dependent communities.

While most attention has been focused on the negative aspects of the restructuring of the agricultural economy that has occurred during the last few years, some persons have chosen this same time period to launch their farming careers. Little current research has been done on the entry of new persons into farming. Much of the work centers around steps or barriers to entry (Smith and Brake 1983; Lowenberg-DeBoer 1982; Cole and Johnson 1982; Thomas 1969) and financing (LaDue 1979a, 1979b; Herr and Obrecht 1976). The classic approach to entering farming was to use the "agricultural ladder" (Boehlje 1973). The entrant would begin his career as a hired hand either at home or elsewhere, slowly accumulate funds to buy machinery, become a renter of a parcel of land, then a part-owner, and then an owner. Because capital has largely replaced labor in farming, this ladder approach may no longer be valid (Boehlje and Thomas 1979).

The control of capital and, thus, land is crucial to entering farming. Accumulating equity before entering is often difficult, and the beginning farmers is usually faced with keen competition from established farmers when acquiring land (LaDue 1979b). According to LaDue, the time required for a new farmer to accumulate from farm employment the funds necessary to make a constant proportional downpayment has increased from the 1950s to the 1970s.

The purpose of this study is to describe the demographic and economic characteristics of individuals who have begun farming in North Dakota during the period 1984-88. Attributes of special interest include

1. Farm characteristics, including land base and form of business organization;
2. Demographic characteristics of the operator and household;
3. Financial characteristics, including balance sheet and income statement and sources of capital;
4. Off-farm work by the farm operator and/or spouse;
5. Participation in government agricultural programs, including the Conservation Reserve Program and the 1988 Drought Assistance Act; and
6. Information sources and opinions.

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The report first briefly describes study procedures then examines specific characteristics of beginning farmers before drawing conclusions and discussing future implications.

Study Procedures

Information about the attributes of beginning farmers and their families was obtained from a telephone survey conducted in March and April 1989. A list of 481 individuals who were believed to qualify for the survey was assembled. (The names were obtained from government agencies and public institutions that have frequent contact with farmers.) Of the 481 individuals, 352 were contacted by phone; 178 provided useable questionnaires, 89 did not qualify for inclusion in the survey, and 85 chose not to participate. The other 129 could not be contacted for a variety of reasons (e.g., no answer, invalid phone number). Thus, the response rate for qualified individuals was 68 percent.

The survey incorporated a series of screening questions to determine if the survey respondents (1) had either begun farming as a career since 1984, re-entered farming since 1984, or taken on substantial and management responsibilities after farming with another person; (2) had farmed for at least one year at the time of the survey; and (3) considered farming to be their primary occupation.

Findings

The major findings of the study are discussed in this section. Characteristics of the beginning farmers are summarized and, in many cases, compared to those of a statewide longitudinal farm panel. The farm panel study was initiated in 1985, and values presented here are for 466 farmers who provided data in the 1989 survey. (For further discussion of the farm panel, see Leholm et al. 1985; Leistritz et al. 1987a; and Leistritz et al. 1989.)

Farm Characteristics

Characteristics of the farm units operated by the respondents are summarized in Table 1. About 57 percent of these operators owned no land, and more than 90 percent rented at least part of the land they farmed in 1988. Overall, these beginning farmers operated slightly more than 1,200 acres. In comparison, established farmers in the North Dakota farm panel operated about 1,560 acres.

Producers who had purchased land had most often bought it from a relative (Table 1), and almost half of these operators also rented part of the land they farmed from a relative. The land they are farming was most often obtained when the previous operator retired, downsized due to financial difficulties, or died.

Sole proprietorships were the type of farm organization most often reported by these producers, but partnerships were more frequent for beginning farmers than for members of the farm panel study (24 percent vs. 17 percent) (Leholm et al. 1985). Family

TABLE 1. FARM CHARACTERISTICS OF PERSONS WHO BEGAN FARMING 1984-1988, NORTH DAKOTA

Item	Units	New Farmers	Farm Panel
Acres owned in 1988:			
Mean	No.	268.6	742.6*
Distribution:			
None	Percent	57.1	19.8
1 to 160	Percent	11.5	12.9
161 to 320	Percent	5.7	21.3
321 to 640	Percent	14.8	46.0
More than 640	Percent	10.9	
Acres rented or leased from others in 1988:			
Mean	No.	941.0	848.2
Distribution:			
None	Percent	9.7	20.6
1 to 160	Percent	7.4	9.2
161 to 320	Percent	10.9	7.5
321 to 640	Percent	22.9	16.8
641 to 1280	Percent	26.2	25.4
More than 1280	Percent	22.9	20.2
Acres rented or leased to others in 1988:			
Mean	No.	6.3	35.1*
Total acres operated in 1988:			
Mean	No.	1201.6	1560.2*
Distribution:			
320 or less	Percent	12.6	6.9
321 to 640	Percent	21.1	12.2
641 to 960	Percent	20.6	15.5
961 to 1280	Percent	15.4	19.7
1281 to 1920	Percent	16.0	21.0
1921 or more	Percent	14.3	24.7
Tillable acres in operation:			
Mean	No.	746.2	1085.5*
Percent who purchased land from[a]:			
Relative	Percent	62.1	NA
Nonrelative	Percent	34.2	NA
Gift/inheritance	Percent	3.7	NA

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TABLE 1. FARM CHARACTERISTICS OF PERSONS WHO BEGAN FARMING 1984-1988, NORTH DAKOTA (CONTINUED)

Item	Units	New Farmers	Farm Panel
Why did previous operator give up the land respondent now operates?			
Died	Percent	12.1	NA
Retired	Percent	54.3	NA
Quit farming (not retired)	Percent	8.7	NA
Financial Difficulties	Percent	26.6	NA
Found alternative employment	Percent	6.9	NA
Other	Percent	12.8	NA
Percent who rented land from:			
Relative	Percent	42.8	NA
Nonrelative	Percent	57.2	NA
Farm type:			
Crop	Percent	55.2	61.9
Livestock	Percent	32.8	26.8
Diversified	Percent	12.1	11.3
Form of business organization:			
Sole proprietorship	Percent	69.0	80.5
Partnership	Percent	23.6	16.0
Family corporation	Percent	7.5	3.5

[a]Values are for producers who owned land (42.3 percent of all respondents).
*Means are statistically different at the 0.05 level using the Tukey test.

corporations were the business form used by 7.5 percent of the beginning farmers, compared to 2.7 percent of farm panel members (Leholm et al. 1985).

The location of survey respondents is summarized in Table 2. Regions 3, 6, and 8 (Figure 1) had somewhat higher percentages of beginning farms than total farm numbers reported in the 1982 and 1987 censuses (Table 2), but it is not clear whether this reflects larger numbers of entrants in these regions or is merely a result of the research methods used.

Demographic Characteristics

Almost three-fourths of the beginning farmers were less than 31 years old (Table 3). Males predominated, and almost 69 percent were married. Overall, beginning farmers had higher levels of education than established farmers in our farm panel survey. Only 4 percent had not completed high school, compared to 22 percent of established farmers. About 46 percent had one to three years of postsecondary education, and 21 percent had completed college or postgraduate education.

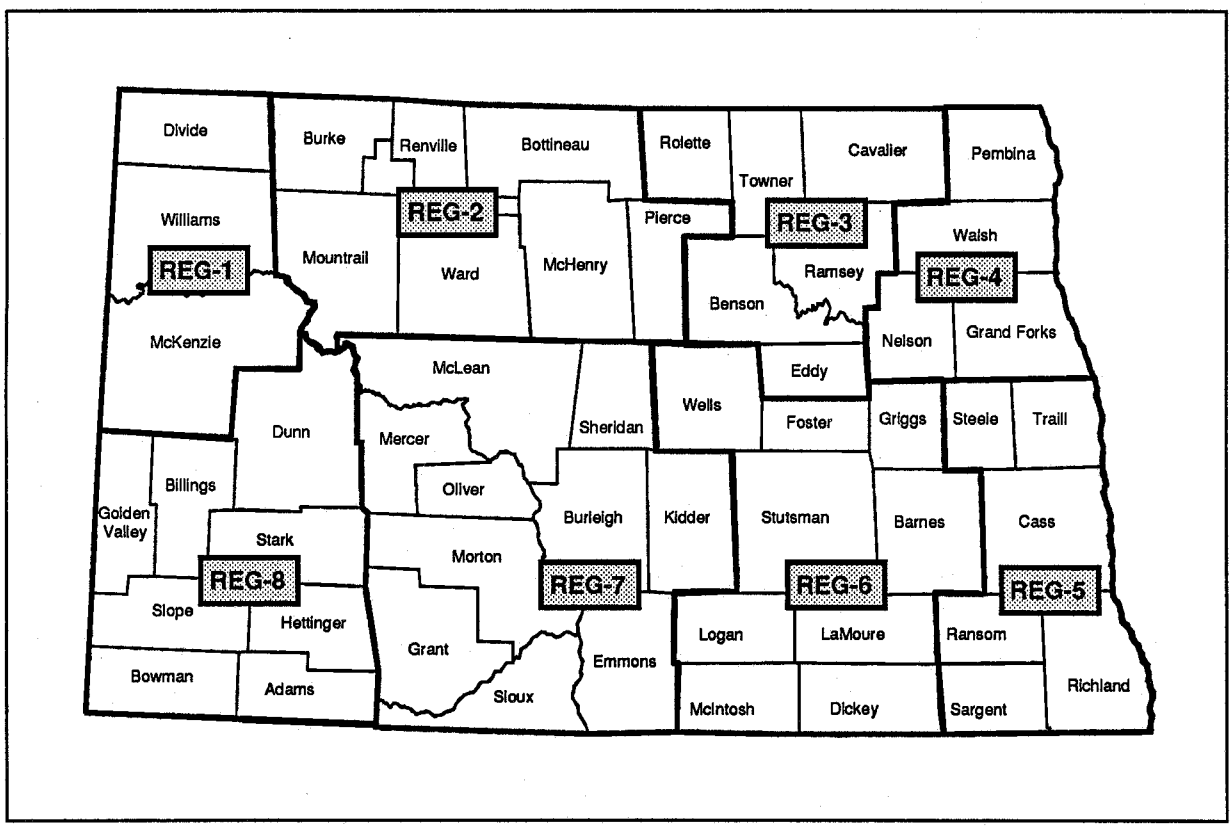

Figure 1. The Eight State Planning Regions in North Dakota

TABLE 2. DISTRIBUTION OF NORTH DAKOTA FARMS BY STATE PLANNING REGION FROM 1982 AND 1987 CENSUS OF AGRICULTURE AND BEGINNING FARMER SURVEY

Region	1982 Census	1987 Census	1988 Beginning Farmer Survey
	(----------*percent*----------)		
1	6.2	6.5	5.1
2	14.9	15.7	8.6
3	11.0	10.5	15.4
4	9.7	8.9	5.7
5	13.4	12.3	10.3
6	17.8	16.9	24.0
7	17.4	18.7	17.7
8	9.7	11.2	13.1

The household size for these new producers was quite varied; 31.5 percent reported that they were the only member, and almost 18 percent indicated five or more household members. In comparison, only 5.2 percent of established farmers' households had one member, and almost 24 percent had five or more members.

About 89 percent indicated that they had six or more years of farming experience prior to beginning farming or ranching as a career. Growing up on a farm and working for parents or relatives were the forms of experience most frequently cited. More than 97 percent indicated that their family provides at least 50 percent of the labor used on the farm. The percentage of farm labor provided by the family is one common approach for defining a "family farm" (Murdock and Leistritz 1988).

Off-Farm Employment

Beginning farmers are much more likely to work at an off-farm job than their established counterparts (Table 4). Our study found that 41 percent of beginning farmers were working off the farm in 1988 compared to 64 percent in a 1982 study (Cole and Johnson). Precision crafts (for example, mechanics, welders, construction trades) were the most common occupation group. Possibly reflecting their younger age, lack of experience, and lower seniority, new farmers had worked fewer years and slightly fewer days at their current off-farm job and had received lower average and median hourly wages than farm panel members. With a combination of fewer days of work and lower wage rates, the beginning farmers' gross earnings from off-farm work were also lower. Nevertheless, only about 16 percent planned to look for a different job in 1989.

About 61 percent of the beginning farmers' spouses had worked off the farm in 1988 compared to less than 41 percent of established operators' spouses (Table 5). A high percentage (64 percent) of North Dakota spouses were also working off the farm in the 1982 study by Cole and Johnson. Most worked in technical, sales, or administrative support jobs, usually within 20 miles of their residences. While most of the operators appeared to work off the farm only seasonally, many spouses worked year-around or at least for the majority of the year (for instance, teachers). Their median levels of both hourly wages and gross earnings were quite similar to those of the farm panel members. Almost 19 percent, however, planned to look for a different job within the next year.

Mean hourly wages for beginning farmers and spouses with different characteristics are summarized in Table 6. Few clear patterns are apparent, except that wage rates for both operators and spouses increase with additional years at a job. Jobs in the professional occupation category had the highest average compensation level.

Of the producers who had not worked off the farm in 1988, 14 percent planned to look for off-farm work during 1989 (Table 7). Most would like to work 30 hours or more per week, would be willing to commute 20 miles or more, and would accept a wage of $5.00 per hour.

TABLE 3. DEMOGRAPHIC CHARACTERISTICS OF PERSONS WHO BEGAN FARMING, 1984-88, NORTH DAKOTA

Item	New Farmers	Farm Panel
Age:		
Mean	29.2	50.1*
Distribution:		
25 or less	30.6%	0.0%
26-30	42.9%	3.4%
31-35	13.6%	11.0%
36-45	8.8%	23.7%
46 or older	4.1%	61.9%
Sex:		
Male	97.7%	98.5%
Female	2.3%	1.5%
Marital status:		
Single	30.3%	8.5%
Married	68.6%	89.3%
Separated/divorced/widowed	1.1%	2.2%
Years of formal education:		
Mean	13.6	NA
Distribution:		
Less than 12	4.0%	22.1%
12	29.1%	35.9%
13-15	45.8%	27.1%
16	14.3%	14.9%
17 or more	6.9%	0.0%
Household size:		
Mean	2.9	3.3*
Distribution:		
One	31.5%	5.2%
Two	14.3%	33.8%
Three	17.1%	20.3%
Four	19.4%	16.8%
Five or more	17.7%	23.9%
Household members under age 19:		
Mean	1.1	1.10
Distribution:		
Zero	46.8%	51.9%
One	18.9%	14.9%
Two	18.9%	17.1%
Three	12.0%	11.5%
Four or more	3.4%	4.6%
Years of prior farming experience:		
None	1.7%	NA
1-5 years	9.3%	NA
6-10 years	30.3%	NA
11-15 years	19.7%	NA
16-20 years	16.8%	NA
More than 20 years	12.2%	NA
How experience was acquired:		
Grew up on farm	77.3%	NA
Work for parent or relative	52.0%	NA
Work for neighbor	8.7%	NA
Other	2.3%	NA
Does family provide at least 50 percent of labor on farm?		
Yes	97.1%	97.4%

*Means are statistically different at the 0.05 level using the Tukey test.

TABLE 4. CHARACTERISTICS OF OFF-FARM EMPLOYMENT IN 1988 BY NORTH DAKOTA FARM OPERATORS WHO BEGAN FARMING 1984-88 AND FARM PANEL MEMBERS

Item	Units	New Farmers	Farm Panel[a]
Percentage who worked off the farm	Percent	41.1	22.2
Occupation of off-farm job:			
Professional/executive/administrative	Percent	11.8	18.0
Technical/sales/office support	Percent	16.2	16.0
Service jobs	Percent	11.8	8.0
Precision crafts	Percent	26.5	18.0
Equipment operator/laborer	Percent	22.1	34.1
Work for farmer	Percent	11.8	5.0
Miles commuted to job:			
Mean	Miles	33.0	21.0
Median	Miles	10.0	12.0
Distribution:			
Less than 10	Percent	42.6	42.9
10 - 19.9	Percent	23.6	23.8
20 - 49.9	Percent	22.0	23.8
50 or more	Percent	11.8	9.5
Years worked at job:			
Mean	Number	4.9	8.6*
Median	Number	3.0	6.0
Distribution:			
3 years or less	Percent	52.1	37.6
4 - 5 years	Percent	21.1	7.0
5 - 10 years	Percent	21.2	27.7
More than 10 years	Percent	5.6	27.7
Days worked off farm:			
Mean	Number	100.1	111.2
Median	Number	72.5	100.0
Distribution:			
Less than 50	Percent	32.4	31.6
50 to 99	Percent	27.9	17.4
100 to 200	Percent	25.0	30.6
More than 200	Percent	14.7	20.4
Hourly wage rate:			
Mean	Dollars	7.85	8.30
Median	Dollars	6.25	7.00
Distribution:			
Less than $5.00	Percent	15.9	7.5
$5.00 - $5.99	Percent	27.0	28.3
$6.00 - $6.99	Percent	14.2	13.3
$7.00 - $7.99	Percent	11.2	7.5
$8.00 - $9.99	Percent	9.51	5.1
More than $10.00	Percent	22.2	8.3

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TABLE 4. CHARACTERISTICS OF OFF-FARM EMPLOYMENT IN 1988 BY NORTH DAKOTA FARM OPERATORS WHO BEGAN FARMING 1984-88 AND FARM PANEL MEMBERS (CONTINUED)

Item	Units	New Farmers	Farm Panel[a]
Gross earnings:			
Mean	Dollars	7,671	10,908*
Median	Dollars	5,000	6,300
Distribution:			
Less than $1,000	Percent	7.5	7.3
$1,000 - $4,999	Percent	38.8	33.3
$5,000 - $9,999	Percent	25.3	18.8
$10,000 - $19,999	Percent	19.4	20.8
More than $20,000	Percent	9.0	19.8
Percent who plan to look for a different job next year	Percent	15.7	14.1
Different occupation	Percent	70.0	66.7
Same occupation	Percent	30.0	33.3

[a]SOURCE: Leistritz et al. 1989.
*Means are statistically different at the 0.05 level using the Tukey test.

TABLE 5. CHARACTERISTICS OF OFF-FARM EMPLOYMENT IN 1988 BY SPOUSE OF NORTH DAKOTA FARM OPERATORS WHO BEGAN FARMING 1984-88 AND FARM PANEL MEMBERS

Item	Unit	New Farmers	Farm Panel[a]
Percentage who worked off the farm	Percent	61.0	40.6
Occupation of off-farm job:			
Professional/executive/administrative	Percent	24.0	29.7
Technical/sales/office support	Percent	52.0	41.8
Service jobs	Percent	20.0	21.2
Precision crafts	Percent	4.0	0.0
Equipment operator/laborer	Percent	0.0	7.3
Work for farmer	Percent	0.0	0.0
Miles commuted to job:			
Mean	Miles	14.3	13.8
Median	Miles	10.0	10.0
Distribution:			
Less than 10	Percent	43.2	42.5
10 - 19.9	Percent	29.8	32.3
20 - 49.9	Percent	22.9	23.4
50 or more	Percent	4.1	1.8
Years worked at job:			
Mean	Years	3.9	7.0*
Median	Years	3.0	5.0
Distribution:			
3 years or less	Percent	58.7	44.0
4 - 5 years	Percent	20.0	13.8
5 - 10 years	Percent	17.3	23.5
More than 10 years	Percent	4.0	18.7
Days worked off farm:			
Mean	Days	159.9	149.4
Median	Days	170.0	180.0
Distribution:			
Less than 50	Percent	17.6	17.1
50 to 99	Percent	10.3	15.2
100 to 200	Percent	35.3	38.0
More than 200	Percent	36.8	29.7
Hourly wage rate:			
Mean	Dollars	5.77	6.57*
Median	Dollars	5.50	5.70
Distribution:			
Less than $5.00	Percent	34.8	30.2
$5.00 - $5.99	Percent	21.3	22.2
$6.00 - $6.99	Percent	16.6	7.9
$7.00 - $7.99	Percent	10.6	9.5
$8.00 - $9.99	Percent	10.6	11.2
More than $10.00	Percent	6.1	19.0

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TABLE 5. CHARACTERISTICS OF OFF-FARM EMPLOYMENT IN 1988 BY SPOUSE OF NORTH DAKOTA FARM OPERATORS WHO BEGAN FARMING 1984-88 AND FARM PANEL MEMBERS (CONTINUED)

Item	Unit	New Farmers	Farm Panel[a]
Gross earnings:			
Mean	Dollars	8,863	9,384
Median	Dollars	8,000	7,100
Distribution:			
Less than $1,000	Percent	4.4	5.7
$1,000 - $4,999	Percent	20.6	33.2
$5,000 - $9,999	Percent	33.8	21.0
$10,000 - $19,999	Percent	38.3	28.0
More than $20,000	Percent	2.9	12.1
Percent who plan to look for a different job next year	Percent	18.9	11.4
Different occupation	Percent	53.3	63.2
Same occupation	Percent	46.7	36.8

[a]SOURCE: Leistritz et al. 1989.
*Means are statistically different at the 0.05 level using the Tukey test.

TABLE 6. MEAN HOURLY WAGE RATES RECEIVED BY NORTH DAKOTA BEGINNING FARM OPERATORS AND SPOUSES BY SELECTED CHARACTERISTICS

Item	Operator	Spouse
	(------*dollars per hour*------)	
County type[a]:		
Agriculture dependent	8.03	5.59
Agriculture important	7.47	6.30
Other	8.11	5.65
Age:		
Less than 35	7.55	--
35 - 44	7.47	--
45 - 54	b	--
55 or older	b	--
Education:		
Less than high school	b	--
High school graduate	6.57	--
Post-secondary school	8.66	--
Days worked off the farm:		
Less than 50	7.79	5.16
51 to 100	8.51	5.00
101 to 200	8.00	6.36
Over 200	7.03	5.96
Years worked at job:		
Less than 2	6.73	5.16
2 to 5	7.80	5.82
6 to 10	7.44	6.51
More than 10	13.69	8.00
Plan to look for different job:		
Yes	5.86	5.99
No	8.23	5.76
Occupation types:		
Farm related	5.77	--
Professional/executive/administrative	17.91	7.12
Technician/sales/office	6.56	5.82
Service	6.42	4.16
Precision/craft/repair	7.84	6.42
Equipment operator/laborer	5.32	--

[a]Farming contributed at least 20 percent of the county's total earnings in **agriculture-dependent** counties, 10 percent to 19 percent in **agriculture-important** counties, and less than 10 percent in **other** counties (Ahearn, Bentley, and Carlin 1988).
[b]Data are not disclosed because n < 5.

TABLE 7. PLANS OF NORTH DAKOTA FARM OPERATORS TO LOOK FOR OFF-FARM WORK DURING THE YEAR

Item	Unit	New Farmers	Farm Panel
Percent who will look for off-farm work	Percent	14.4	4.8
Educational level of new farm operators who will look for off-farm work:		14.2	NA
Completed 8th grade only	Percent	0.0	5.9
Some high school	Percent	0.0	5.9
Completed high school	Percent	26.7	41.2
Attended college	Percent	40.0	17.6
Completed college	Percent	33.3	29.4
Hours per week:			
Mean	Hours	30.8	35.7
Median	Hours	30.0	40.0
Distribution:			
20 hours or less	Percent	33.3	14.3
21 to 36 hours	Percent	20.0	7.1
37 or more hours	Percent	46.7	78.6
Distance willing to commute:			
Mean	Miles	32.7	35.8
Median	Miles	20.0	40.0
Distribution:			
Less than 10 miles	Percent	26.7	0.0
10 to 20 miles	Percent	6.7	27.2
20 to 40 miles	Percent	60.0	36.4
More than 40 miles	Percent	6.7	36.4
Lowest acceptable hourly wage:			
Mean	Dollars	6.9	6.6
Median	Dollars	5.0	6.0
Distribution:			
Less than $5.00	Percent	0.0	15.4
$5.00 to $10.00	Percent	86.7	61.5
$10.00 or more	Percent	13.3	23.1

Balance Sheet and Sources of Capital

Beginning farmers reported an average of $135,117 in total assets at the end of 1988 (Table 8). Both the average and the median values were about one-third of those for the farm panel. The beginning farmers also reported a much smaller percentage of long-term assets (a majority owned no farmland). Their assets were concentrated in the intermediate-term category, which includes machinery and breeding livestock.

TABLE 8. FARM AND PERSONAL ASSETS AS OF DECEMBER 31, 1988, FOR NORTH DAKOTA FARM AND RANCH OPERATORS WHO BEGAN FARMING IN 1984-88 AND FOR FARM PANEL MEMBERS

Item	New Farmers	Farm Panel
Total farm and personal assets:		
Mean	$135,117	$392,478*
Median	$97,725	$284,960
Distribution:	(*percent*)	
Less than $50,000	18.8	2.7
$50,000 to 99,999	31.8	5.5
$100,000 to 249,999	38.8	43.3
$250,000 or more	10.6	48.5
Percent of assets that are:		
Long-term		
Mean	26.9	54.6*
Median	12.0	59.0
Intermediate-term		
Mean	50.4	34.7*
Median	47.0	30.0
Short-term		
Mean	22.8	10.7*
Median	16.0	6.0

*Means are statistically different at the 0.05 level using the Tukey test.

Beginning farmers reported debt levels that were roughly half of those for the farm panel members (Table 9), but here again a majority owned no farmland. Their debts, like their assets, were concentrated in the intermediate-term category. Almost 9 percent reported that their debts exceeded the value of their assets (Table 10), and another 18 percent had debt-to-asset ratios exceeding 0.7, a level often associated with severe financial stress. However, more than 92 percent were current on all their debt payments, compared to 91 percent of the farm panel members.

TABLE 9. FARM AND PERSONAL DEBTS AS OF DECEMBER 31, 1988, FOR NORTH DAKOTA FARM AND RANCH OPERATORS WHO BEGAN FARMING IN 1984-88 AND FOR FARM PANEL MEMBERS

Item	New Farmers	Farm Panel
Total Debt:		
Mean	$68,364	$128,245*
Median	$36,000	$81,000
Distribution:	(*percent*)	
Less than $10,000	22.9	21.0
$10,000 to 24,999	16.5	6.4
$25,000 to 49,999	17.7	8.7
$50,000 to 99,999	17.6	17.2
$100,000 to 249,999	22.9	31.9
$250,000 or more	2.4	14.8
Percent of debt that is:		
Long-term		
Mean	35.1	57.9*
Median	10.0	68.0
Intermediate-term		
Mean	50.5	28.4*
Median	43.0	20.0
Short-term		
Mean	14.4	13.7
Median	0.0	0.0

*Means are statistically different at the 0.05 level using the Tukey test.

TABLE 10. DEBT-TO-ASSET RATIO AS OF DECEMBER 31, 1988, FOR NORTH DAKOTA FARM AND RANCH OPERATORS WHO BEGAN FARMING IN 1984-88 AND FARM PANEL MEMBERS

Item	New Farmers	Farm Panel
	(*percent*)	
Mean	53.0	49.2
Median	45.0	31.0
Distribution:		
No debt	13.1	16.3
0.01 to 0.39	33.3	45.0
0.40 to 0.69	26.8	23.6
0.70 to 1.00	17.9	9.4
More than 1.00	8.9	5.7

Sources of capital reported by beginning farmers and farm panel members are compared in Table 11. The beginning farmers obtained more of their credit from FmHA and less from Farm Credit Services. Commercial banks were a major source of each type of credit (i.e., long-term, intermediate, and short-term), and relatives (although not a major source for any type of credit) were more important for beginning farmers than for the panel producers. Commercial banks have become more important to beginning North Dakota farmers during the 1980s. Cole and Johnson (1982) found that only 6 percent of beginning farmers used a bank loan to purchase land compared to nearly 45 percent of beginning farmers in our study who used a bank loan in 1988. Reliance on family assistance is consistent with earlier findings by other researchers (Brake and Wirth 1964; Watzek 1970). Relatively few (8 percent) had utilized the Bank of North Dakota's beginning farmer program, although funds are available and the approval rate on the loans is high. The applicant does, however, need to have a 35 percent downpayment. Because many financial institutions are reluctant to grant second mortgages on farmland, beginning farmers have difficulty meeting the downpayment requirement. Many applicants that do apply for the loan have been farming for about 10 years and have built up their equity (Legreid 1989).

TABLE 11. SOURCES OF CAPITAL FOR NORTH DAKOTA FARM AND RANCH OPERATORS WHO BEGAN FARMING 1984-88 AND FARM PANEL MEMBERS

Item	New Farmers	Farm Panel
	(----------*percent*----------)	
Percent of long-term credit obtained from:		
FmHA	30.0	25.0
FCS	7.7	34.0*
Bank	44.8	21.7*
Insurance company	0.0	0.4
Relatives	14.4	9.0
Sellers	3.0	8.0
Other	0.0	0.8
Percent of intermediate-term credit obtained from:		
FmHA	29.4	19.5*
FCS	4.3	15.2*
Bank	50.6	49.4
Insurance company	0.0	0.1
Relatives	8.0	3.5*
Sellers	4.7	10.4
Other	0.9	0.9
Percent of short-term credit obtained from:		
FmHA	16.8	7.0*
FCS	10.8	16.5
Bank	56.8	63.2
Insurance company	0.0	1.3
Relatives	7.1	1.6*
Sellers	1.9	5.5
Other	3.9	3.8

NA=Not available
*Means are statistically different at the 0.05 level using the Tukey test.

Income and Earnings

Average gross farm income for new farmers lagged about $40,000 behind that of established farmers (Table 12), and new farmers' depreciation and interest expenses were about half the amount taken by established farmers. Government payments were important to both groups of operators; new farmers received an average of $10,429, while established farmers received $17,631. Thirty-nine percent of new farmers received less than $5,000 in government payments. Average net cash farm income, or the "bottom line," for new farmers was just over half the amount reported by the farm panel members; new farmers netted an average of $11,782 compared to $21,422 for established farms.

The total family income and income sources of beginning farmers and farm panel members are compared in Figure 2. The total income for the beginning farmers was considerably less than that for the panel members. Earnings from off-farm work made up 35 percent of their total income and appear to be a key factor affecting new producers' ability to become established in the industry.

To evaluate cash flow situation of new farmers, three simulations were performed (Table 13). First, family living expenses were subtracted from total farm family income (i.e., net cash farm income plus all off-farm income). Poverty levels for various household sizes were used as a proxy for family living expenses. This simulation provides a measure of the ability of farm families to meet immediate cash flow needs. Under this scenario, new farmers had an average of $9,491 available for immediate cash needs; 45 percent had less than $5,000 available; and 26 percent were unable to meet these needs, i.e., they were living beneath the poverty level.

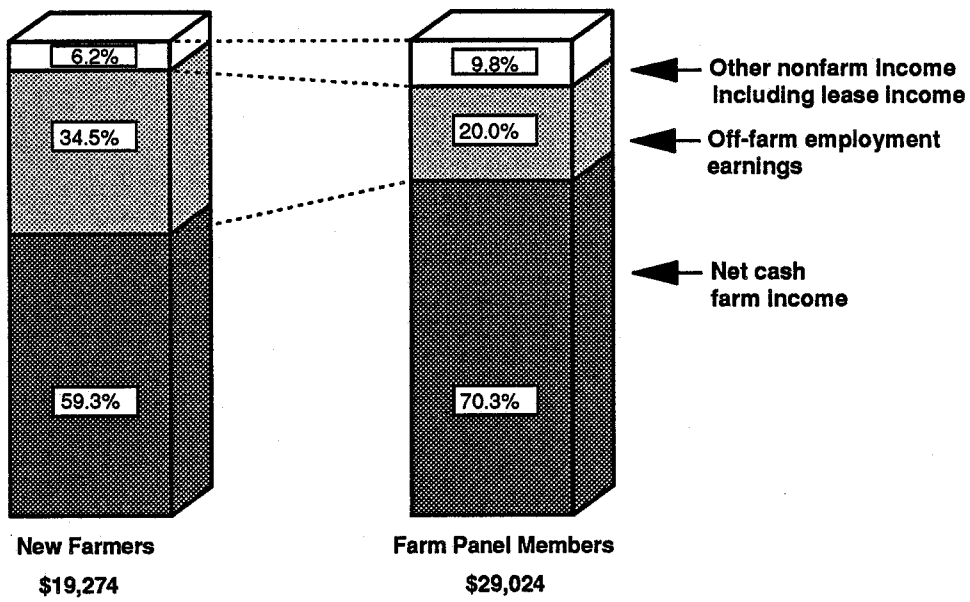
In the second simulation family living expenses were again subtracted, but depreciation expenses were added in order to obtain an estimate of total cash available in the short run. This analysis reflects the fact that (1) capital replacement (depreciation) charges can sometimes be deferred for several years and do not always impose an immediate demand for cash outlays and (2) part or all of a household's principal payments can sometimes be deferred through special arrangements with creditors. As indicated in Table 13 only 10.5 percent of new farmers were unable to meet short-run cash needs. A marked difference is apparent between new and established farmers. New farmers had an average of $17,416 available compared to $37,390 for established farmers.

A third simulation consisted of subtracting both family living expenses and principal payments from total farm family income. Principal payments were estimated to be 20 percent of intermediate-term debt plus 5 percent of long-term debt (equivalent to assuming 5-year repayment for outstanding intermediate-term loans and 20-year repayment for long-term loans). This simulation measures the ability of farm families to meet both current expenses and debt repayment demands in the long run. Results of the third scenario are perhaps the most revealing of the precarious long-run financial situation of many new and established farmers. Over 40 percent of each group could not meet long-run cash obligations. New farmers had only $3,229 available annually and established farmers had only $7,909 available in the long run.

TABLE 12. SELECTED INCOME AND EXPENSE ITEMS FOR 1988 FOR NORTH DAKOTA FARM AND RANCH OPERATORS WHO BEGAN FARMING 1984-88 AND FARM PANEL MEMBERS

Item	Unit	New Farmers	Farm Panel
Gross farm income:			
Mean	Dollars	76,263	115,808*
Median	Dollars	56,000	80,979
Distribution:			
Less than $40,000	Percent	28.8	18.4
$40,000 - $99,999	Percent	49.7	40.1
$100,000 - $249,999	Percent	18.4	32.3
$250,000 - $499,999	Percent	3.1	7.1
$500,000 or more	Percent	0.0	2.1
Depreciation expense:			
Mean	Dollars	7,475	16,736*
Median	Dollars	5,600	10,298
Distribution:			
Less than $5,000	Percent	42.8	27.0
$5,000 to 9,999	Percent	24.8	18.2
$10,000 to 19,999	Percent	24.1	26.6
$20,000 to $29,999	Percent	6.9	11.5
$30,000 or more	Percent	1.4	16.7
Interest expense:			
Mean	Dollars	5,931	11,741*
Median	Dollars	3,600	7,767
Distribution:			
None	Percent	12.3	12.3
$1 to $4,999	Percent	47.0	27.8
$5,000 to 9,999	Percent	20.9	17.0
$10,000 to 19,999	Percent	14.2	23.8
$20,000 or more	Percent	5.6	19.1
Government farm program payments:			
Mean	Dollars	10,429	17,631*
Median	Dollars	6,650	12,000
Distribution:			
Less than $5,000	Percent	39.0	22.0
$5,000 to 9,999	Percent	23.2	18.9
$10,000 to 19,999	Percent	23.2	29.7
$20,000 to $29,999	Percent	8.5	14.8
$30,000 or more	Percent	6.1	14.6
Net cash farm income:			
Mean	Dollars	11,782	21,422*
Median	Dollars	10,000	15,000
Distribution:			
Zero or negative	Percent	16.0	11.1
$1 to $4,999	Percent	14.7	9.6
$5,000 to 9,999	Percent	17.8	12.5
$10,000 to 24,999	Percent	38.6	35.5
$25,000 or more	Percent	12.9	31.3

*Means are statistically different at the 0.05 level using the Tukey test.



	New Farmers	Farm Panel
Net cash farm income	$11,431	$20,400*
Off-farm employment earnings	6,647	5,792
Mineral/hunting lease income	12	338*
Other nonfarm income	1,184	2,494*
Total farm family income	**$19,274**	**$29,024***

* Values are statistically different between the two group at the 0.05 level using the Tukey test.

Figure 2. Total Family Income of Beginning and Established North Dakota Farmers, 1988

TABLE 13. TOTAL FAMILY INCOME FOR NORTH DAKOTA FARM AND RANCH OPERATORS WHO BEGAN FARMING 1984-88 AND FARM PANEL MEMBERS

Item	New Farmers	Farm Panel
Total family income less estimated family living expenses[a]:		
Mean	$9,491	$18,461*
Median	$5,995	$12,085
Distribution:	(----------percent----------)	
Negative	26.2	22.9
0 to $4,999	18.4	10.6
$5,000 to $19,999	35.8	32.8
$20,000 or more	19.6	33.7
Total family income plus depreciation less estimated family living expenses:		
Mean	$17,416	$37,390*
Median	$14,058	$24,972
Distribution:	(----------percent----------)	
Less than 0	10.5	9.1
0 to $4,999	13.3	7.3
$5,000 to $9,999	14.0	6.4
$10,000 to 14,999	16.7	8.5
$15,000 to 19,999	12.6	9.6
$20,000 to $24,999	8.4	9.1
$25,000 to $29,999	3.5	7.9
$30,000 and over	21.0	42.1
Total family income less estimated family living expenses and principal payments:		
Mean	$3,229	$7,909
Median	$2,813	$3,875
Distribution:	(----------percent----------)	
Negative	41.0	42.1
0 to $4,999	15.6	10.8
$5,000 to $19,999	28.9	24.2
$20,000 or more	14.5	22.9

[a]The poverty income level threshold was used as a proxy for family living expenses. It is a conservative estimate based on size of household and is determined by the Bureau of Labor Statistics, U.S. Department of Labor (Weinberg 1985).
*Means are statistically different at the 0.05 level using the Tukey test.

Two other measures of farm profitability that were calculated are return on assets and return on equity (Table 14). The return on assets was estimated by adding interest paid to net cash farm income and subtracting an allowance for unpaid operator and family labor and management (Leistritz et al. 1989). The rate of return is then computed by dividing this dollar amount by the total capital invested in the business at the beginning of the year. As expected, the average return to assets for the beginning farmers was somewhat higher than for their established counterparts due to the composition of their assets (mostly intermediate term), although the median value was lower.

The rate of return to equity measures the return an operator is receiving on his own capital. The size of the ratio also indicates the rate at which a farm business is adding to or consuming its own capital stock. It is computed by subtracting a family labor allowance (the poverty income threshold was used as the family labor allowance) from net cash farm income and dividing by owner equity. Almost half of the beginning farmers had a negative return to equity in 1988, but about 31 percent had returns to equity exceeding 10 percent.

TABLE 14. RETURN ON ASSETS AND EQUITY FOR NORTH DAKOTA FARM AND RANCH OPERATORS WHO BEGAN FARMING 1984-88 AND FARM PANEL MEMBERS

Item	New Farmers	Farm Panel
Return on assets:		
Mean	7.1	5.9
Median	3.8	4.7
Distribution:	(--------*percent*--------)	
Negative	31.2	18.5
0.01 to 4.0	21.7	24.9
4.01 to 9.99	15.3	34.8
10.00 or more	31.8	21.8
Return on equity[a]:		
Mean	-1.0	0.4
Median	0.3	2.9
Distribution:	(--------*percent*--------)	
Negative	47.2	33.6
0.01 to 4.0	11.8	25.1
4.01 to 9.9	99.7	21.1
10.00 or more	31.3	20.2

[a]Excludes operators who reported negative equity.

Sources of Information

Beginning farmers are even more likely than established producers to contact NDSU Extension Service for information; 54.3 percent of the new farmers compared to 43.6 percent of farm panel members requested information. These producers were also more likely to attend field days but less likely to attend Extension short courses (Figure 3).

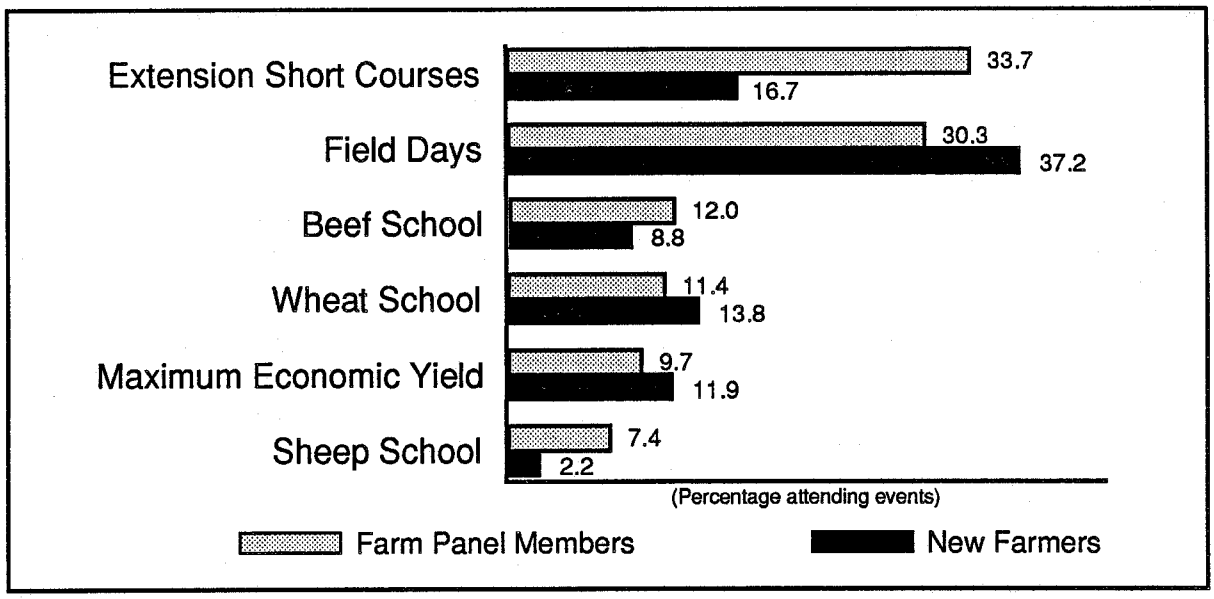


Figure 3. Specific NDSU Extension Activities Attended in Last Three Years by Beginning Farmers and Farm Panel Members, North Dakota, 1988

Management Adjustments

Beginning farmers were more likely than established producers to plan changes in their management practices. Overall, about 57 percent of the new farmers planned to make management changes compared to 34 percent of the established farmers. Nevertheless, the types of changes planned by the two groups were very similar (Figure 4). New farmers were most concerned about reducing operating expenses, refining their fertilizer and chemical programs, and changing cropping patterns.

Outlook

Despite the challenging economic conditions of the 1980s, most of the beginning farmers were confident of their ability not only to continue farming but also to expand their operation within the next three years (Figure 5 and Appendix Table 1). Nearly half were also satisfied or very satisfied with current financial returns in farming. Overall, the beginning farmers were somewhat more satisfied with farming than the panel members.

One topic about which the two groups had very similar views was the gross income level required for a viable farm operation (Table 15). Both groups indicated a mean level of about $135,000, and half of each group felt a farm or ranch could be viable at a gross income level below $100,000.

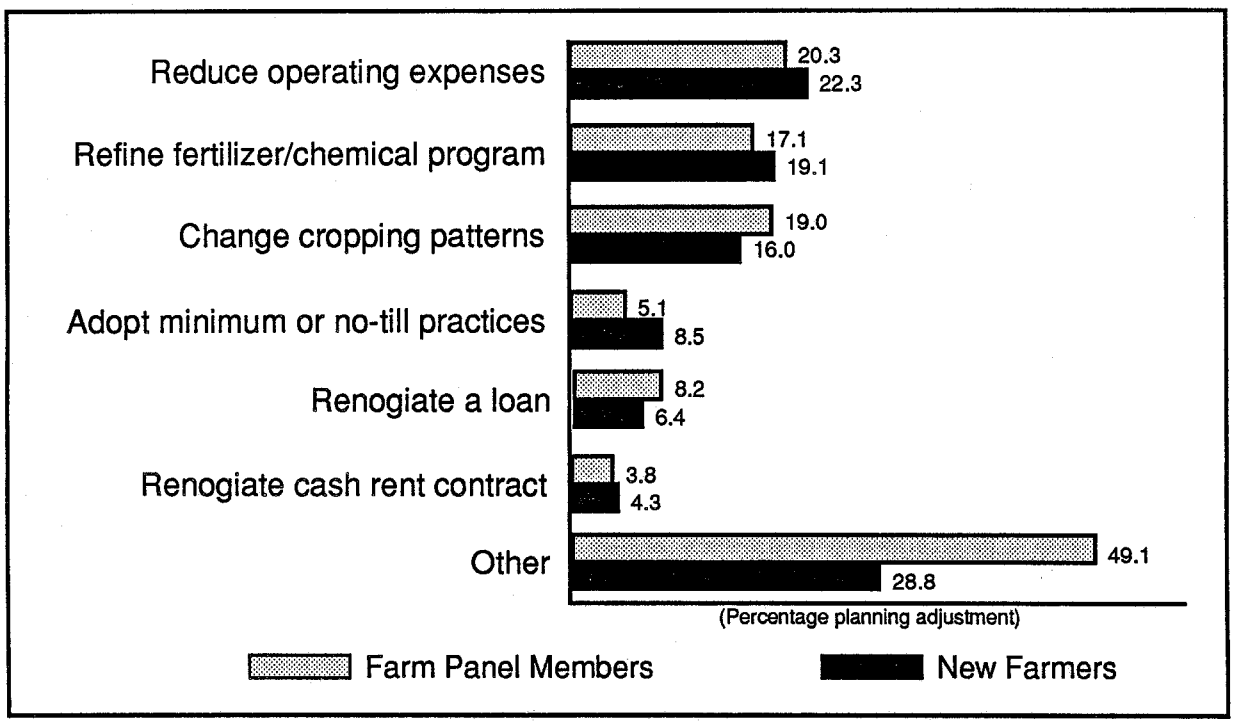


Figure 4. Management Adjustments Planned for Next Year by Beginning Farmers and Farm Panel Members, North Dakota, 1988

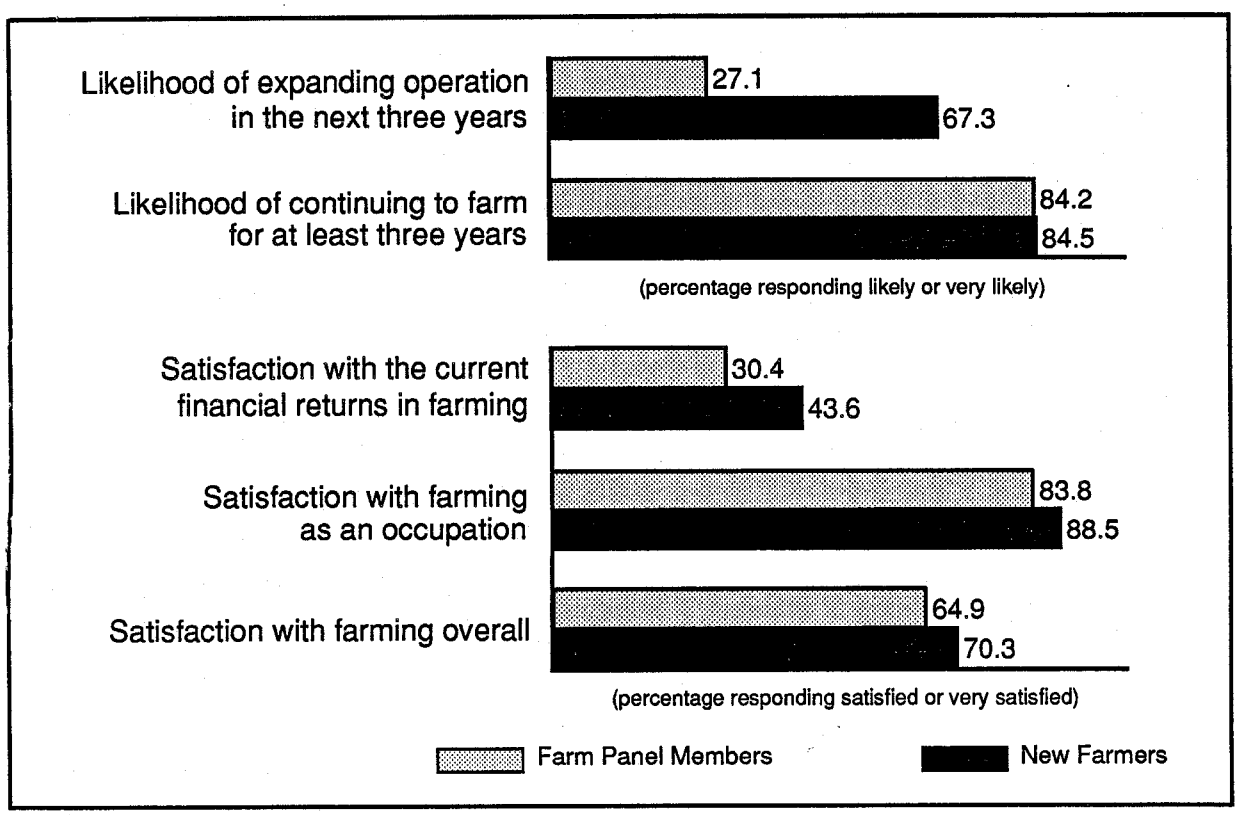


Figure 5. Outlook and Satisfaction With Farming, New Farmers and Established Farmers, 1989

TABLE 15. FARM OPERATOR'S OPINION OF A VIABLE-SIZED FARMING OPERATION IN TERMS OF GROSS INCOME

Item	Beginning Farmers	Farm Panel
Mean	$135,710	$134,164
Median	$100,000	$100,000
Distribution:	(----------*percent*----------)	
Less than $100,000	29.7	28.8
$100,000	20.6	22.1
$100,000 to 150,000	22.0	22.7
$150,000 to 250,000	23.2	21.5
More than $250,000	4.5	4.9

Conclusions and Implications

While the 1980s have been a period of severe restructuring for agriculture, some have begun farming during this period. Beginning farmers who participated in this study used a high percentage of rented land and invested much of their own capital in machinery and breeding livestock, suggesting that the "agricultural ladder" concept may have continuing validity. Most of the respondents appeared to be from established farm families. Most had purchased or rented some of the land they farmed from a relative, and some also listed relatives as a source of some of their initial capital. Most of the beginning farmers were in their 20s, more than two-thirds had some post-secondary education, and 21 percent had completed college. More than one-third indicated that some or all of their land had formerly been operated by a producer who had downsized or quit farming because of financial difficulties. This suggests that the economic conditions of the 1980s, with sharply reduced land prices and perhaps an increase in availability of land to rent or purchase, may have facilitated some persons' entry into farming.

A key factor enabling many of the beginning farmers to become established in the industry was earnings from off-farm employment. About 41 percent of the operators and 61 percent of their spouses held nonfarm jobs in 1988. Earnings from nonfarm employment averaged $6,647 per household and accounted for almost 35 percent of the total family income for beginning farmers. The importance of off-farm income to beginning farmers is enhanced because their net cash farm income was just over half of that reported by a panel of established producers. While several authors have commented about the increasing interdependence of the farm and nonfarm sectors of rural economies (Leistritz and Ekstrom 1986; Korsching 1982), this relationship is particularly pronounced in the case of beginning farmers. The availability of adequate off-farm job opportunities for operators and their spouses may be nearly as important to the ultimate success of these households as the availability of farmland for rent or purchase.

APPENDIX TABLE 1. FARM OPERATOR'S OUTLOOK CONCERNING FUTURE OF THEIR FARMING OPERATION AND SATISFACTION WITH FARMING

Item	Beginning Farmers	Farm Panel
	(----------*percent*----------)	
Respondent will expand operation in next three years:		
Very likely	35.1	10.7
Likely	32.2	16.4
Don't know	14.4	18.4
Unlikely	12.1	30.2
Very unlikely	6.3	24.3
Respondent will be able to continue to farm for at least three years:		
Very likely	56.3	41.1
Likely	28.2	43.1
Don't know	12.1	11.0
Unlikely	1.1	1.5
Very unlikely	2.3	3.3
Respondent's satisfaction with current financial returns in farming:		
Completely satisfied	3.4	1.3
Satisfied	40.2	29.1
Neither satisfied nor dissatisfied	27.6	17.7
Dissatisfied	24.1	43.3
Very dissatisfied	4.6	8.5
Respondent's satisfaction with farming as an occupation:		
Completely satisfied	41.4	27.8
Satisfied	47.1	56.0
Neither satisfied nor dissatisfied	10.3	7.4
Dissatisfied	1.1	7.2
Very dissatisfied	0.0	1.5
Respondent's satisfaction with farming overall:		
Completely satisfied	13.8	5.5
Satisfied	57.5	59.4
Neither satisfied nor dissatisfied	20.1	18.1
Dissatisfied	8.0	14.2
Very dissatisfied	0.6	2.8

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