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**AN ANALYSIS OF THE  
FARMERS HOME ADMINISTRATION'S  
MAJOR FARM LOAN PROGRAMS**

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## TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	
The Loan Programs Studied .....	1
THE DATA .....	2
Sample Definitions and Procedure .....	2
Data Collection .....	3
Response Rates .....	4
Editing .....	5
Indexation of Financial Data .....	5
WHO IS BEING SERVED - NEW BORROWERS .....	6
Age .....	6
Education .....	8
Tenure .....	8
Resources Used .....	10
Resource Quality .....	12
Employment and Income .....	13
Farm Records Maintained .....	14
Credit Worthiness .....	15
CONTINUING BORROWER CHARACTERISTICS AND PROGRESS .....	17
Age .....	19
Education and Experience .....	19
Resources Used .....	21
Farm Type .....	22
Records Maintained .....	22
Productivity .....	24
Success .....	25
Income and Net Worth .....	29
Progress .....	31
BORROWER PROGRESS, SUCCESS AND FAILURE .....	35
Definition of Progress and Success .....	36
Factors Influencing Borrower Progress .....	36
Region .....	36
Farm Type .....	38
Post-Loan Tenure Status .....	39
Soil Quality .....	40
Building Quality .....	42
Machinery Quantity .....	43
Pre-Loan Value of Total Assets .....	43
Beginning Post-Loan Value of Resources Controlled .....	45
Beginning Post-Loan Equity Ratio .....	47
Beginning Post-Loan Asset and Debt Structure .....	48
Beginning Post-Loan Total Net Cash Income .....	49
Beginning Post-Loan Off-Farm Income .....	50
Age at Time of First Loan .....	52
Level of Formal Education .....	54
Household Size at Time of First Loan .....	55

Level of Agricultural Education .....	57
Length of Pre-Loan Farming Experience .....	58
Level of Pre-Loan Farming Experience .....	59
Production Levels .....	60
Interest in Improving Productivity .....	62
Quality of Farm Record System .....	62
Factors Influencing Borrower Success .....	63
Region .....	66
Farm Type .....	66
Post-Loan Tenure Status .....	67
Adequacy and Quality of Physical Resources .....	67
Pre-Loan Total Assets .....	69
Beginning Value of Resources Controlled .....	69
Beginning Equity Ratio .....	69
Beginning Asset and Debt Structure .....	69
Beginning Cash Income .....	72
Age at Time of First Loan .....	72
Level of Formal Education .....	72
Household Size at Time of Application .....	72
Agricultural Education .....	74
Farm Experience .....	75
Type of Pre-Loan Experience .....	75
Management Factors .....	75
SUMMARY AND CONCLUSIONS .....	77
New Borrowers .....	77
Operating and Ownership Loans .....	77
Emergency Loans .....	78
Continuing Borrowers .....	79
Graduated and Terminated Borrowers .....	81
REFERENCES .....	83

# AN ANALYSIS OF THE FARMERS HOME ADMINISTRATION'S MAJOR FARM LOAN PROGRAMS

Eddy L. LaDue

The Farmers Home Administration (FmHA) is the primary government lender serving agriculture. As such, a high proportion of national agricultural credit policy is affected through FmHA. Although some credit is supplied to farmers through the Agricultural and Stabilization Conservation Service (ASCS) and the Commodity Credit Corporation (CCC), these programs are designed to facilitate commodity price support programs and, thus, reflect agricultural credit policy only peripherally. In addition, some credit was extended to farmers during and after 1976 by the Small Business Administration (SBA). However, it is FmHA that carries out most of the agricultural credit policy that requires direct government lending activity.

In its role as government lender, FmHA's lending program and policies emanate from the mandates of Congress. This leads the agency to assess its own performance in terms of the degree to which it has carried out the programs as designed by Congress. Evaluation tends to be in terms of dollars loaned, number of borrowers and similar characteristics. The more basic question as to whether the programs, as carried out, are meeting the basic goals which precipitated the specific programs is seldom addressed.

This study focuses on the three major farm loan programs; Farm Ownership Loans, Operating Loans and Emergency Loans. The intent of this study is to contribute to the assessment of these FmHA programs at three levels; (1) who is being served, (2) how successful are the programs, and (3) what factors are related to success or failure. This is accomplished by assessing the characteristics of new borrowers, continuing borrowers and former borrowers.

## The Loan Programs Studied

Farm Ownership Loans (FO) are made to the operators of not larger than family size farms and may be used to purchase farms, enlarge farms, construct or improve farm homes or other farm buildings, develop water supplies, improve farmland, provide drainage, refinance debt and other similar activities. Loans are secured by mortgages on real estate with additional security sometimes required. Loans are amortized over 40 years or less. Most of the loans referred to in this study were made when the FO loan limit was either \$100,000 or \$200,000.

Farm Operating Loans (OL) are made to the operators of not larger than family size farms and may be used for the purchase of livestock and machinery, operating expenses, repairs, family living expenses, refinancing debt and other similar activities. Loans are secured by a lien on crops produced, livestock, machinery, supplies and other personal property. Loans are made for periods of up to seven years. Most of the loans referred to in this study were made when the OL loan limit was \$100,000.

Emergency Loans (EM) are made to established farmers or ranchers who have suffered property damage or crop losses from a natural disaster in areas declared eligible for assistance. Loans are made to repair, replace or restore damaged property and for investments required to facilitate financial recovery of the business. Loans may be made for any term up to 40 years depending on the purpose of the loan and the type of security provided. Loans referred to in this study were made when there was no limit on the maximum loan size.

## THE DATA

The data were collected during 1978-79 by the FmHA in conjunction with the Economic Research Service (ERS) of the U.S. Department of Agriculture. The list of borrowers from which the sample was drawn included all those with FO, OL or EM loans who had either severed their relationship with FmHA during 1977 or who had outstanding loans as of January 1, 1978.

### Sample Definitions and Procedure

The data were collected for a stratified random sample of all FmHA borrowers in the United States. The strata consisted of four mutually exclusive groups of borrowers defined as follows:

(1) Collection Only and Unsatisfied Accounts - Includes borrowers with open judgment accounts and those who have been placed in collection only status. Collection only includes borrowers who still owe FmHA funds but FmHA sees little hope of collecting these funds unless the borrower's status changes unexpectedly.

FmHA has a five year waiting period before these people can be written off. These borrowers were active in the sense that they still owed money to FmHA. However, FmHA's involvement was restricted to collection of outstanding balances in contrast to their normal interaction with borrowers on farm management and finance issues.

(2) Active Borrowers - Those borrowers who had a loan outstanding with FmHA as of January 1, 1978 were not in collection only, and did not have judgments processed against them. Some of these borrowers may have had a loan assumed. However, they have at least one loan that remains outstanding.

(3) Write-Off in 1977 - Includes borrowers for whom FmHA wrote off an outstanding loan balance during 1977. Most of these result from a write-off of the remaining balance after a foreclosure, voluntary conveyance or assumption of part of the loan by another borrower. This category also includes borrowers with closed judgment accounts where the judgment was paid-in-full but was insufficient to cover the loan and closed judgment accounts where part or all of the judgment was written off.

(4) Paid-in-Full During 1977 - Borrowers who paid their last remaining FmHA loan during 1977. They had no loans in collection only and no active loans outstanding. This also includes borrowers for whom; (1) the entire loan balance was assumed by another borrower, (2) the value of property voluntarily conveyed to the government equalled or exceeded the loan balance outstanding, and (3) the value of property acquired through foreclosure was greater than the loan outstanding.

The paid-in-full category makes no distinction between successful borrowers who repaid their loans in the normal course of events, and unsuccessful borrowers who repaid their loans after selling out. When considered together these four categories provide a complete representation of the people obtaining credit from FmHA for the first time, those remaining with FmHA and those leaving. In a sense, this procedure treats FmHA service as a conduit and these categories measure those entering the conduit, those remaining in it and those exiting from it.



The sample was drawn from a complete list of borrowers in each category by the FmHA finance office in St. Louis. Each category was sampled randomly and independently. A random starting point was established for each list and then every "Xth" borrower was selected, where X is 1/sampling percentage rate. The sampling rates used were:

Collection Only	50%
Active	3.33%
Write-Off	100%
Paid-in-Full	10%

### Data Collection

Each FmHA county supervisor was sent a list of borrowers located within their jurisdiction who were included in the sample. Accompanying this list of borrowers was a set of instructions detailing the information requested and how the required information was to be prepared and returned. The information included:

- (1) The oldest application form on file for the borrower. As long as the borrower's application with FmHA was uninterrupted, these data represent the status of the borrower at the time FmHA started providing services to this individual.
- (2) Copies of Farm and Home Plans (form FmHA 431-2) developed for the borrower. This form provides both balance sheet and income data about the business. Particular stress was placed on getting a complete Farm and Home Plan including an actual credit statement and operating income and expense data covering the 1977 year.
- (3) Supplemental questionnaire designed to elicit information about the borrower that are not collected on any of the standard forms. This questionnaire was completed by the county supervisor.
- (4) The transaction record dated January 1, 1978 for each loan outstanding. This record indicates the outstanding balance and payment record for the loan.
- (5) Copies of forms used to report special actions relative to the borrower. These forms were used for relatively few borrowers, but provided the detail necessary for completely understanding potential loss situations. These forms were:
  - (a) Settlement of indebtedness by cancellation, charge-off, compromise or adjustment (FmHA 456-1 or 456-2)
  - (b) Assumption (FmHA 460-1)
  - (c) Property acquired by government (FmHA 464-6)
  - (d) Release from liability (FmHA 465-8)
  - (e) Judgment (FmHA 455-20 or FmHA 219)
  - (f) Mortgaged real estate sold (FmHA 465-6A)

Most of the data requested should have been on file in the county office. However, a procedure for collection of missing 1977 Farm and Home Plan data by mail, with phone follow-up, was described for supervisors. The initial and follow-up

letter, as well as the forms to be completed and a list of tips for completing such forms, were provided.

Supervisors were asked to identify by code number the kind of enterprises on the farm and the type of other lenders from whom the borrower had obtained funds as listed on the application form and Farm and Home Plan. This was necessary because of the overlapping use of words to identify enterprises and the use of specific names for lenders. For example, cows may be either beef or dairy, beans either soybeans or kidney beans, and John Hancock could be a local farmer or an insurance company. Supervisors were also asked to check over each form before sending it, to ensure that it was legible, complete and accurate. The data were mailed to the national FmHA office and then forwarded to ERS in Washington, DC.

### Response Rates

Response rates were quite high for a mail survey and showed reasonable consistency between the different categories of borrowers (table 1). However, when viewed as the response of the personnel of an agency to a request from the agency head office the response rate was not impressive.

Table 1. RESPONSE RATES  
FmHA Survey, 1978

Borrower Classification	Total Population	Sample Size	Number of Respondents	Response Rate
Collection Only	1,684	842	500	59%
Active	185,520	6,184	4,413	71%
Write-Offs	432	432	296	69%
Paid-in-Full	19,850	1,985	1,355	68%
TOTAL	207,486	9,443	6,564	70%

After allowing for editing deletions, the final response rates taken over all borrowers were as follows for each source of information; supplemental questionnaire 65 percent, application forms 60 percent, and 1977 Farm and Home Plans 39 percent. Between borrower categories these final response rates were also reasonably consistent for the questionnaire and the application forms, but not for the Farm and Home Plans. Farm and Home Plan final response rates varied from a low eight percent for collection only borrowers, to 18 percent for write-offs, 26 percent for paid-in-fulls and 48 percent for active borrowers.

The low response rates for collection only and write-off borrowers can be attributed to the limited interaction which FmHA has with these borrowers. Collection only loans are carried for five years before being written off, thus, it is probable that many of the borrowers in these two categories could not have been located. For those who were located, it would be unrealistic to expect a high

level of cooperation given the status of their relationship with FmHA. For borrowers from whom 1977 Farm and Home Plans were not available the supervisor was asked to estimate assets, liabilities and income on the supplemental questionnaire.

Obtaining Farm and Home Plans from paid-in-full borrowers could also be expected to be difficult. Many of these borrowers would feel that they no longer had any obligation to FmHA since they no longer owed them any money. The low percentage of active borrowers for whom a Farm and Home Plan was received was surprising. Since FmHA regulations require a complete Farm and Home Plan for each borrower, the absence of completed plans by late 1978, when the data were requested, implies a considerable shortfall in compliance with that regulation at the county level.

### Editing

Due to the nature and size of the data set, several levels of editing were instituted. Upon receipt of the data, ERS checked to ensure that the information received was, in fact, for borrowers in the original sample. Any substitutions were discarded. The remaining data were then organized and identified for keypunching. The data were keyed to tape and then ERS checked for keypunch errors by comparing a sample of keypunched data with the original data. The error rate observed was deemed to be within acceptable limits. Following the keypunch error check, the data tapes and original forms were sent to Cornell University in the Spring of 1980.

Data received from the ERS by Cornell University were then subjected to a series of range and consistency checks. A computer edit routine was developed which identified variables with; (1) values outside of a "normal" range, (2) values which were inconsistent within and between the different sources of information, and (3) variables with addition or subtraction errors. Errors identified by this routine were reviewed and corrected by Cornell employees with accounting and finance training and agricultural experience. This edit routine was repeated three times.

In spite of efforts to have the supervisors check the data and to check keypunch accuracy, numerous errors were found during this edit process. The keypunch error rate was high<sup>1/</sup>, a high proportion of application forms and Farm and Home Plans had mathematical errors, were inaccurately completed or incomplete. In many cases complete data were presented on the form but were inaccurately entered. Inconsistent units were often used; for example, selling 10 tons of corn at \$3.00 per bushel.

### Indexation of Financial Data

To compare changes in the values of items over time and to appropriately compare farms that obtained their first loans from FmHA in different years, an indexation of financial data was required. All items were indexed to 1977 dollars. The indices used are as follows:

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<sup>1/</sup> In at least one case a change in the keypunch procedure for a set of variables occurred in the middle of the keypunch process and the data keypunched prior to the change were not corrected. This was not considered as part of the edit process.

<u>Financial Item</u>	<u>Index Used</u>
Income	Parity index of prices paid by farmers
Real Estate	Land value index
Livestock	Index of prices received by farmers for livestock products
Machinery	Index of prices paid by farmers for motor vehicles and machinery
Personal Property	Parity index of prices paid by farmers

The parity index of prices paid by farmers for commodities and services, including interest, taxes and wages rates was used because it was considered the best measure of changes in the purchasing power of retained farm income. Net worth was indexed by using the same percent equity in 1977 dollars as existed in the year of the data. Thus, debt and equity were calculated from the indexed value of total assets.

#### WHO IS BEING SERVED - NEW BORROWERS?

Studies of the characteristics of new FmHA FO and OL program borrowers conducted in 1956 and 1966 (Bierman and Case, Herr 1969, Herr 1970) found FmHA borrowers to be younger than the average of all farmers and younger than borrowers from commercial banks and the Farm Credit System. FmHA borrowers also had lower equities, were more likely to be tenants, and operated smaller businesses than operators borrowing from other lenders. These researchers reported that, in general, borrowers obtaining loans from FmHA "comprised a special group who apparently could not have obtained similar loans from other sources" (Herr 1970). Similar studies for historical time periods have not been conducted for the EM programs.

All borrowers in the data set who had applied for and obtained their first FmHA loan during 1977 were isolated to determine the characteristics of new FmHA borrowers. Including only those who applied for and obtained loans in 1977 omits those borrowers who applied in 1976 for loans received in 1977. However, there is little reason to believe that those excluded would have basically different characteristics than those who both applied for and received loans in 1977.

#### Age

Although the proportion of U.S. farm operators who were under 35 years of age increased between the 1960s and 1970s, the proportion of FmHA FO borrowers under 35 expanded more rapidly than the general population. The percent of FmHA borrowers under 35 years of age increased from one-third to approximately one-half of all FO borrowers (table 2). The proportion of FO borrowers over age 55 remained relatively constant as did the proportion of all farmers who were over 55 years. The shift, therefore, is not from old borrowers to young borrowers, but a tendency to make loans to somewhat younger borrowers.

The OL program moved strongly toward service to younger borrowers (table 3). As of 1977 over half of the borrowers were under 35 years of age. The percent of borrowers in each of the older age groups declined.

Table 2. PERCENTAGE DISTRIBUTION OF FARM OPERATORS BY AGE  
NEW FARM OWNERSHIP BORROWERS AND ALL U.S. FARMERS

Operator Age (years)	FmHA Farm Ownership Borrowers		All U.S. Farmers	
	1966 <sup>a/</sup>	1977	1964 <sup>b/</sup>	1978 <sup>c/</sup>
	-----Percent-----			
Less than 25		12		3
25 to 34	33	37	11	13
35 to 54	56	39	48	44
55 to 64		8	24	24
65 and over	11	4	17	16

a/ Census of Agriculture, 1964

b/ Census of Agriculture, 1978

c/ Herr, William McD., 1970

Table 3. DISTRIBUTION OF FARM OPERATORS BY AGE  
NEW OPERATING AND EMERGENCY LOAN BORROWERS

Operator Age (years)	FmHA Operating Loan Borrowers		FmHA Emergency Loan Borrowers
	1966 <sup>a/</sup>	1977	1977
	-----Percent of Borrowers-----		
Less than 25		21	9
25 to 34	31	37	29
35 to 54	50	30	47
55 to 64		10	12
65 and over	19	2	3

a/ Herr, William McD., 1970

The age distribution of EM borrowers was more like the average of all U.S. farmers than either of the other two groups. However, even that group has more borrowers under 35 and fewer borrowers over 55 than is found in the population of all farmers. There are at least two explanations for this result. First, a high proportion of current OL and FO borrowers who qualify for EM loans are likely to obtain them because they already have developed a working relationship with FmHA. Second, many older farmers who suffer disaster losses will be able to borrow from conventional

sources and, thus, will not meet the test for credit. Some such borrowers may also feel some pride in not "having" to go to FmHA for credit.

### Education

The education levels of borrowers in all three loan programs were quite similar (table 4). About 60 percent of the borrowers had eight to 12 years of schooling. About a quarter of all borrowers had training beyond the high school level. A slightly higher proportion of borrowers in the OL and EM programs have more than two years of college.

Table 4. DISTRIBUTION OF FARM OPERATORS  
BY EDUCATION LEVEL  
NEW FmHA BORROWERS, 1977

Education Level or Type	Ownership Loan	Operating Loan	Emergency Loan
(years)	-----Percent of Borrowers-----		
Less than 8	17	15	16
8 to 12	60	59	60
13 to 14	18	15	12
15 to 16	4	6	11
17 or over	1	5	1
Agricultural Education:			
High School	47	49	51
College Level	15	12	15
None	38	39	34

About half of all borrowers had received agricultural training at the high school level. This could include either vocational education while in high school or young farmer agricultural education provided by the high school after graduation. Although about 25 percent of all borrowers have college level education, that college level training was in agricultural field only about 60 percent of the time.

Between 35 and 40 percent of all borrowers received no formal training in agriculture. For these borrowers their training in agriculture must come from their farm experience. Ninety-nine percent of the borrowers in all three programs had some farm experience. Eighty-five percent obtained their experience on the home farm while the other 14 percent worked on farms not owned by the family.

### Tenure

The predominant tenure arrangements for FO borrowers in 1977 was part owner with operators divided about evenly between those who were primarily owners and those who were primarily renters (table 5). A borrower is defined as primary owner if

half or more of the operated land is owned by the borrower. Compared to 1966 (table 6), more 1977 FO loans were made to part owners and fewer to full owners. Borrowers are apparently renting additional land to expand size of business before making the step to purchase. Nearly half of all borrowers were renting more than half of their cropland at the time they obtained an operating loan.

Table 5. PERCENTAGE DISTRIBUTION OF  
FmHA BORROWERS BY TENURE  
NEW FmHA BORROWERS, 1977

Tenure Class	Ownership Loan	Operating Loan	Emergency Loan
-----Percent of Borrowers-----			
Full Owner	25	18	23
Primary Owner	21	10	18
Primary Renter	22	15	29
Tenant	25	40	30
Not Farming	7	17	--

Table 6. PERCENTAGE DISTRIBUTION OF FARM OPERATORS BY  
TENURE 1966 FmHA BORROWERS and  
ALL U.S. OPERATORS 1964 and 1978

Tenure Class	1966 FmHA Borrowers		All U.S. Farm Operators	
	Ownership	Operating	1964	1978
-----Percent of Borrowers-----				
Full Owner	35	26	58	58
Part Owner	33	26	25	29
Tenant	26	38	17	13
Not Farming	6	10	--	--

Source: Herr, 1969; Herr, 1970; 1974 Census of Agriculture, 1978 Census of Agriculture.

Between the 1960s and the 1970s the tenure status of OL borrowers changed very little. Approximately two-fifths of the borrowers are tenants and a quarter are part owners. The major change over the decade was a decline in the proportion who were full owners and an increase in the proportion who were just starting in farming and, thus, were not farming at the time they applied for the loan.

Nearly half of all EM borrowers were part owners. Although the proportion of all U.S. farm operators who are part owners increased between the 1960s and 1970s (table 6), the proportion of EM borrowers who are part owners far exceeds the proportion found in the general population. Emergency Loan borrowers were also more likely to be tenants than average U.S. farm operators.

### Resources Used

Ownership and OL borrowers operated similar size farms in terms of both total acres and acres of cropland (table 7). Ownership Loan borrowers had \$102,000 total assets while OL borrowers had somewhat less. Ownership Loan borrowers already owned \$55,000 worth of real estate at the time they applied for their loan. This was somewhat higher than the amount owned by OL borrowers in spite of the fact that OL borrowers owned somewhat fewer acres. The apparent higher real estate values for FO borrowers is explained by the type of farming. Fifty-eight percent of the FO borrowers had livestock or fruit operations which are likely to have more buildings or improvements on the land or vegetable operations which normally use higher value land. Only 46 percent of OL borrowers had such operations.

Table 7. RESOURCES USED BY FmHA BORROWERS  
BY LOAN PROGRAM  
NEW FmHA BORROWERS, 1977

Item	Loan Program		
	Ownership	Operating	Emergency
<u>Total Acres</u>			
Operated	275	278	536
Owned	137	164	250
<u>Crop Acres</u>			
Operated	211	191	333
Owned	87	110	170
<u>Total Assets</u>	\$102,000	\$80,000	\$202,000
Real Estate	55,000	41,000	115,000
Nonreal Estate	47,000	39,000	87,000
<u>Total Debt</u>	\$ 45,000	\$43,000	\$ 97,000
Real Estate	16,000	19,000	42,000
Nonreal Estate	29,000	24,000	55,000
<u>Net Worth</u>	\$ 57,000	\$37,000	\$105,000
Percent Equity	56	46	52
<u>Borrowed for</u>			
Operating			
Last Year	\$ 11,000	\$16,000	\$ 39,000



Both OL and FO borrowers were quite highly leveraged. However, FO borrowers had significantly more equity than OL borrowers. This difference is likely necessary given the character of the loan each is requesting. Many operating loans will be self liquidating in less than a year while the payback period on an ownership loan will normally be many years.

Operating Loan borrowers, when compared to FO borrowers, had borrowed greater amounts for operating expenses in the year before applying for a loan. Again, this lower level for FO farms is likely caused by the higher number of livestock enterprises, where income is frequently received more uniformly throughout the year. The OL data also reflect a greater number of beginning farmers who have developed less of an internal cash resource base from which to draw upon for seasonal needs.

Emergency Loan borrowers have a basically different resource base than the FO and OL borrowers. Emergency Loan borrowers had nearly twice as many total acres and two-thirds more cropland. Total assets were also about double those of farmers in the other two programs. However, EM borrowers were also highly leveraged. They had nearly twice as much debt resulting in a similar percent equity or leverage ratio to that experienced by borrowers in the other programs. Emergency Loan borrowers also borrowed two to three times as much for annual operating expenses.

The basically different character of EM borrowers is also indicated by the distribution of borrowers by asset level (table 8). Two-thirds to three-quarters of the FO and OL borrowers had less than \$100,000 of assets. Many fewer EM borrowers had a total investment that was that small. A much higher proportion of the EM borrowers had assets over \$400,000. Further, the level of assets for those with over \$400,000 is higher. The FO and OL borrowers with the most assets owned about \$800,000 in farm property and owned about \$450,000 in debt. The largest EM farm in the sample had assets of \$2.4 million and debts of \$1.6 million.

Table 8. DISTRIBUTION OF FmHA BORROWERS BY  
TOTAL ASSETS AT TIME OF APPLICATION, 1977

Total Assets	Loan Program		
	Ownership	Operating	Emergency
-----Percent of Borrowers-----			
Less than \$100,000	66	74	44
100,000 to 199,999	21	16	26
200,000 to 299,000	8	5	13
300,000 to 399,999	2	2	4
400,000 and Over	3	3	13

Although the absolute size of FO and OL borrower farms have increased between 1966 and 1977, the relative size is about constant for FO borrowers and has increased modestly for OL borrowers (table 9). In both cases, the average size

remains less than half the size of the average U.S. farm. Emergency Loan borrowers are somewhat below the U.S. average in size but much nearer to the average size than borrowers from either of the other two programs.

Table 9. RELATIVE SIZE OF NEW FmHA BORROWER FARMS  
BY LOAN PROGRAM, 1966 and 1977

Loan Program	1966	1977
	-Assets as a % of U.S. Average-	
Ownership	38	40
Operating	21	31
Emergency	b/	80
Average U.S. Assets Per Farm <sup>a/</sup>	\$80,000	\$254,000

a/ For comparability with the average date of balance sheet preparation, January 1, 1966 data were used for 1966 and the average of January 1, 1977 and January 1, 1978 used for 1977. The 1966 data are for a fiscal year while the 1977 data are for a calendar year.

b/ Not available.

### Resource Quality

It is sometimes alleged that FmHA borrowers use lower quality resources than other farmers. In an attempt to assess resource quality, county supervisors were asked to assess the character of the physical resources on the farm business.

Building quality was slightly lower on OL than FO farms (table 10). Since OL farms are frequently rented or leased, the minor difference observed is not surprising. Ownership and EM borrowers had similar building quality. Over one-third of all borrowers had buildings that were judged to be of only fair or poor quality.

Surprisingly, given the level of concern about the excess machinery frequently expressed by academicians and lenders, few of these new FmHA borrowers were judged to have more machinery than necessary. Emergency Loan borrowers had too much machinery slightly more frequently than borrowers for the other two programs. About two-thirds of the borrowers were judged to have about the right amount of machinery. Few had inadequate machinery. Machinery condition was quite uniform among the programs. Approximately 20 percent of all borrowers had machinery in either fair or poor condition.

Soil quality is relatively uniform among the loan programs. Less than 30 percent of the farms had fair or poor land. Over half were on land that was characterized as "good".

Table 10. CHARACTER OF RESOURCES USED BY  
NEW FmHA BORROWERS BY LOAN PROGRAMS, 1977

Resource & Quality Level	Loan Program		
	Ownership	Operating	Emergency
-----Percent of Borrowers-----			
Building Quality			
Excellent	7	5	5
Very Good	16	7	12
Good	40	40	46
Fair	31	38	27
Poor	6	10	10
Machinery Quantity			
Excessive	0	1	0
More than Necessary	3	4	7
About Right	71	65	65
Sufficient	22	25	23
Inadequate	4	5	5
Machinery Condition			
Excellent	6	7	3
Good	43	41	47
Average	30	35	32
Fair	18	15	16
Poor	3	2	2
Soil Quality			
Excellent	3	4	4
Very Good	16	12	14
Good	51	52	58
Fair	28	26	22
Poor	1	1	2
Unimportant	1	5	0

### Employment and Income

Off-farm employment is important to a large number of OL and FO borrowers (table 11). For FO borrowers over half of net family income came from nonfarm earnings during the year immediately preceding the loan application. Nonfarm income made up nearly half of total earnings for OL borrowers. Although EM borrowers had significant nonfarm earnings, these earnings were a smaller proportion of total income because farm income was higher. When compared to national data on off-farm earnings, the importance of off-farm earnings is neither large nor surprising. In 1978, 55 percent of total family net cash income for all U.S. farmers came from off-farm sources (1978 Census of Agriculture).

Table 11. INCOME OF NEW FmHA BORROWERS  
BY LOAN PROGRAM, 1977

Type of Income	Loan Program		
	Ownership	Operating	Emergency
Cash Farm	\$ 3,000	\$ 6,000	\$ 9,000
Nonfarm	5,000	4,000	3,000
Total	\$ 8,000	\$ 10,000	\$ 12,000

Nearly half of the operators and one-third of the spouses on ownership farms worked off-farm (table 12). Somewhat fewer OL operators and only 30 percent of the EM loan borrowers worked off-farm. Operator earnings were much higher than spouse earnings, likely resulting from higher paying jobs and possibly a lower frequency of part-time rather than full-time employment.

Table 12. EMPLOYMENT OF OPERATOR AND SPOUSE  
BY LOAN PROGRAM  
NEW FmHA BORROWERS, 1977

Characteristics	Loan Program		
	Ownership	Operating	Emergency
	-----Percent of Farms-----		
Operator works off-farm	48	41	30
Spouse works off-farm	32	34	29
Only spouse works off-farm	13	13	14
	----Average Annual Off-farm Earnings----		
Operator	8,200	7,400	7,800
Spouse	3,700	4,500	4,900
	--Years Worked for Current Employer--		
Operator	6	7	8
Spouse	4	4	7

Farm operators had held their current jobs for six to eight years. Spouses had held theirs for somewhat less time, particularly spouses of OL and FO borrowers.

#### Farm Records Maintained

An important factor which effects both the farm management decision making of the farmer and the ability of the lender to make sound loan decisions is the

character of the business records maintained by the borrower. However, one-half to two-thirds of all FmHA borrowers had records that were rated as fair or poor (table 13). Record quality was particularly poor among OL borrowers. Certainly the availability of poor records on the part of approximately one-fifth of all borrowers contributes to some lending errors on the part of county personnel.

Table 13. QUALITY OF RECORDS MAINTAINED BY  
NEW FmHA BORROWERS, 1977

Quality of Records	Loan Program		
	Ownership	Operating	Emergency
-----Percent of Borrowers-----			
Excellent	10	8	11
Good	36	27	34
Fair	37	42	38
Poor	17	23	17

Most distressing is the poor quality of the records of EM borrowers. Since these borrowers are much more like the average U.S. farmer in terms of level of assets owned, and many should be more established operators, it is somewhat surprising that the quality of records maintained is so low. It may be that one of the reasons they are forced to come to FmHA in times of emergency is because their poor record keeping reduces their ability to respond appropriately to the new situations and makes them incapable of providing appropriate documentation to a commercial lender.

One method of improving farm business records, which in many instances would improve business record quality, is to employ a firm or individual to maintain records. If the firm is farm oriented and knowledgeable of farm record keeping (not just a double entry accountant), such an approach improves the data available without increasing, and possibly decreasing, the record keeping efforts of the borrower. However, only nine percent of FO, five percent of OL, and 11 percent of EM borrowers employed such a firm.

It is clear that FmHA should raise the record keeping requirements for loans. There may be basis for maintaining a higher standard among established EM borrowers than OL and FO borrowers since EM borrowers frequently have more mature businesses. However, given the importance of records in providing effective credit supervision, raising the standards for all borrowers is easily justified.

#### Credit Worthiness

From FmHA's point of view, the credit worthiness of potential borrowers has two aspects. The first relates to whether the borrowers income and net worth are low enough to justify a loan from FmHA rather than a commercial lender. For this analysis, different criteria must be used for EM borrowers than for the other two

programs because the intent of the program and application of eligibility criteria have differed. The second aspect of credit worthiness is the normal creditor's concern that the borrower will have sufficient cash to meet debt service commitments. Over the long run this includes the expected ability of the operator to maintain a progressive and, thus, viable farm business.

Over three-quarters of the borrowers in the FO and OL programs had net cash incomes, from farm and nonfarm sources, of less than \$5,000 (table 14). Only about 10 percent of these borrowers had cash incomes in excess of \$10,000. Clearly these loans are being provided to individuals with very modest incomes.

Table 14. NET CASH INCOME YEAR PRIOR TO APPLICATION  
NEW FmHA BORROWERS, 1977

Net Cash Income <sup>a/</sup>	Loan Program		
	Ownership	Operating	Emergency
-----Percent of Borrowers-----			
Less than \$5,000	75	80	71
\$5,000 - \$9,999	14	11	10
\$10,000 - \$14,999	9	5	7
\$15,000 and over	2	4	12

<sup>a/</sup> From farm and nonfarm sources.

The cash income levels of EM borrowers is higher than that achieved for OL and FO borrowers. However, these data do not represent the general income level of such borrowers because farmers must have a significantly below normal income (unless there was physical damage to farm assets) in order to qualify for emergency loans. Since data on normal income levels are unavailable, the degree of income reduction experienced is unknown. It is clear, however, that incomes were generally quite low.

Over half of the OL borrowers and 40 percent of the FO borrowers had less than \$25,000 of equity at the time they applied for a loan (table 15). Given the maximum leverage ratios normally allowed by commercial lenders, this level of equity would allow control of very modest agricultural resources for most any kind of agricultural enterprise. At 50 percent equity, borrowers in the group would be able to control less than 20 percent of the \$239,000 of assets (excluding households) on an average U.S. farm.

Nearly one-third of all EM borrowers had equity in excess of \$100,000, indicating the basically different character of these borrowers, and providing support for the expectation that the cash incomes reported by this group were below normal for those businesses. The relatively high proportion of EM borrowers with low equity, particularly those below \$25,000, likely reflect the tendency of farmers with OL or FO loans to also obtain EM loans resulting in a high representation of low equity borrowers.

Table 15. TOTAL EQUITY AT TIME OF LOAN APPLICATION  
NEW FmHA BORROWERS, 1977

Equity	Loan Program		
	Ownership	Operating	Emergency
	-----Percent of Borrowers-----		
Less than \$25,000	40	53	31
\$25,000 to \$49,999	23	20	14
\$50,000 to \$74,999	15	11	14
\$75,000 to 99,999	5	5	10
\$100,000 and over	17	11	31

Given the low cash incomes experienced by most borrowers of all three programs, the proportion of borrowers with both high incomes and high equity is low. Borrowers with cash incomes over \$10,000 and with over \$100,000 of equity represented only one, two, and nine percent of all FO, OL and EM borrowers, respectively. It is clear from this analysis that most FmHA OL and FO loans are going to low income/low equity borrowers.

In analyzing the cash flow character of a proposed loan, a lender must compare the estimated cash income expected to be available for debt payments in future years with the debt payments that would result if the loan is made. The most difficult part of this analysis is estimating future cash flows. The Farm and Home Plan requires recording of both the planned (estimated) cash flows and actual cash flows. In comparing planned flows to actual flows it is clear that the planned net cash incomes have significant upward bias (table 16). Actual cash income was less than half of the estimated value. While nonfarm income is reasonably closely estimated, farm income is grossly overestimated.

Given the rapid technological change which is occurring in agriculture, a farm operator must make changes in the business which will improve productivity over time. If FmHA were to fund only those who could be expected to graduate to other sources of credit, those receiving loans should at least be interested in improving productivity. However, 25 to 30 percent of the borrowers in these loan programs were not particularly motivated to improve productivity (table 17). This likely occurs because apparent management ability is not part of the eligibility criteria and county supervisors are required to treat all apparently similar applicants alike.

### CONTINUING BORROWER CHARACTERISTICS AND PROGRESS

Many of the services provided to FmHA borrowers are supplied after the borrower receives his or her first loan. FmHA makes additional loans of many types, provides credit supervision which often contains some management advice, allows payment deferments and encourages forward planning. Thus, to determine who FmHA is really serving, it is necessary to assess the characteristics of the borrowers who comprise the FmHA farm loan portfolio. These characteristics are, of course,

importantly influenced by the new borrowers who are added each year, but are determined to a great extent by the activities of FmHA and the borrower after the initial loan is granted.

Table 16. PLANNED VERSUS ACTUAL CASH FLOW  
NEW FmHA BORROWERS, 1977

Cash Flow Item	Ownership		Loan Program		Emergency	
	Planned	Actual	Operating		Planned	Actual
			Planned	Actual		
Income	\$45,433	\$34,579	\$38,036	\$31,731	\$68,384	\$61,232
Expense	30,089	30,781	25,817	28,518	46,526	52,719
Net Farm	15,344	3,798	12,219	3,215	21,858	8,513
Nonfarm	6,180	6,088	5,935	5,489	4,977	4,739
Total	21,524	9,886	18,154	8,704	26,835	13,162
Family Living	5,295	5,248	5,449	5,790	6,284	6,252
Available <sup>a/</sup>	16,229	4,638	12,705	2,914	20,551	6,910

<sup>a/</sup> Available for principal repayment.

Table 17. INTEREST IN IMPROVING FARM PRODUCTIVITY  
NEW FmHA BORROWERS, 1977

Interest Level	Loan Program		
	Ownership	Operating	Emergency
	-----Percent of Borrowers-----		
Very Interested	37	31	36
Interested	38	41	34
Made Obvious Changes	19	18	20
Little Interest in Change	5	9	9
Resists Improvement	1	1	1

To assess the characteristics of continuing borrower's, data were summarized for all borrowers in the sample who had an outstanding loan on January 1, 1978. This includes all active and collection only borrowers as defined in the data description section presented earlier in this publication. This sample included approximately 1,750 FO borrowers, 1,500 OL borrowers and 1,100 EM borrowers.



Age

As expected the age distribution of continuing FmHA borrowers is more like that of the entire farm population (table 18) than the age distribution of new FmHA borrowers. However, the focus on younger borrowers is exhibited in the continuing borrower distribution; more borrowers are under 35 years of age and fewer are over 55 years. The age characteristics of the FO and EM program borrowers were quite similar. The OL program clearly serves younger borrowers than either of the other two programs.

Table 18. AGE DISTRIBUTION OF CONTINUING FmHA BORROWERS BY LOAN PROGRAM, 1978

Operator Age	Loan Program			All U.S. Farmers
	Ownership	Operating	Emergency	
-----Percent of Borrowers-----				Percent
Less than 25	2	7	3	3
25 to 34	22	31	21	13
35 to 44	28	27	31	44
45 to 54	25	18	25	24
55 to 64	17	12	16	16
65 and over	6	5	4	16

The older age of continuing borrowers could be the result of a change in program focus as well as normal aging of existing borrowers. However, no change in age focus is observed when the age of new borrowers (tables 2 and 3) are compared to the age of continuing borrowers at the time of their first FmHA loan (table 19). The age distribution at the time of the first FmHA loan are almost identical for new and continuing OL and FO borrowers. Continuing EM borrowers were slightly younger when they received their first loan than are their current new borrower counterparts.

Education and Experience

The education level of continuing FmHA borrowers is similar to the education of new borrowers (table 20). There does not appear to be an education level that results in stagnation of borrowers in FmHA as their lending sources. Borrowers appear to move through FmHA lending programs at about the same rate regardless of education level. This, of course, does not imply that the success rate is unrelated to education level but that the rate of severance from FmHA lending is unrelated to education level.

Nearly half of FmHA's portfolio of farm borrowers has had no formal agricultural training (table 21). However, close to half took vocational agriculture in high school. About 90 percent had no college level training in agriculture. The

agricultural education of EM borrowers was quite similar to that of OL and FO borrowers.

Table 19. AGE AT TIME OF APPLICATION FOR FmHA LOANS  
CONTINUING BORROWERS, 1978

Age	Loan Program		
	Ownership	Operating	Emergency
-----Percent of Borrowers-----			
Under 25	14	22	12
25 to 34	38	36	32
35 to 44	24	22	26
45 to 54	14	13	20
55 to 64	5	6	9
65 and over	1	1	1

Table 20. YEARS OF EDUCATION OF  
CONTINUING FmHA BORROWERS, 1978

Level of Education	Loan Program		
	Ownership	Operating	Emergency
-----Percent of Borrowers-----			
8th grade or less	18	19	15
9 to 11 years	13	14	13
12 years	46	43	48
1 to 3 years college	15	15	14
4 years college	7	7	9
Advanced degree	1	2	1

As expected EM borrowers had more years of farm operating experience prior to obtaining this loan than did OL or FO borrowers (table 22). Those who were employed on farms other than a home farm generally had somewhat more years of experience than those employed on a home farm. Those with farm experience generally had four or more years of experience at the time their first FmHA loan was obtained.

Ninety-nine percent of all FmHA borrowers had farm experience of some type (table 23). About 80 percent grew up on a farm. The rest gained their experience in a variety of ways. About half of the FO and OL borrowers had operated their own farm

prior to their first FmHA loan, indicating that these loan programs are frequently used for individuals who have managed to get started in farming prior to coming to FmHA for assistance. The relatively high proportion of EM borrowers who had not operated their own farm prior to receiving their first FmHA loan indicates that a significant proportion of those receiving EM loans were already FmHA borrowers with other loan programs. While this could imply that emergencies strike FmHA borrowers more frequently than those who obtain their funds elsewhere, a more likely explanation is that; (1) those with loans from other sources were able to get funds to overcome the disaster from those other sources, or (2) those who already have FmHA loans find it easier to tap EM funds. It may be easier in that any self esteem problem associated with going to FmHA for funds would have already been overcome and the borrowers are familiar with FmHA personnel and procedures.

Table 21. AGRICULTURAL EDUCATION OF CONTINUING FmHA BORROWERS, 1978

Agricultural Education	Loan Program		
	Ownership	Operating	Emergency
	-----Percent of Borrowers <sup>a/</sup> -----		
Vocational Ag (High School)	44	46	44
Young Farmer Program	9	9	10
Technical Ag (1 to 3 years)	6	6	7
Four year Ag College	5	5	7
M.S. or Ph.D. in Agriculture	b/	b/	b/
None	45	43	42

<sup>a/</sup> Percent may exceed 100 due to multiple experience level of some borrowers.

<sup>b/</sup> Less than .5 percent.

Most FmHA borrowers received their experience on small or medium size farms (table 24). A significantly higher proportion of FO and OL than EM borrowers obtained their farm experience on small or part-time farms. Operating Loan borrowers were most likely to be from small or part-time farms while EM borrowers were most likely to have worked on large farms.

### Resources Used

Operating Loan borrowers have control of fewer owned resources than either FO or EM borrowers (table 25). Over half owned less than \$100,000 worth of assets. Somewhat surprisingly, the distribution of FO borrowers by assets was quite similar to the distribution for EM borrowers. This apparently occurs because the FO loan increases the level of owned assets and borrowers tend to continue with FO loans after they have paid off their OL loans with funds obtained from other sources.

Table 22. AMOUNT OF AGRICULTURAL EXPERIENCE OF CONTINUING BORROWERS PRIOR TO FIRST FmHA LOAN, 1978

Experience	Loan Program		
	Ownership	Operating	Emergency
-----Yearsa/-----			
<u>Farm Employment after Schooling</u>			
Home Farm	4.5	4.1	4.2
Other than Home Farm	6.1	6.0	6.0
<u>Operated Farm</u>			
With Relatives	8.1	7.9	9.1
With Nonfamily	7.0	7.3	9.5
Hired Farm Manager	5.4	6.3	6.3
Operated Own Farm	12.5	11.0	14.6

a/ Average for those with that type of experience

Although lenders and other analysts frequently find that excessive machinery is a cause of farm failure or poor repayment performance, the proportion of FmHA borrowers with an excessive amount of machinery is very small (table 26). In fact, the opposite appears to be true; a quite high proportion of borrowers in all three programs had only a fair or poor amount of machinery.

The quality of building and machinery resources controlled by continuing FmHA borrowers was only slightly better (table 27) than the buildings and machinery on the farms of new borrowers (table 10). Although an upgrading of quality of these resources would normally be expected to occur over time, little improvement is evident. Machinery quality was generally average or good while building quality tended to be good or fair.

Soil quality of new and continuing borrowers was similar (tables 27 and 10). The soil resources that FmHA borrowers were using were generally rated as good or fair.

#### Farm Type

The predominant farm types served by FmHA are beef cow, cash grain and dairy. More EM borrowers operated cash grain and cotton farms and fewer beef cow and poultry farms than their OL and FO counterparts.

#### Records Maintained

The quality of records maintained by FmHA borrowers appears to improve little as a result of their FmHA affiliation. The quality of records maintained by continuing FmHA borrowers (table 29), is almost identical to the quality maintained by new

borrowers (table 13). Over half of the borrowers had fair or poor records. Poor records were most frequently found on OL farms. More EM borrowers used commercial record keeping services than did OL or FO borrowers.

Table 23. TYPE OF AGRICULTURAL EXPERIENCE OF CONTINUING FmHA BORROWERS, 1978

Type of Experience <sup>a/</sup>	Loan Program		
	Ownership	Operating	Emergency
-----Percent of Borrowers <sup>b/</sup> -----			
None	1	1	1
Grew up on Farm	82	82	79
Farm Work (school years)	37	37	37
<u>Farm Employment After Schooling</u>			
Home Farm	20	20	21
Not Home Farm	8	11	7
<u>Operated Farm<sup>c/</sup></u>			
With Relatives	22	22	22
With Nonfamily	4	5	3
Hired Manager	1	2	1
Operated Own Farm	53	46	61

a/ Experiences obtained prior to first FmHA loan.

b/ Totals may exceed 100 percent due to multiple types of experiences by some borrowers.

c/ Participated in management.

Table 24. SIZE OF FARM ON WHICH CONTINUING BORROWERS OBTAINED EXPERIENCE, 1978

Size of Farm	Loan Program		
	Ownership	Operating	Emergency
-----Percent of Borrowers-----			
Part-time	11	13	7
Small	39	41	33
Medium	45	41	49
Large	5	5	11

Table 25. TOTAL ASSETS OF CONTINUING  
FmHA BORROWERS, 1978

Total Assets	Loan Program		
	Ownership	Operating	Emergency
	-----Percent of Borrowers-----		
\$100,000 or less	30	52	27
100,001 to 200,000	33	27	27
200,001 to 300,000	20	13	18
300,001 to 400,000	8	4	11
400,001 to 500,000	5	2	6
Over \$500,000	4	2	11

Table 26. MACHINERY QUANTITY ON FARMS OF  
CONTINUING FmHA BORROWERS, 1978

Quantity	Loan Program		
	Ownership	Operating	Emergency
	-----Percent of Borrowers-----		
Excessive	1	1	1
Good	5	6	8
Average	66	63	69
Fair	24	25	19
Poor	4	5	3

The generally low quality of records maintained by both new and continuing borrowers indicates that FmHA needs to take a stronger stand on the need for good records and should put more effort into providing record keeping assistance. Although many county supervisors rightly claim they cannot be an expert in all phases of modern farm or ranch management, they should be capable of providing assistance in record keeping. Records analysis is an important part of loan making, thus, requiring a high level of record keeping expertise among all loan officers. However, record keeping is a time consuming activity. If loan officers are to put effort in this area, staffing levels would need to be commensurate with accomplishment expectations.

### Productivity

An important factor influencing the profitability and progress of farm businesses in today's technologically based agriculture is the effort made by the manager to keep intellectually current and improve productivity. Surprisingly, one-third of all FmHA

borrowers were not particularly interested in improving productivity (table 30). The level of interest in improving productivity was uniform among all three program areas.

Table 27. RESOURCE QUALITY ON FARMS OF CONTINUING FmHA BORROWERS, 1978

Resource and Quality	Loan Program		
	Ownership	Operating	Emergency
-----Percent of Borrowers-----			
<u>Soil</u>			
Excellent	2	2	2
Very Good	15	14	17
Good	54	53	56
Fair	26	26	23
Poor	1	3	2
Unimportant	2	2	0
<u>Buildings</u>			
Excellent	6	5	6
Very Good	16	12	16
Good	46	42	45
Fair	27	33	27
Poor	5	8	6
<u>Machinery</u>			
Excellent	4	4	6
Good	36	35	41
Average	41	39	37
Fair	16	17	14
Poor	3	5	2

### Success

One potential problem with a government sponsored lending program which serves as a lender of last resort is that the program may tend to serve less successful farmers and that such farmers will require continued assistance resulting in a large number of borrowers who are never able to graduate to other sources of credit. Since one method of removing delinquency from a portfolio is to lend more money, part of which is used to make current debt payments, a low delinquency portfolio using such a practice would end up with a large proportion of long term borrowers who had made little progress. If that occurred one would expect to find large numbers of marginal borrowers in the portfolio who had been borrowers for a long period of time. Based on the county supervisor evaluation of the degree of success made by continuing borrowers the number of struggling and marginal borrowers is quite high (table 31). However, it is not excessive relative to what might be expected. The lowest success

rate occurred among OL borrowers. About two-thirds of the FO and EM and half of the OL borrowers were considered to be successful or progressing.

Table 28. CONTINUING FmHA BORROWERS BY FARM TYPE, 1978

Farm Type	Farm Program		
	Ownership	Operating	Emergency
-----Percent of Farms-----			
Dairy	19	22	19
Poultry	5	3	a
Hog	8	6	9
Fruit	1	1	1
Vegetable	1	2	1
Beef Feeding	3	2	4
Beef Cow	22	20	14
Sheep	a/	a/	1
Wheat	4	2	2
Cash Grain	19	17	25
Tobacco	4	8	4
Cotton	3	4	9
Other	11	13	11

a/ Less than one percent

Table 29. QUALITY OF FARM RECORDS MAINTAINED BY CONTINUING FmHA BORROWERS, 1978

Quality of Records	Loan Program		
	Ownership	Operating	Emergency
-----Percent of Borrowers-----			
Excellent	8	7	8
Good	35	29	37
Fair	41	41	40
Poor	16	23	15
Using Commercial Records	8%	6%	14%

When borrowers are sorted by the duration for which they have received FmHA assistance there is a modest decline in the proportion of successful and progressing borrowers during the first 15 years (table 32). This is particularly obvious when the



marginal and progressing borrowers are compared. The reason for the sharply better rating for borrowers with over 15 years of FmHA assistance is unclear. It may reflect borrower selection at the time the loan was made since a more socially active position was taken by FmHA programs in the early 1960s.

Table 30. CONTINUING BORROWER INTEREST IN IMPROVING PRODUCTIVITY, 1978

Level of Interest	Loan Program		
	Ownership	Operating	Emergency
	-----Percent of Borrowers-----		
Very Interested	30	29	36
Interested	34	33	33
Makes Obvious Changes Only	23	22	20
Little Interest in Improvement	11	13	10
Resists Improvement	2	3	1

Table 31. SUCCESS OF CONTINUING BORROWER'S FARM BUSINESS, 1978

Level of Success	Loan Program		
	Ownership	Operating	Emergency
	-----Percent of Borrowers-----		
Successful	31	20	25
Progressing	36	33	36
Struggling	19	24	23
Marginal	10	14	11
Unlikely to Succeed	4	9	5

One factor which influences the composition of the continuing borrower portfolio is graduation. If FmHA is efficiently doing its job of helping people get on, or back on, their feet and then graduating them to other lenders, there should be few long term FmHA borrowers. Because FO loans are generally made to purchase real estate and because the gradual process of graduation usually involves first shifting short- and intermediate-term loans to other sources, it is not surprising that FO borrowers have received FmHA assistance for longer periods than OL or EM borrowers (table 33). Borrowers appear to be moving through the system in a somewhat normal fashion. There is no evidence that large numbers of borrowers are staying with FmHA for excessively long periods of time.

Table 32. PERIOD FARMER HAS RECEIVED FmHA LOANS AND SUCCESS RATING, 1978

Years as an FmHA Borrower	Current Level of Success				
	Successful	Progressing	Success Probable	Marginal	Unlikely to Succeed
-----Percent of Borrowers-----					
<u>Ownership Loans</u>					
Less than 5	30	40	20	7	3
6 to 10	30	38	18	10	4
11 to 15	26	32	22	15	5
16 and over	41	26	20	10	3
<u>Operating Loans</u>					
Less than 5	19	35	25	13	8
6 to 10	24	32	19	14	11
11 to 15	16	30	27	18	9
16 and over	31	28	23	12	6
<u>Emergency Loans</u>					
Less than 5	26	38	21	10	5
6 to 10	20	36	24	12	8
11 to 16	20	32	26	12	10
16 and over	31	24	27	15	3

Table 33. NUMBER OF YEARS FmHA ASSISTANCE HAS BEEN RECEIVED CONTINUING FmHA BORROWERS, 1978

Years Since First Loan <sup>a/</sup>	Loan Program		
	Ownership	Operating	Emergency
-----Percent of Borrowers-----			
5 or less	34	57	68
6 to 10	30	24	16
11 to 15	22	13	11
16 to 20	8	5	4
21 to 25	4	1	1
over 25	2	b/	b/

<sup>a/</sup> First loan may not be of same type as is currently outstanding. For example, the first loan may have been an Operating Loan but the borrower may now have an Ownership Loan.

<sup>b/</sup> Less than 0.5 percent.

One would expect that borrowers who had been with the FmHA for 15 years should be able to graduate if they are going to. This relatively small group of borrowers may represent either; (1) laxness on the part of FmHA in forcing graduation, or (2) use of these programs for social purposes. Social use of FmHA programs has received varying degrees of support over time based on the expectation or assumption that it was cheaper for the government to continue to provide credit and keep some marginal farmers on the farm rather than call their loan and force them on welfare or other more expensive forms of government support. The relatively small proportion of borrowers with loans for over 15 years may reflect little use of the concept within FmHA. Although FmHA's predecessor agencies took a socially active role in the 1930s, the more social activist role for FmHA did not occur until the early 1960s. Most borrowers who received loans when FmHA had a more socially oriented view of its mission would have had loans for 15 years or less.

### Income and Net Worth

Income and net worth characteristics of borrowers can be used to indicate the degree to which FmHA is fulfilling its mission of serving only those who cannot obtain credit elsewhere. Although income and net worth are only two of the many characteristics that determine a borrower's credit worthiness, they are two very important characteristics, particularly when differentiating FmHA borrowers from those who can obtain credit elsewhere.

A high proportion of FmHA borrowers, particularly OL borrowers had a net worth of less than \$100,000 (table 34). Over 60 percent of the continuing OL borrowers had a net worth of under \$50,000. As expected, EM borrowers had higher net worth than OL and FO borrowers. The relatively low proportion of EM borrowers with net worth in excess of \$300,000 provides some evidence that the wealthy borrowers with FmHA loans, spotlighted by the media, represent exceptions rather than the rule in FmHA lending.

Table 34. NET WORTH OF CONTINUING FmHA BORROWERS, 1978

Net Worth	Loan Program		
	Ownership	Operating	Emergency
	-----Percent of Borrowers-----		
Under \$25,000	17	39	20
\$25,000 to \$49,999	18	22	16
\$50,000 to \$74,999	17	14	13
\$75,000 to \$99,999	9	8	8
\$100,000 to \$199,999	26	13	24
\$200,000 to \$300,000	8	3	8
Over \$300,000	5	1	11

Low net cash incomes do predominate among FmHA borrowers (table 35). Half of the OL and EM program borrowers and somewhat fewer FO borrowers had net incomes of under \$10,000. Few borrowers, particularly OL and FO borrowers, had cash incomes of over \$40,000.

Table 35. CASH INCOME LEVELS OF CONTINUING FmHA BORROWERS

Net Cash Income <sup>a/</sup>	Loan Program		
	Ownership	Operating	Emergency
	-----Percent of Borrowers-----		
Negative	9	10	18
\$0 to \$4,999	11	15	16
\$5,000 to \$9,999	23	25	15
\$10,000 to \$14,999	21	19	17
\$15,000 to \$19,999	13	11	8
\$20,000 to \$29,999	14	13	14
\$30,000 to \$39,999	5	4	4
\$40,000 and over	4	3	8

<sup>a/</sup> Farm and nonfarm income received during 1977.

Another way to assess the cash income of existing borrowers is to calculate the amount available for family living and current debt service (payment of outstanding bills). Cash incomes on about one-third of the continuing FmHA farms was insufficient to meet intermediate- and long-term debt if all cash was used for that purpose (table 36). An additional one-third of the borrowers had less than \$10,000 left for family living and current debt payments. Since all families will require some cash for family living, this implies that at least one-third of all borrowers required loan reamortization, additional loans or were delinquent for that year.

Since many families will not be able to live on the less than \$10,000 available for family living and current debt service, it appears that at least one-half and approaching two-thirds of the continuing borrowers experienced cash flow problems. These borrowers are obviously not good candidates for graduation to other lenders. Many likely need some type of credit supervision or management assistance to help them improve their situation.

The large number of borrowers with cash flow problems also provides an indication of the servicing burden placed on FmHA county personnel. A borrower with cash flow problems requires much more time and effort to service appropriately than does a borrower without such problems. With a large proportion of problem borrowers the size of loan portfolio that an individual FmHA supervisor can correctly handle is smaller than the average portfolio handled by other lenders. However, in many, if not most, areas the size of loan portfolio handled by FmHA personnel is larger than that handled by other lenders.

Table 36. LEVEL OF CASH INCOME AFTER MEETING LOAN  
AND INTERMEDIATE TERM DEBT PAYMENTS  
CONTINUING FmHA BORROWERS

Cash Income minus Int. and Long Term Debt Payments <sup>a/</sup>	Loan Program		
	Ownership	Operating	Emergency
	-----Percent of Borrowers-----		
Less than \$0	27	31	40
\$0 to \$9,999	32	35	26
\$10,000 to \$19,999	26	21	16
\$20,000 and over	15	13	18

<sup>a/</sup> Equals amount available for family living and current debt payment (mostly outstanding bills and accounts) during 1977.

Borrowers with high net income likely represent good credit risks irrespective of the level of equity. Low equity borrowers who, after receiving FmHA assistance, achieve high net incomes are the kind of borrowers who are most likely to graduate and, thus, represent FmHA successes. Somewhat surprisingly there were relatively few such borrowers in any of the three lending programs studied (table 37). Although inventory increases are not included in the reported net income, it appears that most low equity borrowers either had limited management skills or, more likely, had limited resources even after receiving FmHA assistance.

One concern frequently expressed about FmHA is that many borrowers do not graduate when they should, but continue to take advantage of the lower cost source of funds much longer than necessary. Not forcing such people to graduate improves the FmHA delinquency rate, but does not allow financing of as many borrowers as would be possible if funds were rolled over for new borrowers. If borrowers with over \$20,000 of income and \$100,000 of equity are identified as borrowers who should be able to graduate, the EM program has the greatest "graduation problem" with 17 percent of its borrowers in that category. However, the FO program follows very closely with 14 percent of its borrowers exceeding those limits. While not a problem of extremely serious proportions, some increased attention to graduation does appear warranted for FO and EM borrowers.

Given the characteristics of the EM program, existence of a number of borrowers with high net worth but low income is not surprising. Similarly, the predominance of modest income and low equity among OL and FO borrowers is consistent with the mandate given those programs.

### Progress

As indicated earlier, one concern about FmHA programs is that the focus on low income and low equity borrowers may result in an accumulation of borrowers with FmHA loans who are making no progress but continue to use FmHA resources.

Although this problem was deemed to be modest based on the county supervisor's evaluation of degree of success attained by the borrowers, the question can be directly addressed by measuring the relationship between various measures of progress and duration of FmHA assistance.

Table 37. DISTRIBUTION OF CONTINUING FmHA  
BORROWERS BY EQUITY AND INCOME

Program and Net Cash Income <sup>a/</sup>	Equity					
	under 25,000	25,000- 49,999	50,000- 74,999	75,000- 99,999	100,000- 199,999	200,000- and over
-----Percent of Borrowers-----						
<u>Ownership Loan Program</u>						
Negative	1.3	0.9	1.4	1.0	3.2	1.5
\$0 to \$9,999	8.2	7.7	5.4	3.6	7.6	1.5
\$10,000 to \$19,999	5.1	7.2	7.0	3.6	7.7	3.4
\$20,000 to \$29,999	1.1	1.1	2.6	1.5	4.7	2.3
\$30,000 and over	0.2	0.8	1.2	0.7	3.2	3.6
<u>Operating Loan Program</u>						
Negative	4.7	1.4	1.4	0.8	1.9	0.4
\$0 to \$9,999	17.3	8.9	3.6	2.7	3.5	0.8
\$10,000 to \$19,999	11.8	6.8	6.0	3.2	3.7	1.1
\$20,000 to \$29,999	2.3	2.4	2.6	1.5	2.6	1.6
\$30,000 and over	0.7	1.7	0.8	0.7	1.9	1.3
<u>Emergency Loan Program</u>						
Negative	3.8	2.6	2.3	1.7	4.9	2.9
\$0 to \$9,999	7.0	5.3	4.3	3.2	7.3	3.8
\$10,000 to \$19,999	3.7	5.5	3.5	2.1	6.1	4.1
\$20,000 to \$29,999	1.4	1.7	1.5	0.5	4.6	3.5
30,000 and over	0.6	1.1	1.1	1.4	2.6	6.2

<sup>a/</sup> Received during 1977.

Three measures that can be used to assess progress are income, assets and net worth. For this analysis, little progress, or lack of progress, is defined as an increase or improvement of less than 10 percent in real (inflation adjusted) terms. A large number of borrowers had made little improvement in their level of cash income since receiving their first loan from FmHA (table 38). As mentioned earlier, one problem with this measure of income is that inventory increases are not included. Many businesses, particularly those with livestock enterprises, will achieve much of their increase in income in the form of increased inventory. Another factor influencing these results is that only one year of data is used to assess current cash income. For some proportion of farm businesses this year would be an unusually low income year.

Table 38. PROPORTION OF CONTINUING BORROWERS WHO HAVE MADE LITTLE IMPROVEMENT IN CASH INCOME<sup>a/</sup> BY DURATION OF FmHA ASSISTANCE  
FmHA SURVEY, 1978

Years with FmHA Loans	Loan Program		
	Ownership	Operating	Emergency
	-----Percent of Borrowers <sup>b/</sup> -----		
5 or less	74	68	67
6 to 10	60	63	73
11 to 15	59	55	69
16 and over	40	42	47

<sup>a/</sup> Real cash income has increased less than 10 percent.

<sup>b/</sup> Percent of borrowers receiving assistance for the period indicated who have made little improvement in level of cash income.

However, in spite of the above listed caveat the proportion of borrowers who have not managed to improve their cash income is high. This is particularly true for EM borrowers. Although some EM borrowers received an OL or FO loan many years prior to receiving their EM loan, the high proportion of EM borrowers who have had FmHA assistance for over five years but have been unable to improve their cash income over that period is surprisingly high.

Change in equity reflects the performance of the business over the entire period considered and, thus, is a more reliable measure of progress. As expected, those borrowers with FmHA loans for the shortest period of time and, thus, less time to make progress, had the highest proportion of borrowers who had made little progress (table 39). About one-quarter of OL and EM borrowers who had received FmHA assistance for six to 10 years had made little improvement in their real equity position. Ten to 15 percent of borrowers with 11 to 15 years of assistance had made little real equity improvement.

Of the borrowers with five or less years of FmHA assistance, fewer had achieved little increase in assets (table 40) than had not increased net worth (table 39) indicating that some with constant or increasing assets had experienced increasing or more rapidly increasing, respectively, debt levels. In spite of the increases in farm size experienced by most farm businesses over the last two decades, 10 to 20 percent of FmHA borrowers with over 10 years of assistance had not increased the size of their business over that period.

Although some borrowers who have received assistance from FmHA for a number of years have made no progress by any of the three measures, income, assets or net worth (table 41), such borrowers represent a small proportion of all borrowers. Less than eight percent of the borrowers who had received assistance for over 10 years had made essentially no progress by all three measures.

Table 39. PROPORTION OF CONTINUING BORROWERS WHO  
HAVE MADE LITTLE INCREASE IN EQUITY<sup>a/</sup>  
BY DURATION OF FmHA ASSISTANCE  
FmHA SURVEY, 1978

Years with FmHA Loans	Loan Program		
	Ownership	Operating	Emergency
	-----Percent of Borrowers <sup>b/</sup> -----		
5 or less	46	49	46
6 to 10	15	26	29
11 to 15	11	16	13
16 and over	7	14	11

<sup>a/</sup> Real net worth has increased less than 10 percent.

<sup>b/</sup> Percent of borrowers receiving assistance for the period indicated who have made little equity progress (i.e., 15 percent of FO borrowers who have received FmHA assistance for 6 to 10 years have made little equity progress).

Table 40. PROPORTION OF CONTINUING BORROWERS WHO  
HAVE ACHIEVED LITTLE INCREASE IN ASSETS<sup>a/</sup>  
BY DURATION OF FmHA ASSISTANCE  
FmHA SURVEY, 1978

Years with FmHA Loans	Loan Program		
	Ownership	Operating	Emergency
	-----Percent of Borrowers <sup>b/</sup> -----		
5 or less	36	41	44
6 to 10	18	27	22
11 to 15	20	21	14
16 and over	12	19	10

<sup>a/</sup> Real value of assets controlled increased less than 10 percent.

<sup>b/</sup> Percent of borrowers receiving assistance for the period who have achieved little increase in assets controlled.

It appears fair to conclude that FmHA's portfolio of continuing borrowers does not represent an accumulation of "losers". A high proportion of the borrowers have made equity progress while making use of FmHA loans. While a large number have not made significant progress in improving cash incomes, there are only a few who have had FmHA loans for any period of time who have not made real progress in either income, assets or net worth.



Table 41. PROPORTION OF CONTINUING BORROWERS WHO  
HAVE ACHIEVED LITTLE PROGRESS IN CASH INCOME,  
EQUITY OR ASSETS CONTROLLED<sup>a/</sup>  
FmHA SURVEY, 1978

Years with FmHA Loans	Loan Program		
	Ownership	Operating	Emergency
	-----Percent of Borrowers <sup>b/</sup> -----		
5 or less	22	24	26
6 to 10	6	13	9
11 to 15	7	7	4
16 and over	4	7	4

<sup>a/</sup> The real value of assets, cash income and net worth all increased by less than 10 percent during the period for which FmHA assistance has been received.

<sup>b/</sup> Percent of borrowers receiving assistance for the period who have achieved little increase in assets controlled.

### BORROWER PROGRESS, SUCCESS AND FAILURE<sup>2/</sup>

Determination of the degree of success and failure of FmHA programs requires an assessment of the frequency and degree of progress or success made by borrowers participating in the program. To assess success and failure, data on all borrowers who severed their relationship with FmHA during the year ending January 1, 1978 were used. These data included information on all borrowers who paid their loan in full or had their loans written off by FmHA<sup>3/</sup>.

In assessing the success or failure of FO and OL programs, two data sets were used. The first set, called block 1, includes all borrowers with completed supplemental questionnaires. This sample included 632 FO borrowers and 1,021 OL borrowers. The second set, called block 2, includes all borrowers with complete supplemental questionnaire, application form, current Farm and Home Plan and immediate post-loan Farm and Home Plan. This sample included 78 FO and 170 OL borrowers. Because a much more detailed and complete set of data was available for borrowers in block 2, a more comprehensive analysis could be conducted using that data.

To test the representativeness of block 2 data, a simple t-test procedure was used. The null hypothesis tested being that block 1 and block 2 were equivalent

<sup>2/</sup> This discussion is based on Christensen, Garry N. "FmHA Borrower Characteristics, Progress and Success 1946-1977." Unpublished M.S. Thesis, Cornell University 1984.

<sup>3/</sup> That these two groups include all borrowers who severed their relationship with FmHA is explained in the sample definitions appearing in the first section of this publication.

samples of this population. Because block 1 also contained block 2 borrowers, the t-test was performed on block 2 borrowers versus only those block 1 borrowers not represented in block 2. This insured relative independence of the two samples. Separate t-tests were performed for eight different borrower characteristics. In all cases the null hypothesis was accepted at the one percent level of significance. On this basis, borrowers in block 2 were considered representative of the total population<sup>4/</sup>.

### Definition of Progress and Success

Two assessment measures were used to evaluate the relative degree of success or failure of these programs and the factors that contribute to success on the part of individual borrowers. Increase in real net worth achieved while receiving FmHA assistance was used as a measure of the degree of financial progress made by borrowers. This was measured by the change in net worth in 1977 dollars, between a borrower's first FmHA loan and the time they severed their relationship with FmHA (1977). Success, on the other hand, was a more comprehensive but also somewhat more subjective measure of performance. Successful borrowers were identified by their county supervisor as those who did, or could have, graduated to other commercial sources of credit at the time they severed their relationship with FmHA.

### Factors Influencing Borrower Progress

Borrower progress was measured by calculating the borrower's average annual change in net worth during the period of his or her loan, in 1977 dollars. Basically, this measure represents the income surpluses generated by the borrower during the period. They may have been generated in the form of cash or inventory but are now held as cash, reinvested in the farm, or used to purchase other assets. This measure of progress also represents the cumulative effect of operating the business over time in the sense that any improvement in net worth will further expand borrowing capacity, and, thus, access to additional income earning resources.

The proportion of borrowers exhibiting financial progress in real terms was 74 percent for the OL program and 82 percent for the FO program (table 42). Given the operating objectives of these programs this is a very satisfactory success rate. It is also evident that FO borrowers made more rapid financial progress, \$7,670 per year, than their counterparts in the OL program, \$3,001 per year. A significant number of farms in both loan programs experienced quite rapid progress.

Many factors influence the rate of borrower progress. An analysis of the individual factors influencing borrower progress is presented below.

### Region

General background factors such as region, farm type and land tenure were included in the analysis because they have often been used as criteria for the focus of funds lent through the two loan programs.

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<sup>4/</sup> Block 2 data were used in the analysis of individual factors influencing borrower progress presented in this and following sections.

Table 42. AVERAGE ANNUAL CHANGE IN NET WORTH  
WHILE AN FmHA BORROWER  
BORROWERS EXITING FmHA PROGRAMS, 1977

Change in Net Worth (1977 Dollars)	Loan Program	
	Ownership	Operating
	-----Percent of Borrowers-----	
Negative	18	26
\$0 to \$4,999	28	37
\$5,000 to \$9,999	25	16
\$10,000 to \$14,999	12	11
\$15,000 and over	17	10
Overall Average	\$7,670	\$3,001

In themselves these factors are too broad to do any more than sign-post the influence on borrower progress of more specific underlying factors. Nevertheless, the results are reported separately as a prelude to the analysis of more specific factors, and to provide some continuity between this study and previous studies of FmHA borrowers.

The regional distribution of borrowers differed between loan programs. In the OL program 32 percent of borrowers were located in the north, 59 percent in the south and nine percent in the west<sup>5/</sup>. By comparison, 46 percent of the FO borrowers were located in the north, 46 percent in the south, and eight percent in the west. These distributions correspond to results reported in previous studies.

Borrowers in the south made the slowest financial progress, and were the most likely to experience a loss in real net worth (table 43). This was especially true for borrowers with Farm Ownership Loans.

Northern borrowers in the FO program made the best progress in all respects. However, the performance of northern OL program borrowers was relatively weak. A closer examination of these OL borrowers showed that 60 percent of those from the Lake States experienced losses in real net worth. By comparison, only 14 percent of FO Lake State borrowers experienced losses in real net worth, and a high 46 percent exhibited an average annual increase in real net worth of \$15,000 or more.

<sup>5/</sup> Census regions: West includes Montana, Wyoming, Colorado, New Mexico, and states to the west of these; South includes Texas, Oklahoma, Arkansas, Tennessee, Kentucky, West Virginia, Maryland, Delaware and states to the south of these; North includes all remaining states.

Table 43.

PROGRESS BY REGION  
BORROWERS EXITING FmHA PROGRAMS, 1977

Average Annual Change in Net Worth (1977 Dollars)	Region		
	North	South	West
	-----Percent of Borrowers-----		
<u>Operating Loan Program</u>			
Negative	25	29	19
\$0 to \$4,999	29	42	19
\$5,000 to \$9,999	17	16	18
\$10,000 to \$14,999	12	6	26
Overall Average	\$ 4,141	\$1,790	\$7,798
<u>Ownership Loan Program</u>			
Negative	11	26	17
\$0 to \$4,999	17	34	17
\$5,000 to \$9,999	29	26	17
\$10,000 to \$14,999	14	6	33
\$15,000 and over	29	8	0
Overall Average	\$11,683	\$4,206	\$6,227

For western borrowers the sample, although commensurate with expected borrower representation in this region, was too small to allow a detailed comparison of trends. However, it appeared that borrower progress was strong in both loan programs.

#### Farm Type

Of the 13 farm types recorded, only five were included in the analysis of OL borrowers, and three in the analysis of FO borrowers. These farm types accounted for 74 percent of OL borrowers, and 64 percent of FO borrowers. The remainder were omitted because individual farm types were not represented in sufficient numbers to allow an effective interpretation of the results.

Between the two loan programs there were some slight variations in the distribution of borrowers among these farm types. In the OL program, dairy farms accounted for 16 percent of all borrowers, hog farms nine percent, cash grain farms 21 percent, tobacco farms nine percent, and beef-cow/calf operations 18 percent. The corresponding distribution in the FO program was: dairy 22 percent, cash grain 20 percent, and beef-cow/calf 21 percent. No other studies have reported similar information on the farm types represented among borrowers in these two programs.

Within the OL program, borrowers with hog and cash grain farms made the best financial progress (table 44). Dairy farm borrowers made less financial progress, although their performance was acceptable. The financial progress made by tobacco

and beef-cow/calf operations was much weaker with a large proportion of these farms experiencing a loss in real net worth.

Table 44. **PROGRESS BY FARM TYPE  
BORROWERS EXITING FmHA PROGRAMS, 1977**

Average Annual Change in Net Worth (1977 Dollars)	Farm Type				
	Tobacco	Beef-Cow	Dairy	Cash-	Hog
	-----Percent of Borrowers-----				
<u>Operating Loan Program</u>					
Negative	39	44	16	19	17
\$0 to \$4,999	61	26	35	40	25
\$5,000 to \$9,999	0	13	20	11	17
\$10,000 to \$14,999	0	9	14	19	8
\$15,000 and over	0	8	5	11	33
Overall Average	\$32	\$1,113	\$4,251	\$ 4,083	\$10,028
<u>Ownership Loan Program</u>					
Negative	a/	38	12	7	a/
\$0 to \$4,999	a/	31	12	25	a/
\$5,000 to \$9,999	a/	19	41	26	a/
\$10,000 to \$14,999	a/	6	17	0	a/
\$15,000 and over	a/	6	18	40	a/
Overall Average	a/	\$2,909	\$8,620	\$14,573	a/

a/ Inadequate borrower representation.

An examination of the regional distribution of farm types using block 1 data showed that over both loan programs, 57 to 60 percent of the beef-cow/calf, and 98 to 99 percent of the tobacco farm borrowers were in the south. The predominance of these weaker performing farm types indicates that the low levels of financial progress in the south may be partly attributable to the systems of farming employed. When considering these results, it is important to bear in mind that the categorization of farm type was based on the borrower's farm enterprises at the time the loan was repaid. In some cases the farm type described may not correspond to the enterprises in use at the time the loan was taken out.

#### Post-Loan Tenure Status

Each borrower's tenure status was ascertained from his or her immediate post-loan Farm and Home Plan, based on whether land was owned or leased, or both. Thus, this represents the tenure status of the borrowers after the loan was made. There was a noticeable difference in the distribution of tenure status among borrowers in the two loan programs, indicative of differing program objectives and lending activities.

In the OL programs, tenant farmers were most prevalent (43 percent), followed by full owners (33 percent), and part owners (24 percent).

Since the FO program provides for ownership of real estate resources, full owners were most prevalent (52 percent), followed by part owners (32 percent). However, even though some real estate resources were purchased, 16 percent remained tenants. These results can not be compared with similar results from previous studies, which measured the borrower's pre-loan tenure status.

In both loan programs, borrowers owning their farms made the slowest financial progress and were the most likely to experience a decline in real net worth (table 45). Tenant farmers and part owners exhibited much stronger financial progress.

The relative advantage of tenancy versus part ownership varied with the loan program. Tenant borrowers made the strongest financial progress in the OL program, and part owners in the FO program. However, within each program, the differences between these two tenure classes were much less marked than the overall differences between ownership and either tenancy or part ownership.

These results support Hendrix's conclusion that factors other than land ownership contributed to the low income and limited financial progress of tenant borrowers in the OL program. Additionally, they suggest that full ownership may be the least desirable form of tenure for low income farmers. Part ownership may be a more desirable goal.

The trends in this analysis emphasize the importance of using scarce financial resources optimally. For instance, lower income farmers such as those in the OL program may be better advised to invest in productive inputs such as livestock or fertilizer, with a more immediate cash return, rather than purchase land. As income improves and the farmer's financial position strengthens, a part ownership system may become optimal.

It appears that the superior financial progress exhibited by tenants and part owners at least partially reflects their access to a larger complement of resources. By opting to rent inputs, such as land, effective farm size can be increased significantly compared to farmers who buy all their inputs. This increased resource base frequently results in increased income. Part owners operated the largest farms, as measured by total acres operated (owned and/or rented) in line with their greater financial progress. Within the OL program average farm sizes were 147 acres, 237 acres, and 126 acres for tenants, part owners and full owners, respectively. The corresponding farm sizes for FO borrowers were 156 acres, 283 acres, and 151 acres.

### Soil Quality

The adequacy and quality of physical resources available to the farmer determines the management systems that can be implemented, and set an upper limit to the return on labor and management that can be expected. Hendrix observed that "the quantity and quality of resources" had a major influence on financial progress.

Table 45.                    PROGRESS BY POST-LOAN TENURE STATUS  
BORROWERS EXITING FmHA PROGRAMS, 1977

Average Annual Change in Net Worth (1977 Dollars)	Tenure Status		
	Owners	Part Owners	Tenants
<u>Operating Loan Program</u>			
Percent of all Borrowers	33	24	43
	-----Percent of Borrowers-----		
Negative	30	23	16
\$0 to \$4,999	31	46	43
\$5,000 to \$9,999	25	11	11
\$10,000 to \$14,999	8	12	15
\$15,000 and over	6	8	15
Overall Average	\$1,466	\$ 2,910	\$ 4,253
<u>Ownership Loan Program</u>			
Percent of all Borrowers	52	32	16
	-----Percent of Borrowers-----		
Negative	27	10	0
\$0 to \$4,999	20	38	40
\$5,000 to \$9,999	35	5	20
\$10,000 to 14,999	6	19	20
\$15,000 and over	12	28	20
Overall Average	\$5,087	\$12,107	\$10,560

The physical resources examined are soil quality, building quality, and machinery quantity. The assessment of these resources was made by the county supervisor and pertain the year in which borrowers' loans were either repaid or written off. Although this assessment does not directly reflect resource adequacy and quality at the time the loan was received, it is likely to be strongly correlated with the borrower's initial resource complement given the durability and permanency of these resources.

The distribution of soil quality among borrowers followed a similar pattern in each loan program. However, on the average, FO borrowers had slightly better quality soils. In the OL program, 18 percent of borrowers had high quality soils, 57 percent medium quality, and 25 percent low quality. The corresponding proportions in the FO program were 23 percent, 55 percent, and 22 percent, respectively.

For those borrowers whose real net worth increased, a higher level of soil quality was associated with a strong improvement in the rate of financial progress (table 46). The proportion of borrowers experiencing a loss in real net worth followed quite a different trend, however, and was lowest for medium quality soils. This combination of trends is reflected in the relationship between soil quality and the "overall average" change in real net worth. On the average, low quality soils resulted in low levels of financial progress. Borrowers with high quality soils out-performed those with medium

quality soils in the FO program, while in the OL program, the performance on high quality soils was similar to (slightly below) that on medium quality soils.

Table 46.

PROGRESS BY SOIL QUALITY  
BORROWERS EXITING FmHA PROGRAMS, 1977

Average Annual Change in Net Worth (1977 Dollars)	Soil Quality		
	High	Medium	Low
<u>Operating Loan Program</u>			
Percent of all Borrowers	18	57	25
	-----Percent of Borrowers-----		
Negative	35	20	28
\$0 to \$4,999	17	36	52
\$5,000 to \$9,999	13	20	13
\$10,000 to \$14,999	13	15	a
\$15,000 and over	22	8	6
Overall Average	\$ 3,859	\$ 4,350	\$ 1,117
<u>Ownership Loan Program</u>			
Percent of all Borrowers	23	55	22
	-----Percent of Borrowers-----		
Negative	24	12	29
\$0 to \$4,999	18	27	35
\$5,000 to \$9,999	17	34	18
\$10,000 to \$14,999	12	15	6
\$15,000 and over	29	12	12
Overall Average	\$11,078	\$ 7,091	\$ 3,932

a/ Less than one percent.

### Building Quality

Unlike soil quality, the distribution of borrowers by building quality followed a different pattern in each loan program (table 47). In the OL program, 13 percent of borrowers had high quality buildings, 41 percent medium quality, and 46 percent low quality. For FO borrowers, the correspondence proportions were 13 percent, 54 percent, and 33 percent, respectively. Thus, OL borrowers tended to have lower quality buildings.

For OL borrowers, medium quality buildings were associated with the highest levels of financial progress in all respects. A low proportion of these borrowers experienced a loss in real net worth, and the rate of financial progress was higher for borrowers whose real net worth did increase. Among the remaining OL borrowers, the incidence of losses in real net worth was uniformly high for both high and low quality



buildings. Apparently, high quality buildings do not add as much to OL borrower incomes as they add to rent or lease costs.

Table 47. **PROGRESS BY BUILDING QUALITY  
BORROWERS EXITING FmHA PROGRAMS, 1977**

Average Annual Change in Net Worth (1977 Dollars)	Building Quality		
	High	Medium	Low
<u>Operating Loan Program</u>			
Percent of all Borrowers	13	41	46
	-----Percent of Borrowers-----		
Negative	31	14	30
\$0 to \$4,999	37	30	43
\$5,000 to \$9,999	14	24	12
\$10,000 to \$14,999	12	14	9
\$15,000 and over	6	18	5
Overall Average	\$ 2,271	\$ 7,727	\$ 737
<u>Ownership Loan Program</u>			
Percent of all Borrowers	13	54	33
	-----Percent of Borrowers-----		
Negative	20	15	24
\$0 to \$4,999	30	24	28
\$5,000 to \$9,999	10	34	20
\$10,000 to \$14,999	10	10	16
\$15,000 and over	30	17	12
Overall Average	\$15,599	\$ 7,545	\$ 5,127

Within the FO program, borrowers with medium quality buildings once again had the lowest incidence of losses in real net worth, followed by those with high and then low quality buildings, respectively. The average rate of financial progress was highest for high quality buildings, and similar for the other two building categories.

#### Machinery Quantity

Each of the two loan programs had an almost identical distribution of machinery quantity among borrowers (table 48). Borrowers with adequate (medium) machinery had the lowest incidence of loss in real net worth. Furthermore, the rate of financial progress also increased as the quantity of machinery increased.

#### Pre-Loan Value of Total Assets

The importance of "resources controlled" to the progress of farmers, has been demonstrated both theoretically and empirically. In a theoretical context, Barry (p. 9) has stated that: "the core of growth is acquiring control of additional resources that

generate returns in excess of their costs and thereby add to the value of the firm." Empirically, Hendrix established that "working capital" was associated with an increase in income and, thus, important to borrower progress. However, his definition of working capital was not the conventional one of current assets minus current liabilities. Instead he included the value of machinery, livestock, feed, seed and other supplies, and cash on hand. Using current terminology, the variable was misnamed rather than misapplied since it was used to measure the total nonreal estate resources controlled by a borrower.

Table 48. PROGRESS BY QUANTITY OF MACHINERY  
BORROWER EXITING FmHA PROGRAMS, 1977

Average Annual Change in Net Worth (1977 Dollars)	Quantity of Machinery		
	Excess	Adequate	Inadequate
<u>Operating Loan Program</u>			
Percent of all Borrowers	9	69	22
	-----Percent of Borrowers-----		
Negative	27	22	31
\$0 to \$4,999	9	40	40
\$5,000 to \$9,999	27	16	18
\$10,000 to \$14,999	9	13	7
\$15,000 and over	27	9	4
Overall Average	\$ 4,253	\$ 4,065	\$ 1,298
<u>Ownership Loan Program</u>			
Percent of all Borrowers	7	71	22
	-----Percent of Borrowers-----		
Negative	20	16	25
\$0 to \$4,999	20	29	25
\$5,000 to \$9,999	0	29	31
\$10,000 to \$14,999	0	12	6
\$15,000 and over	60	14	13
Overall Average	\$15,796	\$ 7,544	\$ 5,876

As found in previous studies, the value of pre-loan total assets was higher for FO borrowers than it was for OL borrowers (table 49). Seventy-seven percent of OL borrowers had pre-loan total assets valued at less than \$100,000 (1977 dollars), compared to 69 percent of borrowers in the FO program. The average values of pre-loan total assets were \$98,084 (1977 dollars) in the FO program and \$66,701 in the OL program.

No association was found between financial progress and the pre-loan value of total assets. In particular, high levels of pre-loan total assets (\$150,000 and over) gave the borrower no advantage compared to a farmer with very low levels of pre-loan total assets (\$50,000 and under). These results concur with those of Hendrix who

concluded that pre-loan financial characteristics bore no relationship to the borrower's subsequent financial progress.

Table 49. PROGRESS BY PRE-LOAN TOTAL ASSETS  
BORROWER EXITING FmHA PROGRAMS, 1977

Average Annual Change in Net Worth (1977 Dollars)	Pre-loan Total Asset Value <sup>a/</sup>			
	\$0 to \$49,999	\$50,000- \$99,999	\$100,000- \$149,999	\$150,000- and over
<b>Operating Loan Program</b>				
Percent of all Borrowers	66	11	7	16
	-----Percent of Borrowers-----			
Negative	28	35	11	48
\$0 to \$4,999	42	39	11	10
\$5,000 to \$9,999	12	13	56	24
\$10,000 to \$14,999	10	7	11	9
\$15,000 and over	8	6	11	9
Overall Average	\$ 2,824	\$ 1,208	\$ 8,472	\$-3,005
<b>Ownership Loan Program</b>				
Percent of all Borrowers	49	20	10	21
	-----Percent of Borrowers-----			
Negative	18	20	0	31
\$0 to \$4,999	37	40	25	0
\$5,000 to \$9,999	24	20	25	37
\$10,000 to \$14,999	8	13	37	13
\$15,000 and over	13	7	13	19
Overall Average	\$ 7,199	\$ 4,054	\$10,425	\$ 7,390

a/ 1977 Dollars.

#### Beginning Post-Loan Value of Resources Controlled

Because the land controlled by tenants could not be valued, the value of all resources excluding land was used as a measure of resources controlled. Using this measure, it is evident that FO borrowers had access to slightly more resources than OL borrowers (table 50).

Seventy-four percent of OL borrowers had access to resources valued at less than \$50,000 (1977 dollars), compared to 69 percent for FO borrowers. The average resource values were \$35,475 and \$40,613, respectively (1977 dollars).

The association between beginning resource value and borrower progress differed somewhat between loan programs. With the OL program, there was no real association between initial resource value and the incidence of borrowers experiencing a loss in real net worth. However, for those borrowers who did make financial progress, an

increase in beginning resource value was associated with an increase in the rate of financial progress.

Table 50. PROGRESS BY RESOURCES CONTROLLED<sup>a/</sup>  
BORROWER EXITING FmHA PROGRAMS, 1977

Average Annual Change in Net Worth (1977 Dollars)	Resource Value <sup>b/</sup>			
	\$0 to \$24,999	\$25,000- \$49,999	\$50,000- \$74,999	\$75,000- and over
<u>Operating Loan Program</u>				
Percent of all Borrowers	43	31	15	11
	-----Percent of Borrowers-----			
Negative	24	33	19	23
\$0 to \$4,999	54	29	19	21
\$5,000 to \$9,999	14	14	24	21
\$10,000 to \$14,999	5	12	19	21
\$15,000 and over	3	12	19	14
Overall Average	\$ 1,811	\$ 3,107	\$ 6,536	\$ 3,881
<u>Ownership Loan Program</u>				
Percent of all Borrowers	33	36	19	12
	-----Percent of Borrowers-----			
Negative	27	18	13	0
\$0 to \$4,999	35	28	13	33
\$5,000 to \$9,999	35	25	13	22
\$10,000 to \$14,999	3	11	27	11
\$15,000 and over	0	18	13	33
Overall Average	\$ 2,479	\$ 8,351	\$13,805	\$10,327

<sup>a/</sup> Immediate post-loan resource complement, excluding the value of any land owned.

<sup>b/</sup> 1977 dollars.

The influence of initial resource value on borrower progress appeared to be much stronger in the FO program. An increase in beginning resource value was associated with a decrease in the proportion of borrowers who experienced a decline in real net worth, and also an increase in the rate of financial progress for those borrowers who did progress.

In each of the two loan programs, financial progress reached a maximum as beginning resource value increased, and then fell off noticeably for those borrowers with the highest initial level of resources (\$75,000 and over). This latter trend parallels the influence identified in the previous section, where borrowers with a high level of pre-loan total assets also made less progress. It is possible that the two trends are related, in that in order to require FmHA assistance borrowers with more initial

assets may have to be either weaker operators or in financial difficulty prior to obtaining assistance from FmHA.

### Beginning Post-Loan Equity Ratio

The borrower's beginning equity ratio (equity/assets) is important for two divergent reasons. From the lender's viewpoint it indicates the security margin available. For the borrower it reflects the degree of leverage used to acquire the assets employed and implies the leverage required to obtain additional assets.

Between loan programs, FO borrowers tended to have the lowest equity ratio (table 51). This likely occurred because of the increased level of real estate assets which normally can be leveraged at a higher level. The borrower's beginning equity ratio had a marked effect on borrower progress, particularly in the OL program. For these borrowers an increase in equity corresponded to both an increase in the incidence of losses in real net worth, and a decrease in the rate of overall financial progress. Somewhat similar trends were apparent in the FO program.

Table 51. PROGRESS BY BEGINNING EQUITY RATIO<sup>a/</sup>  
BORROWERS EXITING FmHA PROGRAMS, 1977

Average Annual Change in Net Worth (1977 Dollars)	Equity Ratio			
	0% to 24%	25% to 49%	50% to 74%	75% to 100%
<u>Operating Loan Program</u>				
Percent of all Borrowers	18	41	22	19
	-----Percent of Borrowers-----			
Negative	11	26	37	34
\$0 to \$4,999	26	36	39	49
\$5,000 to \$9,999	29	15	10	4
\$10,000 to \$14,999	25	9	7	4
\$15,000 and over	8	13	7	8
Overall Average	\$ 4,538	\$ 4,744	\$ -207	\$ 936
<u>Ownership Loan Program</u>				
Percent of all Borrowers	24	45	18	13
	-----Percent of Borrowers-----			
Negative	11	18	31	20
\$0 to \$4,999	22	27	31	40
\$5,000 to \$9,999	33	21	8	40
\$10,000 to \$14,999	11	12	15	0
\$15,000 and over	22	21	15	0
Overall Average	\$11,605	\$ 7,875	\$ 5,417	\$ 3,276

<sup>a/</sup> Immediate post-loan situation. Equity ratio equals equity/assets.

Clearly a highly leveraged financial position leads to increased financial progress, a result which is in striking accord with conventional firm growth theory. As described by Barry: "Increasing financial leverage will accelerate growth as long as the marginal returns from the use of loan proceeds exceeds the costs of borrowing."

Leverage is important to financial progress in absolute as well as relative terms because access to credit is determined by the amount of equity available in addition to the equity ratio. To ascertain the extent of this influence on borrower progress, the average value of beginning post-loan resources was determined for each equity ratio category. Beginning post-loan resource value is used as a crude proxy for borrowing power.

The results indicate that the two factors are mutually reinforcing. The more highly leveraged borrowers who exhibited the highest levels of financial progress, also had higher levels of beginning resources. In the OL program, borrowers with a 25 to 49 percent equity ratio had an average initial resource value of \$33,206; 50 to 74 percent, \$31,664; 0 to 24 percent, \$27,541; and 75 to 100 percent, \$22,545 (1977 dollars).

Consequently it appears that only through some leveraging will borrowers be assured of reasonable financial growth. To merely maintain the status quo, or to rely on reinvesting cash surpluses to generate growth may seriously reduce the long term viability of the borrower's farm business. This conclusion appears especially pertinent to the smaller, low income OL borrowers.

In drawing this conclusion it is important to bear in mind that leveraging has two facets. Because the 1946-77 period, represented in the analysis, was a period of general prosperity in agriculture, only the positive effects of leverage on financial growth are apparent. A similar analysis conducted over a period of low farm incomes may have yielded different results, highlighting the risks of leveraging and the detrimental impact it can have on financial progress under these conditions.

#### Beginning Post-Loan Asset and Debt Structure

Asset structure refers to the mix of resources available to a farmer. For the purposes of this analysis it was measured as the ratio of real estate assets to total assets.

As expected there was a noticeable difference in the asset structure of borrowers in the two loan programs. Operating Loan borrowers had a higher proportion of real estate assets (table 52). Sixty-three percent of these borrowers had more than 50 percent of their total assets in real estate, compared to 42 percent of OL borrowers.

Asset structure did not appear to noticeably influence borrower progress in either loan program. At high ratios of real estate assets to total assets (75 to 100 percent), financial progress was relatively poor. This was difficult to explain.

The post-loan ratio of real estate debt to total debt was used to measure debt structure. Of the two loan programs, OL borrowers had the least desirable debt structure. Sixty-six percent of these borrowers had less than 50 percent of their total debt as real estate debt, compared to 41 percent of the FO borrowers (table 53).

Table 52.

**PROGRESS BY INITIAL ASSET STRUCTURE<sup>a/</sup>  
BORROWERS EXITING FmHA PROGRAMS, 1977**

Average Annual Change in Net Worth (1977 Dollars)	Real Estate Assets/Total Assets			
	0% to 24%	25% to 49%	50% to 74%	75% to 100%
<b>Operating Loan Program</b>				
Percent of all Borrowers	41	17	30	12
	-----Percent of Borrowers-----			
Negative	22	25	27	38
\$0 to \$4,999	37	53	32	31
\$5,000 to \$9,999	13	13	22	17
\$10,000 to \$14,999	16	5	10	7
\$15,000 and over	12	4	9	6
Overall Average	\$ 3,855	\$ 1,860	\$ 3,886	\$ -1,075
<b>Ownership Loan Program</b>				
Percent of all Borrowers	19	18	49	14
	-----Percent of Borrowers-----			
Negative	0	14	16	55
\$0 to \$4,999	40	50	18	18
\$5,000 to \$9,999	27	7	32	27
\$10,000 to \$14,999	13	14	13	0
\$15,000 and over	20	14	21	0
Overall Average	\$ 9,030	\$ 7,142	\$ 9,716	\$ -580

<sup>a/</sup> Immediate post-loan situation.

From the viewpoint of both the lender and the borrower, a high proportion of real estate debt is considered desirable since it usually carries less onerous repayment terms. However, the analysis yielded no discernable trends in the influence of debt structure on financial progress.

Hence, it appears that neither asset structure nor debt structure are significant influences on borrower progress.

**Beginning Post-Loan Total Net Cash Income**

The income figure used for this analysis was the borrower's total net cash income from both on- and off-farm sources. This income was available to meet family living expenses, loan repayments, and capital expenditures.

The distribution of income was very similar for both programs with approximately 50 percent of the borrowers having an income of less than \$10,000 (1977 dollars). Average beginning income was \$11,355 for the FO program. Despite these similarities of beginning net income levels, final income levels at the

time of loan repayment in 1977 were quite different, averaging \$23,691 and \$32,718 (1977 dollars) for OL and FO borrowers, respectively.

Table 53. PROGRESS BY BEGINNING DEBT STRUCTURE  
BORROWERS EXITING FmHA PROGRAMS, 1977

Average Annual Change in Net Worth (1977 Dollars)	Real Estate Debt/Total Debt <sup>a/</sup>			
	0% to 24%	25% to 49%	50% to 74%	75% to 100%
<b>Operating Loan Program</b>				
Percent of all Borrowers	53	13	16	18
	-----Percent of Borrowers-----			
Negative	25	28	32	21
\$0 to \$4,999	41	50	23	30
\$5,000 to \$9,999	11	11	22	29
\$10,000 to \$14,999	13	0	14	12
\$15,000 and over	10	11	9	8
Overall Average	\$ 2,888	\$ 613	\$ 3,538	\$ 4,726
<b>Ownership Loan Program</b>				
Percent of all Borrowers	27	14	28	31
	-----Percent of Borrowers-----			
Negative	5	27	18	25
\$0 to \$4,999	43	45	23	13
\$5,000 to \$9,999	24	9	23	37
\$10,000 to \$14,999	9	0	18	13
\$15,000 and over	19	18	18	12
Overall Average	\$ 8,566	\$ 4,315	\$ 9,310	\$ 6,922

<sup>a/</sup> Immediate post-loan situation.

As might be expected, the level of beginning income had a marked influence on borrower progress, low incomes limited financial progress in both loan programs (tables 54 and 55). For the OL program the proportion of borrowers experiencing a loss in real net worth declined noticeably when beginning incomes reached \$20,000 (table 54). For those borrowers who did make financial progress, the level of progress increased as income increased, particularly in the OL program.

#### Beginning Post-Loan Off-Farm Income

Having established the importance of total net cash income to borrower progress, it is also useful to examine the influence of the sources of this income. On average OL borrowers netted \$2,310 (1977 dollars) from off-farm income, which represented 49 percent of their total net cash income. Off-farm income levels were only slightly lower among FO borrowers who netted \$1,971 (1977 dollars) from off-farm sources, which was equivalent to 46 percent of total net cash income.



Table 54. PROGRESS BY TOTAL NET CASH INCOME<sup>a/</sup>  
BORROWERS EXITING FmHA OPERATING LOAN PROGRAM, 1977

Average Annual Change in Net Worth (1977 Dollars)	Total Net Cash Income <sup>b/</sup>		
	\$0 to \$9,999	\$10,000- \$19,999	\$20,000 and over
Percent of all Borrowers	50	35	15
	-----Percent of Borrowers-----		
Negative	18	29	2
\$0 to \$4,999	53	29	22
\$5,000 to \$9,999	19	19	43
\$10,000 to \$14,999	0	19	11
\$15,000 and over	10	5	22
Overall Average	\$ 3,790	\$ 4,066	\$ 7,429

<sup>a/</sup> Beginning post-loan income from on- and off-farm sources.

<sup>b/</sup> 1977 dollars.

Table 55. PROGRESS BY TOTAL NET CASH INCOME<sup>a/</sup>  
BORROWERS EXITING FmHA OWNERSHIP LOAN PROGRAM, 1977

Average Annual Change in Net Worth (1977 Dollars)	Total Net Cash Income <sup>b/</sup>	
	\$0 to \$9,999	\$10,000 and over
Percent of all Borrowers	48	52
	-----Percent of Borrowers-----	
Negative	19	13
\$0 to \$4,999	34	13
\$5,000 to \$9,999	33	35
\$10,000 to \$14,999	0	13
\$15,000 and over	14	26
Overall Average	\$6,219	\$13,518

<sup>a/</sup> Beginning post-loan income from on- and off-farm sources.

<sup>b/</sup> 1977 dollars.

The influence of off-farm income on borrower progress differed between loan programs. Higher levels of off-farm income were advantageous for OL borrowers but appeared to reduce financial progress among FO borrowers (tables 56 and 57).

For low income farmers off-farm income is an important supplement to operating income. It also reduces the farmer's vulnerability to fluctuations in farm income resulting from the effects of weather and prices. Nevertheless, it represents an opportunity cost in terms of the time spent off the farm, and the consequent farm income foregone.

Table 56. PROGRESS BY INITIAL OFF-FARM INCOME<sup>a/</sup>  
BORROWERS EXITING FmHA OPERATING LOAN PROGRAM, 1977

Average Annual Change in Net Worth (1977 Dollars)	Off-Farm Income <sup>b/</sup>		
	\$0 to 2,499	\$2,500 \$4,999	\$5,000 and over
Percent of all Borrowers	68	16	16
	-----Percent of Borrowers-----		
Negative	16	41	12
\$0 to \$4,999	47	39	11
\$5,000 to \$9,999	21	10	39
\$10,000 to \$14,999	9	0	19
\$15,000 and over	7	10	19
Overall Average	\$3,873	\$ 3,885	\$ 6,525

<sup>a/</sup> Immediate post-loan situation, net off-farm income.

<sup>b/</sup> 1977 dollars.

The trade-off between these two factors depends on the relative contributions to total income of on-farm and off-farm income. As indicated by Hendrix "what matters most... is the amount and quality of the employment." In this context it appears that OL borrowers benefit the most from off-farm income because their lower incomes make them more vulnerable to cash flow problems and fluctuations in farm income. For FO borrowers whose farm incomes are higher, the opportunity cost of working off the farm is much greater. Their protection against the vagaries of price and climate is best derived from improving farm income, rather than from increasing off-farm income.

#### Age at Time of First Loan

Management objectives and ability are influenced by personal factors such as the farmer's age, education, experience and family situation. In addition to their direct effects, these factors may affect the farmer's level of risk aversion, and so influence the choice between progress versus maintenance of the status quo as a management objective.

Table 57. PROGRESS BY INITIAL OFF-FARM INCOME<sup>a/</sup>  
BORROWERS EXITING FmHA  
OWNERSHIP LOAN PROGRAM, 1977

Average Annual Change in Net Worth (1977 Dollars)	Off-Farm Income <sup>b/</sup>	
	\$0 to \$2,499	\$2,500 and over
Percent of all Borrowers	71	29
	-----Percent of Borrowers-----	
Negative	13	23
\$0 to \$4,999	22	31
\$5,000 to \$9,999	37	23
\$10,000 to \$14,999	6	8
\$15,000 and over	22	15
Overall Average	\$10,881	\$ 6,110

<sup>a/</sup> Immediate post-loan situation, net off-farm income.

<sup>b/</sup> 1977 dollars.

In line with previous studies of borrower characteristics the majority of borrowers in each loan program (55 to 58 percent) were under 35 years of age at the time they first received FmHA assistance. Farm Ownership Loan borrowers were slightly younger than OL borrowers, the average age in each loan program being 34.8 years and 36.7 years, respectively.

As found in earlier studies the youngest borrowers made the greatest financial progress (tables 58 and 59). However, a relatively high proportion of younger (under 35) borrowers in the OL program experienced a loss in real net worth, compared to those borrowers in the same program aged 35-54 years. Borrowers 55 years and over made the least progress, had the lowest overall rate of financial progress and had the highest proportion of borrowers who experienced a loss in real net worth. By comparison the progress of FO borrowers under 35 years were superior to older borrowers in all aspects.

The trends apparent in this analysis support the generally held view that younger farmers are the most likely to progress financially. This may occur because they are more willing to take the chances associated with potentially high yielding investments. In contrast, the tendency of older borrowers to favor the status quo may contribute to the lower overall viability of their farms.

An alternative explanation is that some negative selection takes place in the identification of older borrowers who receive FmHA loans. The better managers may get started one way or another when they are young, leaving primarily the poorer managers with a need for FmHA financing later in life.

Table 58. PROGRESS BY BEGINNING AGE<sup>a/</sup>  
BORROWERS EXITING FmHA OPERATING LOAN PROGRAM, 1977

Average Annual Change in Net Worth (1977 Dollars)	Age (years)		
	Under 35	35 to 54	55 and over
Percent of all Borrowers	55	36	9
	-----Percent of Borrowers-----		
Negative	29	21	38
\$0 to \$4,999	28	50	28
\$5,000 to \$9,999	16	15	17
\$10,000 to \$14,999	14	7	9
\$15,000 and over	13	7	8
Overall Average	\$ 4,216	\$ 1,835	\$ 996

<sup>a/</sup> Age at time of loan application.

Table 59. PROGRESS BY BEGINNING AGE<sup>a/</sup>  
BORROWERS EXITING FmHA OWNERSHIP LOAN PROGRAM, 1977

Average Annual Change in Net Worth (1977 Dollars)	Age (years)	
	Under 35	35 and over
Percent of all Borrowers	58	42
	-----Percent of Borrowers-----	
Negative	16	22
\$0 to \$4,999	29	22
\$5,000 to \$9,999	25	28
\$10,000 to \$14,999	14	9
\$15,000 and over	16	19
Overall Average	\$ 8,545	\$ 6,797

<sup>a/</sup> Age at time of loan application.

#### Level of Formal Education

The distribution of education levels was very similar between loan programs (table 60). Overall FO borrowers averaged 10.1 years of formal education, compared to 9.7 years for OL borrowers.

Table 60. PROGRESS BY LEVEL OF EDUCATION  
BORROWERS EXITING FmHA PROGRAMS, 1977

Average Annual Change in Net Worth (1977 Dollars)	Education		
	Elementary	High School	College
<u>Operating Loan Program</u>			
Percent of all Borrowers	33	47	20
	-----Percent of Borrowers-----		
Negative	16	27	50
\$0 to \$4,999	51	32	10
\$5,000 to \$9,999	18	14	15
\$10,000 to \$14,999	6	13	25
\$15,000 and over	9	14	0
Overall Average	\$ 3,050	\$ 3,634	\$ 14
<u>Ownership Loan Program</u>			
Percent of all Borrowers	37	40	23
	-----Percent of Borrowers-----		
Negative	13	18	40
\$0 to \$4,999	31	35	20
\$5,000 to \$9,999	31	18	10
\$10,000 to \$14,999	6	6	30
\$15,000 and over	19	23	0
Overall Average	\$ 7,721	\$10,793	\$ 2,066

The borrower's level of formal education had a marked influence on borrower progress, this influence being quite similar between loan programs. Two different trends were apparent. First, as the level of education increased, so did the proportion of borrowers who experienced a loss in real net worth (table 60). There was also some increase in the rate of financial progress for those borrowers who did progress, as measured by the proportion of borrowers with an average annual change in net worth of \$10,000 or more. These trends are consistent with the hypothesis that higher levels of formal education may be associated with decreasing risk aversion. The willingness to take risks and the ability to handle, however, are two different characteristics.

Borrowers with a high school education generally made more rapid progress than those with only elementary schooling. The average performance of FmHA borrowers with a college education was not as good as those with only high school training.

#### Household Size at Time of First Loan

The distribution of initial household size differed slightly between loan programs (tables 61 and 62). However, average household size was almost identical with 4.12 persons in the FO program and 4.00 in the OL program.

Table 61. PROGRESS BY INITIAL HOUSEHOLD SIZE  
BORROWERS EXITING FmHA OPERATING LOAN PROGRAM, 1977

Average Annual Change in Net Worth (1977 Dollars)	Household Size		
	1 to 3 persons	4 to 6 persons	7 or more persons
Percent of all Borrowers	43	46	11
	-----Percent of Borrowers-----		
Negative	32	19	37
\$0 to \$4,999	33	37	41
\$5,000 to \$9,999	15	19	14
\$10,000 to \$14,999	9	15	1
\$15,000 and over	11	10	7
Overall Average	\$ 2,825	\$ 4,630	\$-1,813

Table 62. PROGRESS BY INITIAL HOUSEHOLD SIZE  
BORROWERS EXITING FmHA OWNERSHIP LOAN PROGRAM, 1977

Average Annual Change in Net Worth (1977 Dollars)	Household Size	
	1 to 3 persons	4 or more persons
Percent of all Borrowers	35	65
	-----Percent of Borrowers-----	
Negative	22	16
\$0 to \$4,999	26	27
\$5,000 to \$9,999	18	31
\$10,000 to \$14,999	15	10
\$15,000 and over	19	16
Overall Average	\$ 9,332	\$ 6,970

As a potential influence on borrower progress, household size may be important for a number of reasons. An increase in household size may enhance borrower progress by providing either an additional source of labor for the farm, or an additional source of off-farm income. However, too large a farm household will drain financial resources which could have been invested in the farm. Furthermore, a farmer with a large household to support may be more risk averse and so less likely to make financial progress.

The relationship between household size and borrower progress differed for the two loan programs. In the OL program an initial household size of four to six persons was optimal in all respects. Households smaller and larger than this size category had a relatively high incidence of borrowers experiencing a loss in real net worth, particularly those households of seven or more people, which made least progress in all respects.

A higher proportion of small FO households experienced losses. However, the rate of financial progress decreased as household size increased (table 62).

Reasons for the apparently larger optimal family size for OL farms are not clear. Certainly household size is not linearly associated with the borrower's level of risk aversion.

Given the higher level of reliance on off-farm income in the OL program, it is possible that the larger optimal household size in this loan program is associated with additional off-farm income. Further, analysis indicates a strong association between increased household size and an increase in the contribution of off-farm income to total income in both loan programs. In the OL program, off-farm income contributed 42 percent of beginning total income for households of one to three persons, 46 percent of total income for households of four to six persons, and 57 percent of total income for households of seven or more persons. The corresponding average contributions of off-farm income to beginning total income in the respective household size categories of FO borrowers were 34 percent and 52 percent.

This rather tenuous conclusion is also supported by the correspondence between lower optimum household size and lower optimum reliance on off-farm income in the FO program.

### Level of Agricultural Education

Between loan programs there was a high degree of similarity in the distribution of the highest level of agricultural education achieved by the borrowers (table 63). However, there were no readily discernible trends in the influence of agricultural education on borrower progress. Borrowers with no agricultural education did not seem to be at a serious disadvantage in either loan program, particularly when compared to borrowers who had participated in the young farmer instruction program.

The relatively poor progress made by borrowers who participated in the young farmer instruction program is difficult to explain. This trend could reflect the quality of the instruction program, the quality of the participants, or both. However, which, if any, of these factors were involved could not be ascertained from the data available.

Ignoring the influence of the young farmer instruction program, it appears that neither the receipt of an agricultural education, nor the level to which it is taken has an important impact on financial progress. One possible explanation for this result is that considerable adverse self selection may occur. Those with strong agricultural education who need FmHA assistance may primarily include those with other management limitations.

Table 63. PROGRESS BY AGRICULTURAL EDUCATION  
BORROWERS EXITING FmHA PROGRAMS, 1977

Average Annual Change in Net Worth (1977 Dollars)	Agricultural Education			
	None	High School Vo-Ag	Young Farmer Program	College <sup>a/</sup>
<u>Operating Loan Program</u> Percent of all Borrowers	49	32	8	11
	-----Percent of Borrowers-----			
Negative	26	22	40	31
\$0 to \$4,999	39	39	31	24
\$5,000 to \$9,999	19	15	19	7
\$10,000 to \$14,999	8	14	10	15
\$15,000 and over	8	10	0	23
Overall Average	\$ 2,253	\$ 4,156	\$ 1,504	\$ 3,664
<u>Ownership Loan Program</u> Percent of all Borrowers	46	32	13	9
	-----Percent of Borrowers-----			
Negative	17	17	30	14
\$0 to \$4,999	23	33	20	29
\$5,000 to \$9,999	28	21	30	20
\$10,000 to \$14,999	9	17	10	14
\$15,000 and over	23	12	10	14
Overall Average	\$ 8,369	\$ 8,159	\$ 5,526	\$ 7,072

<sup>a/</sup> College and/or Technical College.

#### Length of Pre-Loan Farming Experience

The distribution of pre-loan farming experience among borrowers was similar between loan programs (table 64). The average length of pre-loan farming experience was also very similar, amounting to 14.2 years for OL borrowers, and 13.8 years for FO borrowers.

In each of the two loan programs the least experienced borrowers made the best overall financial progress, in spite of a relatively high proportion of such borrowers experiencing a loss in real net worth. Financial progress decreased as pre-loan farming experience increased beyond five years. This result is consistent with the finding that older borrowers are less successful and may reflect a tendency for the weaker operators to seek FmHA assistance at a later stage in life. Five years may be enough time to obtain an adequate level of experience.



Table 64.

**PROGRESS BY YEARS OF EXPERIENCE<sup>a/</sup>  
BORROWERS EXITING FmHA PROGRAMS, 1977**

Average Annual Change in Net Worth (1977 Dollars)	Years of Experience		
	1 to 5	6 to 10	11 or more
<u>Operating Loan Program</u> Percent of all Borrowers	34	20	46
	-----Percent of Borrowers-----		
Negative	27	13	30
\$0 to \$4,999	23	58	40
\$5,000 to \$9,999	23	12	10
\$10,000 to \$14,999	20	0	10
\$15,000 and over	7	17	10
Overall Average	\$ 4,314	\$ 4,289	\$ 2,087

  

	Years of Experience	
	1 to 5	6 or more
<u>Ownership Loan Program</u> Percent of Borrowers	38	62
	-----Percent of Borrowers-----	
Negative	25	15
\$0 to \$4,999	10	34
\$5,000 to \$9,999	25	27
\$10,000 to \$14,999	25	6
\$15,000 and over	15	18
Overall Average	\$ 8,916	\$ 7,013

<sup>a/</sup> Pre-loan farming experience.

**Level of Pre-Loan Farming Experience**

The level of pre-loan farming experience used for the analysis is the highest level of experience reported for the borrower. School year experience refers to borrowers who grew up on a farm and/or worked on farms during their school years. Working experience refers to those borrowers employed full-time on farms. Full management refers to borrowers who had been either hired managers or owner-operators. Those borrowers with working experience could have acquired this experience on either their home farms or other farms, and may also have participated in management to some extent.

Borrowers with working experience made the best financial progress in all respects. Those borrowers with only school year experience were at some disadvantage, especially in the OL program. Surprisingly, borrowers with full management experience did not have an advantage over those with only working experience in either loan program (table 65).

Table 65. PROGRESS BY LEVEL OF EXPERIENCE<sup>a/</sup>  
BORROWERS EXITING FmHA PROGRAMS, 1977

Average Annual Change in Net Worth (1977 Dollars)	Level of Experience		
	School Years	Working Experience	Full Management
<u>Operating Loan Program</u>			
Percent of all Borrowers	24	23	53
	-----Percent of Borrowers-----		
Negative	31	26	25
\$0 to \$4,999	33	40	36
\$5,000 to \$9,999	16	7	21
\$10,000 to \$14,999	10	17	9
\$15,000 and over	10	10	9
Overall Average	\$ 1,783	\$ 4,038	\$ 3,345
<u>Ownership Loan Program</u>			
Percent of all Borrowers	22	14	18
	-----Percent of Borrowers-----		
Negative	22	14	18
\$0 to \$4,999	33	29	23
\$5,000 to \$9,999	23	21	29
\$10,000 to \$14,999	6	14	14
\$15,000 and over	17	21	16
Overall Average	\$ 7,739	\$11,561	\$ 6,644

<sup>a/</sup> Highest level of pre-loan farming experience obtained.

### Production Levels

For a given level of physical and financial resources, the extent to which a farmer makes financial progress will depend largely on his or her management ability. To some extent, management ability is predetermined by the farmer's prior education and experience. But actual management ability only becomes apparent when management decisions are made and the results observed.

No explicit assessment of the borrower's management ability was made in the survey from which these data were drawn. Hence, the influence of this key variable was examined using both direct and indirect measures of management ability. These included borrower production levels relative to national or state levels of production,

the borrower's interest in improving productivity, and the quality of his or her farm record system.

These measures do not describe the borrower's beginning management explicitly, since they are based on information collected at the time the borrower repaid his loan. Nevertheless, the correlation between final and beginning management is probably a strong one, as management skills and ability seldom change dramatically.

Actual livestock and crop production records were obtained for each borrower from the 1977 Farm and Home Plan. These figures were then compared to the average production obtained by all farmers in that state in the same year, in order to rank the level of output obtained for each enterprise. A simple average of these numerical rankings was then calculated for each borrower to determine their overall production ranking across all enterprises.

A schematic of the simple methodology used to develop these enterprise rankings is presented below<sup>6/</sup>.

<u>Production Category</u>	<u>Enterprise Production Level Relative To State Average</u>	<u>Ranking of Each Enterprise</u>
Above average	110 %	1
Average	90 - 110 %	2
Below average	90 %	3

This crude assessment of production levels has many obvious limitations. Among other things it is based on only one year's production, and it makes no attempt to account for the relative importance of different enterprises within the management system. Furthermore, the ranking of individual enterprises relative to state production levels is not sensitive to normally expected intrastate variation around "average" production levels.

There was a strong similarity between the two loan programs in the influence of production levels on borrower progress (table 66). Overall levels of financial progress increased noticeably in association with an increase in production levels.

The incidence of borrowers experiencing a loss in real net worth was similar for average and below average production levels, but markedly less frequent for above average production. However, the frequency of high rates of financial progress (annual change in net worth was \$10,000 or more) increased as production levels increased.

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<sup>6/</sup> Cattle rankings were based on the national average calving percentage, estimated at 90 percent. The corresponding enterprise rankings were:

Above average = greater than 95 percent calving

Average = 85 to 95 percent calving

Below Average = less than 85 percent calving

Table 66.

PROGRESS BY RATE OF PRODUCTION  
BORROWERS EXITING FmHA PROGRAMS, 1977

Average Annual Change in Net Worth (1977 Dollars)	Rate of Production		
	Above State Average	Average	Below State Average
<u>Operating Loan Program</u>			
Percent of all Borrowers	16	54	30
	-----Percent of Borrowers-----		
Negative	12	23	23
\$0 to \$4,999	38	35	63
\$5,000 to \$9,999	25	19	14
\$10,000 to \$14,999	13	15	0
\$15,000 and over	12	8	0
Overall Average	\$ 5,787	\$ 3,978	\$ 438
<u>Ownership Loan Program</u>			
Percent of all Borrowers	14	58	28
	-----Percent of Borrowers-----		
Negative	0	19	20
\$0 to \$4,999	0	14	50
\$5,000 to \$9,999	60	29	30
\$10,000 to \$14,999	0	14	0
\$15,000 and over	40	24	0
Overall Average	\$12,723	\$10,756	\$ 2,852

### Interest in Improving Productivity

In all respects the borrower's interest in improving productivity was strongly associated with borrower progress (table 67). These results confirm that "improvement in productivity" as a management objective is an important prerequisite for the successful implementation of a progress oriented management program. Given the strong relationship between productivity and progress, an interest in improving productivity becomes an important prerequisite for progress.

Furthermore, it appears that supervision directed at borrowers with little interest in improving productivity will probably be ineffective, since these borrowers lack the motivation to respond to management advice. In contrast, supervision directed at the majority of borrowers who do express an interest in improving productivity may prove useful and desirable.

### Quality of the Farm Record System

Because management decisions are only as good as the information on which they are based, an effective farm record system is an essential management resource. In both loan programs an improvement in the quality of the farm record system was accompanied by a noticeable improvement in all aspects of borrower progress

(table 68). This association was most evident in the FO program, where the greater size and complexity of borrowers' farms makes a good farm record system increasingly important.

Table 67. **PROGRESS BY LEVEL OF INTEREST  
IN IMPROVING PRODUCTIVITY  
BORROWERS EXITING FmHA PROGRAMS, 1977**

Average Annual Change in Net Worth (1977 Dollars)	Interest in Improving Productivity		
	Very Interested	Interested	Little Interest
<b>Operating Loan Program</b>			
Percent of all Borrowers	20	57	23
	-----Percent of Borrowers-----		
Negative	15	26	34
\$0 to \$4,999	23	39	42
\$5,000 to \$9,999	19	17	14
\$10,000 to \$14,999	23	8	7
\$15,000 and over	19	10	3
Overall Average	\$ 8,096	\$ 3,232	\$ 423
<b>Ownership Loan Program</b>			
Percent of all Borrowers	24	56	20
	-----Percent of Borrowers-----		
Negative	6	21	33
\$0 to \$4,999	28	26	27
\$5,000 to \$9,999	28	26	20
\$10,000 to \$14,999	17	7	13
\$15,000 and over	22	19	7
Overall Average	\$13,386	\$ 6,869	\$ 3,300

### Factors Influencing Borrower Success

The second measure used to determine the degree of accomplishment by FmHA borrowers was success. The criteria for borrower success were based on graduation to a commercial lender. Successful borrowers either had graduated to a commercial lender, or had left farming while in a financial position strong enough to graduate. Unsuccessful borrowers were those who had discontinued their relationship with FmHA as a result of financial difficulties. They had either sold some or all of their farm resources in order to repay their loans; or their loans had been foreclosed or written off. The various subcategories of borrower success and failure are presented in table 69.

Sixty-eight percent of borrowers in the OL program and 85 percent in the FO program were successful (table 69). It is evident that some successful borrowers in the FO program were reluctant to graduate to other lenders, in spite of their strong

overall financial position. Only 27 percent graduated of their own accord in the FO program, compared to 40 percent in the OL program.

Table 68. **PROGRESS BY FARM RECORD SYSTEM  
BORROWERS EXITING FmHA PROGRAMS, 1977**

Average Annual Change in Net Worth (1977 Dollars)	Quality of Farm Record System		
	Good to Excellent	Fair	No Records Kept
<u>Operating Loan Program</u>			
Percent of all Borrowers	35	37	29
	-----Percent of Borrowers-----		
Negative	11	32	35
\$0 to \$4,999	34	32	45
\$5,000 to \$9,999	23	15	11
\$10,000 to \$14,999	18	11	3
\$15,000 and over	14	10	6
Overall Average	\$ 7,166	\$ 2,267	\$ 781
<u>Ownership Loan Program</u>			
Percent of all Borrowers	43	36	21
	-----Percent of Borrowers-----		
Negative	0	26	44
\$0 to \$4,999	30	19	31
\$5,000 to \$9,999	27	33	13
\$10,000 to \$14,999	12	15	6
\$15,000 and over	30	7	6
Overall Average	\$13,374	\$ 4,674	\$ 1,622

The results in table 69 are based on block 1 data; 1,653 borrowers. All subsequent analysis of borrower success is based on analysis of block 2 data, as was the analysis of borrower progress.

The association between financial progress and borrower success is not as comprehensive as might be expected, despite the similarity between the proportion of successful borrowers (table 69) and the proportion of borrowers making real financial progress (table 42). While "success" per se is closely related to financial progress, the relationship is not perfect (table 70). Financial progress is only one element of borrower success. Forty-four to 49 percent of the borrowers who made real net worth progress were classified as unsuccessful. Other factors such as increases in nominal asset values, debt servicing ability, production management and financial management are also important determinants of borrower success. The factors used to study borrower progress were also used to determine the elements of borrower success.

Table 69. REASON FOR SEVERING RELATIONSHIP WITH FmHA<sup>a/</sup>  
BORROWERS EXITING FmHA PROGRAMS, 1977

	Farm Operating Loan Program	Farm Ownership Loan Program
--Percent of Borrowers--		
<u>Successful Borrowers</u>		
Graduated-borrower's decision	39	27
Graduated at FmHA's request	9	37
Graduated-other lender's request	6	8
Left farming-financially sound	14	13
	<u>68</u>	<u>85</u>
<u>Unsuccessful Borrowers</u>		
Left farming-financially unsound	16	10
Sold resources to repay loan	8	5
Loan foreclosed	1	b
Loan written off	7	b
	<u>32</u>	<u>15</u>

a/ Block one data (1,653 observations).

b/ Less than one percent.

Table 70. RELATIONSHIP BETWEEN SUCCESS AND  
FINANCIAL PROGRESS  
BORROWERS EXITING FmHA PROGRAMS, 1977

Average Annual Change in Net Worth (1977 Dollars)	Successful Borrowers	Unsuccessful Borrowers
-----Percent of Borrowers-----		
<u>Operating Loan Program</u>		
Negative	21	51
\$0 to \$4,999	32	38
\$5,000 to \$9,999	22	6
\$10,000 to \$14,999	13	a/
\$15,000 and over	12	5
Overall Average	\$ 5,245	\$ -498
-----Percent of Borrowers-----		
<u>Ownership Loan Program</u>		
Negative	16	56
\$0 to \$4,999	25	22
\$5,000 to \$9,999	30	11
\$10,000 to \$14,999	14	0
\$15,000 and over	16	11
Overall Average	\$ 8,257	\$ -586

a/ Less than 0.5 percent.

Region

In both loan programs southern borrowers had the lowest success rates (tables 71 and 72). The highest success rates were achieved by western borrowers in the FO program, and northern borrowers in the OL program. However, particularly in the OL program, there was little difference between the success rates of borrowers in the north and west. These results are similar to those obtained in the analysis of borrower progress.

Table 71. GENERAL FACTORS INFLUENCING FmHA SUCCESS  
BORROWERS EXITING FmHA OPERATING LOAN PROGRAMS, 1977

Farm Characteristics	Success Rate (%)
<u>Region</u>	
North	82
South	77
West	80
<u>Farm Type</u>	
Tobacco	94
Beef-cow calf	70
Dairy	61
Cash Grain	91
Hog	91
<u>Post-loan Tenure Status</u>	
Owners	84
Part Owners	86
Tenants	78

Farm Type

Of the farm types analyzed for the OL program, borrowers with hog, cash grain, and tobacco farms had the highest success rates followed by beef-cow/calf and then dairy operations (table 71). In the FO program borrowers with cash grain farms were again highly successful, while beef-cow/calf and dairy operations had lower (but similar) success rates (table 72).

In general, the relationship between farm type and borrower success was similar to that found with borrower progress. The exception was that tobacco farmers in the OL program exhibited high success rates in spite of poor financial progress. Factors other than changes in real net worth thus appear to have a more important influence on the success or failure of these tobacco farm borrowers.



Table 72. GENERAL FACTORS INFLUENCING FmHA SUCCESS  
BORROWERS EXITING FmHA OWNERSHIP LOAN PROGRAMS, 1977

Farm Characteristics	Success Rate (%)
<u>Region</u>	
North	93
South	77
West	100
<u>Farm Type</u>	
Beef-cow/calf	81
Dairy	83
Cash Grain	100
<u>Post-loan Tenure Status</u>	
Owners	87
Part Owners	85
Tenants	89

### Post-Loan Tenure Status

Both within and between loan programs there was little difference in the success rates of different tenure categories. Although part owners and tenants achieved more rapid rates of progress (increases in net worth) their frequency of success was very similar to that of full owners.

### Adequacy and Quality of Physical Resources

In his 1971 study of successful and unsuccessful Operating Loans, Evans paid scant attention to the influence of physical resources. He merely observed that "successful" borrowers tended to have better land, buildings and machinery than "unsuccessful" borrowers.

The influences of soil quality, building quality and machinery quantity on borrower success were very strong in both loan programs (tables 73 and 74). Success rates declining in each case, as the availability or quality of the resources declined. These trends were most pronounced at the lowest level of resource adequacy and quality, indicating that the changes of borrower success can be increased just by having access to adequate, medium quality resources.

From the analysis of borrower progress it was evident that real net worth increased dramatically when the resource complement improved from low to medium in terms of quality and quantity. It appears that this real net worth gain contributes significantly to borrower success. Improvements in resource quantity and quality can be expected to increase the rate of financial progress, providing the improved resources can be obtained without incurring an excessive repayment burden.

Table 73. RELATIONSHIP BETWEEN RESOURCE FACTORS AND SUCCESS BORROWERS EXITING FmHA OPERATING LOAN PROGRAMS, 1977

Resource Factor	Success Rate (%)
<u>Soil Quality</u>	
High	100
Medium	83
Low	58
<u>Building Quality</u>	
High	90
Medium	84
Low	72
<u>Machinery Quantity</u>	
Excess	90
Adequate	87
Inadequate	60

Table 74. RELATIONSHIP BETWEEN RESOURCE FACTORS AND SUCCESS BORROWERS EXITING FmHA OWNERSHIP LOAN PROGRAMS, 1977

Resource Factor	Success Rate (%)
<u>Soil Quality</u>	
High	93
Medium	91
Low	69
<u>Building Quality</u>	
High	100
Medium	86
Low	82
<u>Machinery Quantity</u>	
Excess	100
Adequate	91
Inadequate	79

### Pre-Loan Total Assets

The level of pre-loan total assets had only a modest influence on borrower success (table 75 and 76). Borrowers with the highest pre-loan level (over \$100,000) were somewhat more likely to succeed than those with low or medium pre-loan assets. This was particularly the case for OL borrowers. Given FmHA's policy of lending up to 100 percent of available security, this result is not unexpected. For most situations FmHA should be able to lend sufficient funds to allow control of an adequate resource base.

### Beginning Value of Resources Controlled

For each of the two loan programs, an increase in the beginning value of resources controlled was generally associated with an increase in borrower success. The resources counted in this analysis exclude land that is owned since the value of rented or leased land was unavailable.

The results suggest that the level of resources available to the borrower is important to borrower success, although perhaps not quite as important as its influence on borrower progress. Interestingly the adequacy and quality of resources seem to have a larger impact on borrower success than the level of resources controlled, suggesting that quality may be more important than quantity.

### Beginning Equity Ratio

Leveraging, as measured by the borrower's beginning equity ratio (equity as a percent of assets), had a different impact on borrower success than it did on borrower progress where lower equity ratios were generally associated with higher rates of net worth gain. In each of the two loan programs, success rates increased as the equity ratio increased, reaching a maximum success rate at 50 to 74 percent equity. Success rates then declined markedly for borrowers with equity ratios of 75 to 100 percent.

This result indicates that leveraging may enhance borrower success in the same way as it enhances borrower progress; by providing access to additional productive resources. However, the lower success rates of borrowers with less than 50 percent equity likely reflects the impact of cash flow problems that higher indebtedness usually brings. Although higher leveraging results in higher rates of net worth growth, it also results in cash flow requirements that even the higher income, that is likely coincident with the net worth growth, could not meet on some farms. In other cases, the increased net worth growth likely resulted from increased asset values which could not easily be used to provide cash flow.

### Beginning Asset and Debt Structure

Asset structure showed some association with borrower success. Borrowers for whom real estate assets comprised 50 to 74 percent of total assets had the highest success rates. Farms with asset ratios above or below this range had lower success rates.

This implies that including some land in the initial asset mix did contribute to success, even for OL borrowers. However, when real estate makes up over 75 percent of the asset values, both progress (table 52) and success decline sharply. Debt structure had no consistent influence on borrower success.

Table 75. RELATIONSHIP BETWEEN FINANCIAL FACTORS AND SUCCESS BORROWERS EXITING FmHA OPERATING LOAN PROGRAMS, 1977

Financial Factor	Success Rate (%)
<u>Pre-Loan Total Assets</u>	
\$0 to \$4,999	76
\$50,000 to \$99,999	74
\$100,000 and over	86
<u>Beginning Resources Controlled<sup>a/</sup></u>	
\$0 to \$24,999	76
\$25,000 to \$49,999	78
\$50,000 and over	83
<u>Beginning Equity Ratio</u>	
0 to 24%	76
25 to 49%	81
50 to 74%	92
75 to 100%	69
<u>Beginning Asset Structure<sup>b/</sup></u>	
0 to 24%	74
25 to 49%	75
50 to 74%	86
75 to 100%	78
<u>Beginning Debt Structure<sup>c/</sup></u>	
0 to 24%	74
25 to 49%	79
50 to 74%	91
75 to 100%	79
<u>Beginning Total Net Cash Incomed<sup>d/</sup></u>	
\$0 to \$9,999	79
\$10,000 and over	82
<u>Beginning Off-Farm Incomed<sup>d/</sup></u>	
\$0 to \$2,499	81
\$2,500 to \$4,999	76
\$5,000 and over	83

<sup>a/</sup> Excludes the value of any land owned. Beginning refers to the immediate post-loan situation.

<sup>b/</sup> Ratio of real estate assets/total assets.

<sup>c/</sup> Ratio of real estate debt/total debt.

<sup>d/</sup> For year immediately following first loan.

Table 76. RELATIONSHIP BETWEEN FINANCIAL FACTORS  
AND SUCCESS  
BORROWERS EXITING FmHA OWNERSHIP LOAN PROGRAMS, 1977

Financial Factor	Success Rate (%)
<u>Pre-Loan Total Assets</u>	
\$0 to \$49,000	85
\$50,000 to \$99,999	85
\$100,000 and over	89
<u>Beginning Resources Controlled<sup>a/</sup></u>	
\$0 to \$24,999	77
\$25,000 to \$49,999	92
\$50,000 and over	90
<u>Beginning Equity Ratio</u>	
0 to 24%	85
25 to 49%	83
50 to 74%	100
75 to 100%	88
<u>Beginning Asset Structures<sup>b/</sup></u>	
0 to 24%	85
25 to 49%	83
50 to 74%	93
75 to 100%	73
<u>Beginning Debt Structure<sup>c/</sup></u>	
0 to 24%	94
25 to 49%	63
50 to 74%	94
75 to 100%	82
<u>Beginning Total Net Cash Incomed<sup>d/</sup></u>	
\$0 to \$9,999	90
\$10,000 and over	83
<u>Beginning Off-Farm Incomed<sup>d/</sup></u>	
\$0 to \$2,499	93
\$2,500	70

<sup>a/</sup> Excludes the value of any land owned. Beginning refers to the immediate post-loan situation.

<sup>b/</sup> Ratio of real estate assets/total assets.

<sup>c/</sup> Ratio of real estate debt/total debt.

<sup>d/</sup> For year immediately following first loan.

### Beginning Cash Income

Total net cash income earned during the first year immediately following the loan had little influence on borrower success. The results (tables 75 and 76) actually indicate no effect for OL borrowers and an inverse effect for FO borrowers. It appears that first year income is not sufficiently correlated with average income throughout the period of FmHA borrowing to seriously influence farm business success.

Unlike the analysis of OL borrower progress, an increase in off-farm income during the first year after the loan was not associated with an increase in the level of success. There was no real relationship between off-farm income and success for these borrowers. However, a correspondence did emerge in the FO program, where success rates decreased as off-farm income increased, similar to results of the analysis of borrower progress. Thus, if off-farm income has any impact, it appears to exert itself through its negative impact on the borrowers attention to the farm business. Success of the farm business may frequently require complete attention to the farm enterprise.

### Age at Time of First Loan

Evans found that successful borrowers tended to be younger, less experienced and have smaller households than unsuccessful borrowers. Success rates tend to be higher for young borrowers (tables 77 and 78). Thus, in spite of the tendency of younger borrowers to experience a higher incidence of loss in real net worth they have higher average levels of progress (tables 58 and 59), and are most likely to be successful.

### Level of Formal Education

Evans also found that successful borrowers were slightly better educated, with 60 percent having a high school education compared to 46 percent for unsuccessful borrowers. However, he did not consider any of these associations strong enough to be significant.

In both loan programs, borrowers with a high school education had a distinct advantage compared to those with an elementary education. However, additional college level education did not enhance success rates.

These results corresponded to the influence of education on borrower progress, as a high school education was also associated with the best financial progress. Again, the degree of adverse selection that occurs among college graduates likely explains at least part of the lack of a positive influence from higher education.

### Household Size at Time of Application

In the OL program, success rates differed minimally between different household size categories. The highest success rate occurred with a household of four to six persons, corresponding to the household size associated with the greatest borrower progress.

Among FO borrowers, the influence of household size on borrower success also corresponded to that of household size on borrower progress. A household of one to three persons achieved the highest rates of both borrower progress and success.

Table 77. RELATIONSHIP BETWEEN PERSONAL FACTORS AND SUCCESS BORROWERS EXITING FmHA OPERATING LOAN PROGRAMS, 1977

	Success Rate (%)
<u>Beginning Age</u>	
Less than 35 years	82
35 to 54 years	75
55 years and over	69
<u>Formal Education</u>	
Elementary	59
High School	85
College	85
<u>Beginning Household Size</u>	
1 to 3 persons	78
4 to 6 persons	80
7 or more persons	76
<u>Agricultural Education</u>	
None	75
High School Vo-Ag	89
Young Farmer Program	65
College/Technical College	78
<u>Pre-Loan Farm Experience</u>	
1 to 5 years	84
6 to 10 years	61
11 or more years	80
<u>Type of Pre-Loan Experience<sup>a/</sup></u>	
School Years <sup>b/</sup>	78
Working Experience <sup>c/</sup>	83
Full Management	77

a/ Highest level achieved.

b/ Worked on a farm while at high school and/or grew up on a farm.

c/ Worked on a farm after high school.

Thus, all other things being equal, smaller households seem more desirable than large, particularly in the FO program. It appears that the lower family living requirement of the smaller family more than offsets the value of added labor (on- or off-farm) that large families provide. There may also be a correlation between age and family size in that younger operators, who are more likely to be successful, are likely to have smaller families.

Table 78. RELATIONSHIP BETWEEN PERSONAL FACTORS AND SUCCESS BORROWERS EXITING FmHA OWNERSHIP LOAN PROGRAMS, 1977

	Success Rate (%)
<u>Beginning Age</u>	
Less than 35 years	89
35 years and over	82
<u>Formal Education</u>	
Elementary	64
High School	86
College	80
<u>Beginning Household Size</u>	
1 to 3 persons	91
4 or more persons	84
<u>Agricultural Education</u>	
None	84
High School Vo-Ag	100
Young Farmer Program	70
College/Technical College	86
<u>Pre-Loan Farm Experience</u>	
1 to 5 years	84
6 to 10 years	60
11 or more years	96
<u>Type of Pre-Loan Experience<sup>a/</sup></u>	
School Years <sup>b/</sup>	81
Working Experience <sup>c/</sup>	92
Full Management	86

<sup>a/</sup> Highest level achieved.

<sup>b/</sup> Worked on a farm while at high school and/or grew up on a farm.

<sup>c/</sup> Worked on a farm after high school.

### Agricultural Education

Agricultural education had a modest and somewhat nonuniform influence on borrower success. On average (weighted), those with agricultural training succeeded 82 to 89 percent of the time compared to 75 to 84 percent for those without agricultural education.



For those borrowers who had obtained some form of agricultural education, high school vo-ag programs were associated with higher success rates than college level agricultural education. This could be caused either by adverse selection among college graduates or by a tendency among college graduates to push to a higher risk financial position.

### Farm Experience

The duration of pre-loan farm experience does not appear to be a criterion for success. More than five years experience had inconsistent effects on the frequency of success. This result is somewhat counter to that for borrower progress where the least experienced borrowers had the highest overall rates of financial progress (table 64). For many borrowers additional experience frequently represents additional years as a hired employee. An additional five years of such experience may effectively represent one year of experience repeated five times. Further, those who require more years to get into a position to start farming are apparently less aggressive and, thus, experience less rapid growth but their stability has an offsetting impact resulting in little net impact on success.

### Type of Pre-Loan Experience

As with borrower progress, there was a weak association between the level of pre-loan farming experience and borrower success. The highest success rates were associated with working experience rather than full management experience in both loan programs. This may reflect the result of adverse selection among established farm operators. Those less likely to succeed may be more likely to incur financial problems that make them unable to obtain credit elsewhere and, thus, eligible for FmHA financing. Such a situation, particularly early in a borrower's career, may be difficult for county supervisors to separate from financial difficulties that are truly not the fault of the borrower.

### Management Factors

For each of the management variables examined there was a very strong association between improved management and borrower success (tables 79 and 80). Perhaps the most striking result is the extent to which below average management was detrimental to borrower success. Both production rates per se and interest in improving those production rates were highly correlated with success. Clearly, "trying" to improve yields is inadequate. Actually achieving high yields is what contributes to success.

This result has serious implications for the FmHA loan analysis process. Data should be collected on each potential borrower's rates of production and interest in improving those rates of production. Although actual rates of production would be available only for those with existing farming activities, this represents a large proportion of FmHA borrowers. Those potential borrowers without a production history should be required to provide evidence of their interest in improving productivity. Attendance at extension or other meetings on production technology is one example of such interest.

The strongest relationship observed in this study is that between quality of records maintained and frequency of success (tables 79 and 80). Only slightly over half

Table 79. RELATIONSHIP BETWEEN MANAGEMENT FACTORS AND SUCCESS  
BORROWERS EXITING FmHA OPERATING LOAN PROGRAMS, 1977

Management Factor	Success Rate (%)
<u>Rate of Production</u>	
Above State Average	100
State Average	84
Below State Average	71
<u>Interest in Improving Productivity</u>	
Very Interested	100
Interested	84
Little Interest	52
<u>Farm Record System</u>	
Good to Excellent	91
Fair	88
No Records Kept	53

Table 80. RELATIONSHIP BETWEEN MANAGEMENT FACTORS AND SUCCESS  
BORROWERS EXITING FmHA OWNERSHIP LOAN PROGRAMS, 1977

Management Factor	Success Rate (%)
<u>Rate of Production</u>	
Above State Average	100
State Average	89
Below State Average	75
<u>Interest in Improving Productivity</u>	
Very Interested	100
Interested	86
Little Interest	73
<u>Farm Record System</u>	
Good to Excellent	100
Fair	87
No Records Kept	63

of those borrowers who did not have a good record system were ultimately successful. There is undoubtedly some correlation between record keeping and the rates of production achieved since records are frequently instrumental in monitoring and, thus, improving production rates.

As a government funded creditor of last resort, there is little basis for not making the maintenance of reasonable record keeping system a requirement of any FmHA loan. Success clearly requires the high production rates achievable by a modern up-to-date business. Operation of such a business requires a good record keeping system. The adoption of Coordinated Financial Statements for Agriculture is a step in the right direction in that these statements provide for an appropriate summarization and analysis of a set of records. This system does not, however, substitute for the basic record of daily financial and operating statistics which provide the data for completion of this set of statements. The Coordinated Financial Statements substitute for the Farm and Home Plan but not for the "green book", ledger or other basic record keeping system.

The results elicited in this analysis are very similar to those obtained by Evans. He too found a strong association between borrower success and management ability, especially financial management. Successful borrowers were also more receptive toward changes in farming technology.

## SUMMARY AND CONCLUSIONS

An analysis of the three major Farmers Home Administration farmer loan programs (Operating, Ownership and Emergency) was conducted using data from the borrower's original application form, Farm and Home Plans and a supplemental questionnaire completed by county supervisors. This analysis included an assessment of the characteristics of new borrowers, the attributes and performance of continuing borrowers, and the degree of success and progress achieved while receiving FmHA assistance by those who graduated or severed their relationship with FmHA for other reasons.

### New Borrowers

#### Operating and Ownership Loans

The basic conclusion that new FmHA OL and FO program borrowers "comprise a special group who apparently could not have obtained similar loans from other sources" (Herr, 1970) did not change during the decade from the late 1960s to the late 1970s. The proportion of young borrowers, under 35 years of age, increased to over half of all new borrowers. Although about one-sixth of these borrowers had less than an eighth grade education, about one-quarter had some level of college training. About half received agricultural education in high school but over one third had no agricultural education.

Borrowers in both loan programs tended to be either tenants or part owners with tenancy most common among OL borrowers. The proportion of borrowers who were tenants was basically unchanged (40 percent for OL and 25 percent for FO) between the 1960s and 1970s.

Two-thirds and three-quarters of the FO and OL borrowers, respectively, had less than \$100,000 (1977 dollars) in total assets. The relative size of farms served by FmHA increased modestly during the last decade, particularly for FO borrowers. Although resource quality was generally average or good, over one-third of the buildings, 20 percent of the machinery and about 30 percent of the land was judged to be fair or poor in quality. Contrary to the expectations of many people, excess machinery was a problem on relatively few farms.

Nearly one-half of the operators and one-third of their spouses worked off the farm. Nonfarm income accounted for half of total cash income. Total net cash income averaged \$8,000 for FO borrowers and \$10,000 (1977 dollars) for OL borrowers.

One-half and two-thirds of FO and OL borrowers, respectively, maintained fair or poor quality records. While there are no comparative statistics for prior years, this represents a very low standard of achievement for farmers who expect to improve their financial position.

The income and equity levels of new OL and FO borrowers is modest. Over 75 percent of all new borrowers had annual net cash incomes of less than \$5,000 and only about 10 percent had cash incomes above \$10,000. Over half of OL borrowers and 40 percent of FO borrowers had a total equity of less than \$25,000. Less than two percent of all new borrowers had cash incomes over \$10,000 and over \$100,000 of equity.

Surprisingly, over 25 percent of all new borrowers exhibited little interest in improving the productivity of their farm business. Given the rapid rates of technical change occurring in agriculture, this does not bode well for future borrower success.

Overestimating future income appears to be a severe problem among new borrowers. Although expected income was close to required payments, actual first year cash flow was much less than planned. Since this implies a problem for both borrower and lender, county supervisors should receive more intensive training in cash flow estimation and should be required to take a more active role in estimating future cash flows for new borrowers.

### Emergency Loans

The characteristics of new EM borrowers tend to be between those of the average U.S. farmer and the average FmHA OL and FO borrowers. This apparently occurs because of the natural sifting that occurs among potential EM borrowers. Those eligible for EM loans include all farmers who suffer natural disaster losses. Presumably the characteristics of this group would be similar to the U.S. farm population since natural disaster would be expected to strike all groups equally. Of those who might qualify for such loans some of the largest and more progressive farmers will have sufficient resources and independence that they will not apply for EM loans and others will not be able to satisfy the test for credit. Also, farmers with other FmHA loans, such as OL and FO loans, will be very likely to apply and meet the test for credit. Further, in assisting such borrowers supervisors may use EM dollars to fund operating costs and investments that cannot be funded with other program funds due to program restrictions, lending limits or unavailability of funds.

Emergency Loan borrowers were younger than average U.S. farmers. Emergency Loan borrower's general and agricultural education was similar to that of FO and OL borrowers; 15 percent had less than eight years of schooling, 25 percent had some college education, half received agricultural training in high school, and about 60 percent of those who went to college studied agriculture.

Nearly half of the EM borrowers were part owners and 30 percent were tenants. This is a lower level of ownership than occurs in average U.S. agriculture where only 29 percent were part owners and 13 percent were tenants.

Resources owned by EM borrowers average about 80 percent of the U.S. average farm. They have about twice as much acreage and investment as OL and FO borrowers, but the quality of resources used was similar for all three programs. About 13 percent had assets in excess of \$400,000.

Nearly one-third of all operators and one-third of all spouses worked off the farm. Average earnings of those working off the farm was \$7,800 for operators and \$4,900 for spouses, indicating that off farm income makes an important contribution to net income on many farms. In the year of application, which for many would be the year the disaster loss occurred, average cash income was \$13,000.

The quality of records maintained by EM borrowers was quite similar to that of borrowers in the other programs. Given the importance of records in providing effective credit supervision, raising the record keeping standards of all borrowers appears justified.

Emergency Loan borrowers tend to be highly leveraged. Only about one-third had net worth in excess of \$100,000 and a like proportion had equity of less than \$25,000. Surprisingly, 30 percent expressed little interest in improving the productivity of their businesses.

### Continuing Borrowers

The age distribution of continuing borrowers in all three loan programs tended to be similar to the U.S. farm population except for a somewhat higher incidence of 25 to 34 year olds and a lower representation of those over 55 years.

Education levels of continuing borrowers is similar to that of new borrowers. There does not appear to be an education level that results in stagnation of borrowers with FmHA as their lending source. Those with no agricultural education were somewhat more predominant among continuing borrowers than new borrowers.

The quality of resources used by continuing borrowers was only modestly better than that of new borrowers. Although some upgrading of quality would be expected over time, either little progress is being made or those who are able to upgrade quality graduate to other lenders. Similarly, the quality of records maintained appear to improve little as a result of FmHA affiliation.

Continuing FO and OL borrowers generally owned a modest level of total assets. Thirty and 52 percent, respectively, had less than \$100,000 in total assets. At the other end of the spectrum only two to four percent of these borrowers owned over

\$500,000 of assets. Clearly these programs are not providing significant credit to "wealthy" farmers. Twenty-seven percent of EM borrowers had total assets of less than \$100,000 while 11 percent had over \$500,000.

Equity levels were also generally modest relative to the amount of equity that would normally be required to capitalize a commercial farm business. Relatively few OL borrowers (17 percent) had over \$100,000 of equity and only one percent had over \$300,000 net worth. A much higher percentage (39 percent) of FO and EM borrowers (43 percent) had equity in excess of \$100,000 and 11 percent of EM borrowers had over \$300,000 equity.

Low net cash incomes predominate among FmHA borrowers. Nearly half of the borrowers in the three programs had net incomes of less than \$10,000. Total cash income on 30 to 40 percent of the farms was less than committed total debt repayment. Although high-income low-equity borrowers likely represent the best credit risk for qualifying FmHA borrowers, few continuing borrowers have these characteristics.

The number of borrowers who have the financial capacity to graduate to other sources of credit but continue with FmHA in order to continue receiving a low interest rate appears modest and is confined primarily to FO and EM borrowers. Assuming that farmers with an excess of \$20,000 net incomes and \$100,000 of equity include the pool of borrowers who could graduate, 17 percent of EM and 14 percent of FO borrowers are potential candidates. Although other farm and borrower characteristics could be expected to keep some of these people from graduating, a significant portion of these borrowers likely could be graduated. Given the high leverage position and larger size of EM borrowers and the fact that they have recently experienced a loss, the "graduation problem" is likely greatest among FO borrowers.

At the other end of the scale, 14 percent of FO and EM borrowers and 23 percent of OL borrowers were judged as marginal (may not succeed) or unlikely to succeed. While an absolute standard for an agency that is designed to finance high risk borrowers is unavailable, the number of basically unsuccessful borrowers does not appear to be unusually high.

The distribution of borrowers by level of success to date is quite uniform for borrowers who have received FmHA assistance for different periods of time. Those who remain after a long period of funding have about the same likelihood of success as new borrowers.

Over half of the continuing borrowers who had received FmHA assistance for more than five years had made essentially no improvement in net cash income during that period. Surprisingly, this is especially true for EM borrowers who should be able to make progress since their change in income is generally being measured against a year of disaster losses. Although this income measure does not include inventory increases, the frequency of limited improvement is quite high.

About one-quarter of OL and EM borrowers with six to 10 years of FmHA assistance and about 15 percent of all other borrowers with over five years assistance had achieved little or no increase in real net worth. This degree of lack of net income improvement is not out of line with either the supervisor evaluation of progress nor the frequency of net improvement that would be expected for a lender of last resort.

Combining the supervisor evaluation of borrower success and the level of improvement in income and net worth, it appears that FmHA does have a number of borrowers who have made practically no improvement in their financial position during their period of FmHA assistance. However, the number is not out of line with reasonable expectations for a lender of last resort and, more importantly, FmHA does not appear to be accumulating an unreasonably large group of "losers" who are continuing to draw on the public coffers with little chance of graduation to nongovernment credit sources.

### Graduated and Terminated Borrowers

About 68 percent of OL borrowers and 85 percent of FO borrowers were successful in that they either graduated to another lender or left farming in a financially sound position. For a lender of last resort, this rate of success for FO borrowers was quite good. The rate of success for OL borrowers, however, could only be called acceptable. Given the high risk borrower the program is designed to serve, a high rate of success would not be expected. However, even in its current imprecise state, loan evaluation procedures should allow a somewhat higher success rate. This implies that supervisors should be given more training in loan analysis and political influence on the selection process should be eliminated.

The most important factor influencing borrower success is productivity of the business or rates of production. Borrowers with below state average rates of production were much less likely to succeed and had much lower rates of net worth growth than borrowers with higher production levels.

Given the importance of production rates in eventual success, production rates should be made a part of the evaluation process for borrowers with existing farm operations. Also, credit supervision should include a focus on methods of improving production rates. Two factors that are also highly correlated to success and related to rates of production are "interest in improving productivity" and "quality of farm record keeping system maintained." Both of these factors may be influenced by the county supervisor and at least interest in improving productivity may be observed at loan analysis time, even for potential farmers who are not yet in business.

Supervisors should be able to ascertain the level of interest in improving productivity by borrowers who are currently farming by observing their frequency of attendance at extension and other meetings where methods of improving productivity are discussed and their interaction with industry representatives who may be able to provide guidance. Supervisors could also develop a list of questions for potential borrowers who are not farming to determine the applicants level of technical knowledge and their interest in improving production rates. The importance of the record keeping system to the success rate likely implies that FmHA should establish higher record keeping standards for all borrowers. Although some potential borrowers view this as an infringement upon their freedom to run their business as they see fit, a good record keeping system is a minimum standard for any business and any lender who does not require such is asking for trouble.

Borrowers with poor quality soil, building and machinery resources have low success rates compared to borrowers with either average or high quality resources.

This result has two implications for FmHA. First, financing should not be provided for borrowers desiring to start farming with low quality resources. Such financing is not in the borrowers best interest. Second, when FmHA takes resources into inventory either through voluntary conveyance or foreclosure, the quality of those resources should be carefully assessed. If quality is poor, the resources should be sold and new FmHA borrowers should not be provided funds for purchase of the resources. Although this process may slightly increase the short-run write-off losses of FmHA, long-run losses will be lower and FmHA will not be perpetuating "failure mills" for unsuspecting potential farm entrants.

The pre-loan quantity of resources controlled was not related to net worth progress and higher levels of pre-loan assets increased the probability of success only modestly. The level of assets controlled after the first FmHA loan was related to progress in that a higher level of assets resulted in higher rates of net worth growth for borrowers starting with less than \$75,000 of nonland assets. Over this same range of assets more beginning resources generally resulted in higher rates of ultimate success.

Some post high school farm experience appears to improve success rates somewhat. However, more than five years did not improve performance. Apparently a point is reached where added years of experience represents repetition rather than added capabilities or perspective.

The highest rates of increase in net worth occurred for borrowers with the highest leverage. Average annual rate of increase in real net worth was about \$5,000 per year higher for those starting with zero to 24 percent compared to 50 to 75 percent initial equity. However, this highly leveraged situation is also a high risk situation and many of these borrowers are unable to generate the cash flow necessary to make the business succeed even when significant progress is being made. The highest rate of ultimate success occurred for borrowers with a 50 to 75 percent equity position.

Off-farm employment tended to draw needed resources from the farm business and result in lower rates of net worth growth and success on FO farms. However, the results were much more mixed on OL farms where off-farm income frequently made a very positive contribution to the business.

Younger borrowers are generally more successful than those that are over 35 years of age at the time of their first FmHA loan. These young borrowers had the highest average rates of net worth growth and the lowest failure rates. This phenomenon likely results from some adverse selection among borrowers. Borrowers who obtain their first FmHA loan after they are 35 years of age likely have other, nonfinancial, reasons for not reaching that point with their farm business until they reach that age.

Borrowers from the south tended to be somewhat less successful than those from the north or west. Formal education beyond the 8th grade level contributed significantly to success. Neither asset or debt structure appear to be related to success.



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