1975

Post-entry adjustments and financial progress of 1959-60 entrants into Iowa farming

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by

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A Thesis Submitted to the

Graduate Faculty in Partial Fulfillment of

The Requirements for the Degree of

MASTER OF SCIENCE

Department: Economics

Major: Agricultural Economics

Iowa State University
Ames, Iowa

1975

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I. INTRODUCTION

A. Agricultural Adjustment and Its Effects on Beginning Farmers

It is a well documented fact that the forces of economic growth in the United States have caused large changes in the structure of the farm industry since 1940. To put it briefly: rising per capita income coupled with a low income elasticity of demand for farm products relative to that of other goods and services and a rapid improvement in farm technology have been the main forces inducing these changes. Improved technology has increased resource productivity and expanded farm output. Also, the new technology has made capital in the form of machinery and equipment and other reproducible inputs more productive relative to labor. In addition, much of the modern machinery and equipment is geared to large farms. Thus in order to maintain efficient units of production, farmers have had to continually combine more capital and land with each unit of labor.

Some of the structural changes in the farm industry brought about by its adjustment to the forces of economic growth are revealed in Table 1.

Table 1. Number of farms, acres/farm, production assets used/farm, and farm employment since 1940 in the U.S. (23)

Year	Number of farms (000)	Acres/farm	Production assets/farm ($)	Farm employment (000)
1940	6,097	158	6,158	10,979
1950	5,382	216	17,378	9,926
1959	3,703	303	40,400	7,342
1964	3,153	351	55,638	6,110

Excluding the possibility of vast changes in farm policy, it seems likely that the present rate of adoption of technology will continue, at least for the foreseeable future. Based on 1960 data, Heady (9) made the following projections for 1980: (1) three-fourths of the U.S. farm sales will be produced by only 750,000 farms, (2) per farm investment in farm real estate and machinery will double, (3) operating inputs per farm will nearly triple, and (4) farm labor will decrease by 50 percent.

Thus the number of farms and the demand for labor in agriculture have declined and continue to decline while the size of the land base and the amount of capital necessary to put together an efficient farming unit have increased and continue to increase. This trend toward fewer and larger farms has reduced the number of farming opportunities which are actually made available to potential beginning entrants in two ways. Firstly, other things being equal, the declining number of farms means that the potential for farming opportunities resulting from death, retirement, and movement off the farm of established farmers is also declining. Secondly, the increasing size of farms, a reflection of the pressure on established farmers to enlarge their operations to maintain efficiency, results in a substantial portion of the potential opportunities for beginning farmers being used for farm enlargement.

If one assumes that the number of male farm youth reaching occupational age is an indication of the demand for farming opportunities, it would seem that the demand far exceeds the supply. Joslin (12) estimated that between 1955 and 1960, about one-third of the male farm youth in Iowa reaching occupational age would have to find employment in nonfarm

occupations. He also estimated that, for the period 1970 to 1975, this proportion would increase to over one-half. According to a Nebraska study, these proportions may be even larger for other states in the North Central Region (15). These studies emphasize the effects of agricultural adjustment on the supply of and demand for farming opportunities and the keen competition that exists among established farmers and beginning entrants for needed land.

Thus the process of agricultural adjustment has made it difficult for the beginning farmer to gain control of an opportunity to begin farming, irrespective of the quality of the opportunity. Because of the large capital requirement and the large land base needed for an efficient operation, it is very unlikely that a beginning entrant will be able to start out with an efficient operation. Instead, he is likely to start on a smaller than average farm, suffer from a shortage of capital and have to go through a process of becoming established in farming. The beginning farmer then is generally faced with the difficult problem of changing an inefficient farming operation into an efficient one and, one sufficient to satisfy his social and economic needs and desires.

B. Significance of the Study

Kaldor and Jetton state, "Given the rate of operator withdrawal from farming, the rate of operator entry largely determines how rapidly present farmers can expand their land base and achieve more efficient units. It also has an important influence on the rate of adjustment in farm labor input and, therefore, on the pace at which the industry can adapt to the forces

reducing the demand for labor" (14, p. 741). Thus operator entry plays a key role in the long-run adaptation of the farm industry to the forces of economic growth in the United States. Without an understanding of the human and economic factors governing operator entry and the process by which beginning farmers become established in farming, one of the areas of greatest agricultural adjustment is ignored.

Under the current conditions of underemployment of labor and a declining demand for labor in agriculture, one might ask, "Why should there be concern about how people get into farming when the need is to move labor out of farming?"

Houthakker states, " ... if economic growth requires a movement of labor out of agriculture, then in a free economy, this can be achieved only if per capita farm income is low relative to per capita nonfarm income. The greater the mobility between the two sectors, the less economic need there is for an income differential, but in reality, mobility appears to be so small that the ratio of the two per capita sectoral incomes has often been as low as 1:2. This wide differential is partly a result of imperfect foresight. The individual farmer is in no position to detect the basic economic laws that force him out of farming" (10, p. 166).

Indeed one might add potential beginning farmers, male farm youths, are in no position to detect the basic economic laws which determine whether their best opportunity lies in farming or a nonfarm career. And, even if they were, how mobile are they? In 1962, the Committee for Economic Development (6) pointed out that fewer farm youths than any others

(a) graduate from high school, (b) enter college, and (c) graduate from college. They also noted that the United States as a whole derived only 4.3 percent of its personal income from farming, yet the nation devoted 44.5 percent of its vocational funds, exclusive of funds for home economics training, to training for agriculture. Thus they concluded that vocational education tends to perpetuate the farm problem of too many people in agriculture by holding out extraordinary opportunities for training in agriculture.

If farm youths are to rationally plan their occupations, they must have knowledge of the opportunities available and have access to the proper training. Granted that the need for knowledge of nonfarm opportunities may be equally or more important, this study is an attempt to gain knowledge about the opportunities in farming.

There is a wide variation in the characteristics of the farming opportunities made available by death, retirement, and operators quitting for nonfarm jobs. They represent different income earning opportunities and require different levels of management ability and capital inputs. Likewise, there is a wide variation in the characteristics of beginning operators and potential beginning operators. Beginning entrants differ with respect to capital position, management ability, goals, and many other aspects.

This study is concerned with the quality of various types of farming opportunities and the degree of success different types of entrants experience in farming. Knowledge of these considerations can aid farm youth in occupational planning.

C. The Problem

The general problem area which is relevant to this study is the effects of agricultural adjustment on beginning farmers. As pointed out earlier, the forces of economic growth and the resulting adjustments in the structure of the farm industry have created serious problems for beginning farmers. Buck (3) points out that, economically, beginning farmers are a vulnerable group. He states, "Any young farm family - even if fortunate enough to start off with a fair farm under reasonably good rental arrangements, a minimum of machinery and equipment, strong backs, and a will to succeed - will face problems and choices more sobering and stubborn than pests or bad weather" (3, p. 1). Among the problems and choices he mentions are: How to divide limited income between living expenses and investment in the farm business? How much credit to use, what to use it for and how fast to pay it back? How to expand-intensify the present operation, rent more land, or buy land? Should he obtain additional income from off-farm work? Should his wife work off the farm? Should he stay in farming? It is toward answering some of these questions and related questions that this study is directed.

1. Problem selected for this study

Undoubtedly, the degree to which beginning farmers are successful in solving these problems of getting established in farming and the progress which they make varies. While over time some entrants may remain in farming, others may shift to another occupation. The question to be answered is: What explains the variation in progress and why some beginning farmers shift to other occupations. Although the question

appears to be dualistic, it requires a four part answer. Those four parts are: (1) an explanation of the variation in progress of those who remained in farming, (2) an explanation of the variation in progress of those who left farming, (3) an explanation of the variation in progress between these two groups and (4) the reasons why some beginning farmers shift to another occupation.

This study is an analysis of the adjustments and financial progress made by a group of operators who began farming in Iowa in 1959 and 1960. The basis for the present study was established by an earlier study of a state-wide sample of entrants into Iowa agriculture during the two year period 1959-60 (14). The earlier study was designed to determine the characteristics of operator entry into Iowa farming, as well as establish a benchmark for this study. These beginning operators were found by taking a stratified random sample of households from the open country zone of Iowa.

D. The Objectives

The broad objectives of this study were: (1) to determine some of the adjustments made by the group since entering farming and (2) to determine the major factors associated with variations in income and net worth progress of beginning farmers in Iowa. These broad objectives are interrelated in that progress or lack of progress may have led to certain adjustments and some adjustments may have been among the factors affecting progress. To accomplish these broad objectives and to determine the extent of the interrelation between progress and adjustments, a set of more specific objectives were identified as follows: (1) to determine the shifts in employment made by the entrants during the period with particular

emphasis on the number shifting entirely to nonfarm employment, (2) to explain why some entrants left farming and others remained in farming, (3) to closely analyze the shift to nonfarm employment made by those who left farming, (4) to determine the adjustments made in the farming operations of those who remained in farming and to examine other characteristics of this group, (5) to describe the income and net worth progress made by the beginning operators during the period studied and to examine the differences in the financial progress of those who remained in farming and those who shifted to nonfarm employment, (6) to determine the major factors associated with variations in income and net worth progress of those who remained in farming and (7) to determine the major factors associated with variations in income and net worth progress of those who quit.

The findings of the study should be of some importance in answering the questions facing potential beginning farmers and farmers who are just getting started. Also, the results should be helpful to persons who are in a position to advise these two groups and to officials responsible for the formation of policy affecting the conditions of entry into agriculture.

II. REVIEW OF LITERATURE

In the past there have been relatively few studies dealing specifically with the progress of beginning farmers. Of those briefly reviewed here, all except one dealt only with farmers who were still farming at the end of the particular time period studied.

Since most beginning farmers start out on smaller than average farms and the size of the economically efficient farm is constantly increasing, it would seem that growth would be quite important to the beginning farmer. For this reason, a brief section of the following review is devoted to studies related to growth of the farm-firm.

A. Studies Related to Progress of Beginning Farmers

Writing in 1943 and based on the opinions of a group of farmers who began farming in Iowa during the period 1930 to 1938, Starrak reported that the major types of obstacles beginning farmers encountered in becoming established in farming fell into seven categories (17). Arranged in the order of difficulty they were: (1) financial, (2) production of crops and animals, (3) housing, (4) securing foundation stock, (5) obtaining good land, (6) management and (7) securing equipment. Starrak noted that without family help, obtaining land became the most difficult problem. In addition, this group ranked the factors contributing to their success in becoming established in farming as follows: (1) experience on home farm, (2) financial assistance from relatives, (3) advice of parents and others, (4) general education, (5) education in agriculture, (6) work as a farm hand and (7) own independent reading and study. Although 87 percent reported they had made satisfactory progress, no quantitative measure of

progress was given.

Beneke and Pond (2) reported the results of a study of World War II veterans who entered farming in Southeastern Minnesota prior to 1950. They found that work for wages, either farm or nonfarm, was not an important source of capital for getting started in farming, and that help from relatives was the principle source of capital used. While credit availability was found not to be a problem, 22 percent of the group used no credit. Beginning farmers had a low capital to labor ratio and a high labor to output ratio when compared to established farmers in the area. Owners had the largest net worth, but used the least operating capital and hand the lowest incomes. Partners had the lowest net worth but used the largest amount of operating capital and had the highest earnings.

Lack of available capital and credit, obtaining a farm to operate and obtaining livestock, machinery and equipment were reported to be the most frequently encountered difficulties by another group of farmers who began farming in Minnesota between 1948 and 1953 (19). Although credit was reported to be a problem by this group, most used less credit than was available to them and few reported it as a serious handicap. In this study favorable prices and family assistance were reported to be the most important factors contributing to gains in net worth made by the group. No close relationship was found between increases in net worth and size of farm, tenure, or beginning net worth. The authors concluded that those with low beginning net worth had apparently reacted to pressure to save and this offset any advantage which those with higher beginning net worths might have had. The authors also concluded that technical knowledge,

honesty, industry, and frugality might be more important than possession of capital in getting established in farming; the reasoning being that, if the beginning farmer had these qualities, he would have a good chance of acquiring needed capital.

Based on the actual experience of 182 families who began farming in Clinton County, Indiana, between 1947 and 1953, Arnold (1) found the major factors affecting gains in net worth to be price relationships at time of starting, size of business and use of credit. Again, the major problems were reported to be financing and obtaining land. However, as in the two Minnesota studies mentioned previously, credit availability did not appear to be a problem. Availability of land was the major factor determining the number who started. Ninety-eight percent started as tenants and practically all the land operated throughout the period by this group was rented. Only three percent owned real estate when starting and only five purchases were made during the period. Arnold reported that 75 percent of the group received substantial family assistance at the start and much of this was in the form of assistance in obtaining land.

The group made substantial financial progress during the 1947-1953 period of favorable price relationships. Farmers who had started prior to 1952 had been farming an average of slightly over five years by January 1, 1954. During this period total assets had increased on the average nearly twenty percent per year and net worth nearly fifty percent per year. Farmers starting in 1947 had the largest first-two-year increase in net worth. This also was a period of highly favorable price relationships. In addition, farmers starting with more productive man work units and higher capital investments had larger annual increases in net worth.

Arnold stated, "While size of business was of major importance in determining success, the amount of credit used was an important factor in determining size" (1, p. 19). Arnold also found that beginning equity and beginning capital were relatively unimportant bases for predicting financial progress. Farmers who started out with low equities made much greater relative financial progress than those who started out with high equities. The same relationship was found to exist with respect to capital. Dollar increases in capital investments were practically the same for low and high capital beginners. Arnold concluded that the smallest operators had undoubtedly kept living expenses at a nominal level in order to make such progress. However, at the end of the period, the low capital beginners were only one-half as large as the high capital beginners.

Other factors suggested by Arnold as probably being related to progress were: management ability; enterprise selection; education; background, training, and farm experience; age when starting to farm; size of family and nonfarm income.

In a 1956 Nebraska study of farmers entering between 1924 and 1949, Willsie and Ottoson (25) observed that several factors influenced capital accumulation and, therefore, the progress of farm operators. Their variables included an opportunity to save index, operator's education, size of farm and size of livestock enterprise. The savings opportunity index was based on number of years in farming and prices, costs and yields during the period farmed and was to take account of variation in financial progress due to differences in the physical and economic environment between time periods. In explaining variation in financial progress among

farmers the opportunity to save index was most important followed by size of livestock enterprise, size of farm and education in that order. Together these variables explained about 41 percent of the variation. Willsie and Ottoson also found that net worth explained twice as much of the variation in family expenditures as did family size.

In a study to determine the major factors affecting income and gains in net worth of a group of farmers who began farming in 1953 in Southern Iowa and Northern Missouri, Edmond (6) found there were many factors which were directly or indirectly related to progress and success in becoming established in farming. Factors related to land, tenure arrangements, managerial characteristics, capital, labor, off-farm income and family assistance were considered.

Edmond's major findings and conclusions were: (1) family assistance in the forms of furnishing access to land, gifts of various kinds, and making capital funds available was quite important in determining who started farming and who stayed in farming; (2) farm size, acres in crops, percentage of cropland in cash crops and wife's off-farm labor were directly related to gains in net worth; (3) although many factors affected net farm income and net total income, farm size and total capital were most important; (4) total gifts received and beginning funds earned from nonfarm labor and the family farm probably affected income through capital accumulation and larger farm size; (5) operator labor not used on the farm tended to be used in producing off-farm income with the result that lower farm income tended to be offset by higher off-farm income; (6) off-farm work by the wife added substantially to net total income; (7) willingness

to bear risks and adopt farm plans to changing conditions probably enhanced net farm income; (8) except for lower gains in net worth and more formal education, those who quit farming exhibited few differences in characteristics when compared to those who remained; (9) the major reason for quitting was dissatisfaction with farm income and (10) most moved only a short distance and were well satisfied with their new job. Edmond's study was the only one reviewed here which included entrants who later transferred to nonfarm jobs. All others were based on samples of farmers who were still farming at the end of the period studied.

B. Factors Related to Growth of the Farm-Firm

According to Renborg (in 8) the problems of growth of farm-firms can be summarized under five different headings: (1) goals of the farmer concerning his economic activity, (2) the acquisition of funds necessary for growth, (3) the acquisition of farmland, (4) the increasing risk and uncertainty connected with the growth process and (5) the farmer's lack of knowledge.

Johnson (in 8) believes that growth of the farm-firm is necessitated by the following: (1) evidence of the "price-cost squeeze", (2) the need for increased capital investment in machinery per farm, (3) increased technology as shown by machinery suitable to large farms, and (4) evidence that the average per capita income of farmers is less than the national average income.

Bailey states, "Our research traditionally emphasized resource allocation in the static firm. The allocative problem is greatly changed

when all resources are variable as assumed under firm growth. Strategies for growth exploit the higher return enterprises, net cash returns in the short run and emphasize the purchase of production services rather than ownership of resources. Necessary conditions for firm growth are: excess managerial capacity, profitable enterprises, minimum starting size, unused resources, and procurable resources" (in 7, p. 41).

Walker and Martin (24) consider a number of variables as important in the formulation of a growth model. Among these are: family consumption and aspirations, income and social security tax structures, firm-family relationships, family-farm life cycles, capital or estate transfer, business structure, yield and price variability, management, economics of size and financial institutions.

III. DEFINITION AND MEASUREMENT OF PROGRESS

Obviously before any description or analysis of progress can be carried out, it must first be made clear as to what is meant by progress; and second, a means of measuring progress must be determined. Although capital accumulation and increases in income have been implied to be measures of progress, up to this point very little has been said about the definition of progress and how it is measured. This was intentional in order that these aspects might be developed and discussed separately in this chapter.

The general definition of progress will be explained first and this will be followed by a brief review of previous measurements of progress. Next the definition of progress, as used in this study, will be discussed, followed by an explanation of the measures of progress and the procedures used to compute them. A discussion of the limitations of these measurements will then conclude this chapter.

A. General Definition and Previous Methods of Measurement

Progress by itself is a nebulous term. Even when used in reference to farmers in general or beginning farmers specifically, little of the vagueness is removed. In general, progress can only be defined in terms of the goal or goals desired to be achieved. A complete definition of progress would have to be expressed in terms of the entire set of goals which constitute the objective function of the individual or individuals for whom progress is being defined.

Even if only one individual is being considered, it would be difficult to consider the entire set of goals. For a group, it would appear to be impossible. Renborg states, "... we regard it to be a fact that the goals of farmers are not clearly expressed. It is therefore difficult to get clear and concise answers as to the more relevant goals ... goals held by farmers more often are the type 'want to be a full-time farmer', 'want to earn a reasonable income' than of the extreme economic-man type 'wish to earn as much money as I can with my ability even if it means that I have to quit farming'"(in 8, p. 58). It is doubtful that it would be any less difficult to get clear and concise answers as to the more relevant goals of nonfarmers for the same reason.

Under these conditions, the best one can do is to define progress in terms of the goal or goals which appear to be the most relevant. It must be recognized then that this definition is less than complete and, therefore, contains certain limitations.

In past studies of beginning farmers, financial progress has been by far the most common type of progress measured. Arnold (1); Edmond (6); Willsie and Ottoson (25) and Swanson, Pond and Cavert (18) all used gains in net worth to measure the financial progress made by beginning farmers. In addition, Arnold used change in total assets and change in the ratio of net equity to total assets as indicators of financial progress. He further indicated that capital accumulated in the form of cash and bonds could be used as a measure of progress toward the specific goal of land ownership.

B. Definition and Measurements Used in this Study

1. Definition of progress

Primarily two types of financial progress are used as measures of progress made by the beginning farmers in this study. These two types of financial progress are: (1) income progress based on the difference between entry year income and 1967 income and (2) net worth progress based on the difference between entry year net worth and 1967 net worth. However, to give some consideration to the effects of selected factors on income and net worth progress a number of different measures of income and net worth change were used as progress indicators. Each specific indicator of income progress is dependent on the particular measure of income change used. Likewise, each specific indicator of net worth progress is dependent on the particular measure of change in net worth used.

2. Measures of progress

Two basic procedures were used to measure income and net worth progress. One was designed to compute a measure of the absolute change in income and net worth and the other was designed to compute a measure of the rate of change in income and net worth. It was thought that the comparison of these two types of measures would help to determine the effects of entry year levels of income and net worth on progress. The measurement of income progress will be discussed first, and will be followed by a discussion of the measurement of net worth progress.

To give some consideration to the effects of gifts, source of income, and random factors on income progress, several different measures of

change in income were computed. This was done by using different pairs of income estimates. Two sets of income estimates were prepared for both years. One set included gifts and the other set excluded gifts. (Income excluding gifts is referred to as earned income.) A pair of income estimates includes a measure of the same type of income for both the entry year and 1967. The following measures of income were available to form pairs of income estimates for the farm group: (1) net farm income including gifts, (2) net farm income excluding gifts, (3) total family income including gifts and (4) total family income excluding gifts. In addition, an adjustment was made in 1967 income for unusual effects of chance events such as weather, illness, accident, etc. on net farm income. Therefore, adjusted 1967 farm income, including and excluding gifts, and adjusted total family income, including and excluding gifts, were also available for use in computing the change in income for farm respondents. The pairs of income estimates available for computing change in income for nonfarm respondents were limited to total family income, including and excluding gifts, since this group did not have farm income in 1967.

The measure of absolute change in income was computed by the formula

$$\frac{Y_2 - Y_1}{t}$$

and the measure of rate of change by

$$\left(\frac{Y_2}{Y_1}\right)^{1/t} - 1$$

where Y_1 is entry year income, Y_2 is 1967 income and "t" is equal to 1967 minus the year of entry. It can be seen that "t" adjusts for the

difference in the time period involved for 1959 and 1960 entrants. The use of "t" in this manner allows one to refer to these measures as the average annual absolute change in income and the annual rate of change in income, respectively. However, one should keep in mind that these measurements are based on only two years and have certain limitations. These will be discussed under the following heading concerning the limitations of the measurements used.

By using the appropriate pairs of income estimates, the above measures of absolute change and rate of change in net farm income including gifts and net farm income excluding gifts were computed for farm respondents. Likewise, both measures of change in total family income including gifts and total family income excluding gifts were computed for farm and nonfarm respondents.

Data were not available to allow adjustment of entry year income for random factors. For this reason, the specific types of adjusted income for 1967 were combined with the corresponding unadjusted types of entry year income to form pairs of income estimates. Using the same procedures as above and these new pairs of estimates, the two measures of change in net farm income, including and excluding gifts, and total family income, including and excluding gifts, were computed for the farm respondents. Thus an adjustment in the measure of progress for the effects of random factors on 1967 income was made for the farm group.

The same basic procedures were used to measure net worth progress as were used to measure income progress. Again, consideration was given to the effects of gifts and to the difference in the time periods involved for

1959 and 1960 entrants. In addition, since both beginning and ending net worth statements were prepared for the entry year, it was possible to measure the changes in net worth both including and excluding the entry year. It was thought that this might help to determine the importance of the first year of operation in explaining variation in progress.

The following measures of net worth were available for computing the progress of both farm and nonfarm respondents: (1) year of entry beginning net worth including gifts, (2) year of entry ending net worth including gifts, (3) year of entry ending net worth excluding gifts and (4) 1967 ending net worth including gifts. In addition, 1967 ending net worth excluding gifts was available for farm respondents. Thus by using the relevant procedures both absolute change and rates of change in net worth including gifts for the periods January 1st year of entry to December 31st 1967 and December 31st year of entry to December 31st 1967 were computed for both farm and nonfarm respondents. Both measures of change in net worth excluding gifts for the period December 31st year of entry to December 31st 1967 also were computed for farm respondents.

C. The Limitations of the Measurements Used

Almost every piece of research by necessity is an abstraction from the real world. This study does not differ in this respect and has several implicit and explicit assumptions and conditions. Those concerning the measurements of progress will be discussed here. Other limitations pertaining to the data will be discussed in the following chapter.

Implicit with the use of income and net worth gains to measure progress is the assumption that these are, in fact, relevant measures of the

progress made by the beginning farmers. There is evidence that the goals of debt reduction, land ownership, firm growth and increasing income are among the goals typically held by farmers. The latter two would seem to be especially important to the beginning farmer. Considering the close relationship between capital accumulation and these goals, it seems that gain in net worth is quite defensible as a measure of progress for those who remained in farming. Since those who quit farming were not under the same pressure to accumulate capital as those who stayed in farming, gain in income may be the more relevant measure of progress for this group.

However, the fact remains that regardless of how defensible these measures of progress are, the beginning farmers in this study very probably held other goals in addition to those relating to measures of financial progress. No attempt was made here to measure progress toward these goals or the extent to which such progress may have affected financial progress. This limitation must be kept in mind when drawing conclusions from the results of this analysis of financial progress.

Ideally, an analysis of income and net worth progress should be based on data from each year of the period studied. In this study, measurements of financial progress are based on only two years, the year of entry and 1967. If income and/or net worth were unusually low or unusually high in either of the two years because of abnormal conditions, these estimates of financial progress may be quite different from those which would have been obtained if normal conditions had existed. While some consideration was given to the effects of chance events on 1967 farm income, for the most

part it is assumed that these years were normal in terms of conditions outside the control of the beginning entrant. Furthermore, even if the assumption of normal years is valid, these measures of progress only indicate the net progress over the period; they give no indication of the fluctuations in income and net worth which occurred between the two years.

IV. EMPRICAL BASIS FOR THE STUDY

A. Obtaining the Data

1. Original sampling procedure and results

Data concerning the first year of farming were collected in 1961 for a study designed to determine the number of entrants into Iowa farming, the characteristics of beginning entrants and their initial operation, the financial results of their first year of operation and to establish a benchmark for this study. The sampling procedure used in the benchmark study and the results of this procedure will be briefly reviewed here.

The universe sampled was an area defined as the open country zone of Iowa by the 1961 Master Sample materials for the State of Iowa (14). The sample was based on a self-weighting, single-stage sample of segments drawn at random from this universe. An attempt was made to identify all persons who entered farming in either 1959 or 1960 as beginning operators in this sample of segments. The entrants had to meet the following qualifications to classify as a beginning operator: (1) they must have been operating a place satisfying the census definition of a farm the year of entry and must have been doing something other than performing the functions of a farm operator the year preceding entry and (2) they must not have farmed before the year of entry or must have disposed of their farming assets with the apparent intent of permanent withdrawal if they had farmed before the year of entry. The entrants not meeting these criteria were classified as other entrants and were used only for purposes of estimating the total number of entrants.

In the benchmark study personal interviews were held with those who met the definition of a beginning entrant. The questionnaire used in these interviews was designed to give as complete a picture as possible of the beginning operator and his first-year farming operation. It included questions on background, personal and family characteristics, financial assets and liabilities, tenure and leasing arrangements, farm resources, gifts, farm business income and expenses and nonfarm sources of family income. Sufficient information was obtained to prepare an income statement and beginning and ending net worth statements for the first year of farming.

The sampling procedure produced 206 entrants who could be classified as beginning operators in either 1959 or 1960 and, therefore, were subject to interview. Useable questionnaires were obtained from 191 of these beginning operators. Since comparisons of the characteristics of 1959 beginning operators and 1960 beginning operators showed no significant differences, the two groups were combined and treated as a single sample. The results of the sampling procedure and field work for the benchmark study are shown in Table 2.

Table 2. Original beginning operator sample and enumeration loss

	Year of entry		
	1959	1960	total
Schedules completed	88	103	191
Refusals and incomplete schedules	3	5	8
Not located (moved out of state or died)	2	3	5
Other	2	0	2
Total beginning entrants (subject to interview)	95	111	206

2. Resurvey procedure and results

The first step in the resurvey procedure was to locate the 191 beginning operators whose schedules were used in the benchmark study. This was done by first preparing a list of their entry locations by county, township, and section number and mailing address, if known. Using this list and a 1968 set of farm and ranch directories, tentative 1968 locations were obtained for slightly over half of the group. This information was separated by county and mailed to the respective County Agents with a letter asking them to verify the tentative 1968 locations. For those whom only the entry location was known, the County Agents were asked to use the information to obtain a 1968 location, if possible, or to acquire information which might help in locating these individuals. Using this procedure, combined with an additional search made by the enumerators while taking interviews, either the location or mailing address of all living respondents of the base study was learned.

In anticipation that a portion of the group would have left farming by this time, a screening sheet and two types of questionnaires, one for farm respondents and one for nonfarm respondents, were prepared. The screening sheet was designed to determine whether or not the respondent was a farm operator in 1967, and thus which questionnaire was to be used in the interview. To qualify as having been a farm operator in 1967, the person must have: (1) either farmed less than 10 acres and sold at least $250 worth of agricultural products or farmed 10 acres or more and sold at least $50 worth of agricultural products, (2) been a decision maker of the operation and (3) been paid by profits from the operation. Those who failed to meet these criteria were classified as nonfarm respondents.

In the resurvey the farm questionnaire was designed to collect the following information: (1) household characteristics; (2) farming history, which included years operated a farm, acres operated each year during the period, land purchases and sales, and investments in land improvements; (3) information gathering activities for farm prices and markets and farm practices; (4) post entry training; (5) post entry gifts and inheritances; (6) land input and tenure arrangements; (7) cropping program; (8) crop and livestock inventories and movements; (9) livestock product sales and miscellaneous farm income; (10) farm expenses; (11) machinery and equipment inventories; (12) other assets and debts; (13) nonfarm income of the respondent and his family and (14) certain policy views of the operator. Sufficient information was obtained to prepare net farm income and total family income statements and beginning and ending net worth statements for 1967.

The nonfarm questionnaire was designed to obtain information on: (1) household characteristics; (2) characteristics of the farming operation the last year of farming, including land input and tenure arrangement, farm income and nonfarm income; (3) the conditions surrounding the decision to leave farming, including reasons for quitting, nonfarm employment expectations and disposition of farming assets; (4) post entry training; (5) nonfarm work experience since leaving farming; (6) ending assets and liabilities for 1967; (7) family income; (8) gifts and inheritance since entry; and (9) satisfaction with nonfarm employment. Sufficient information was obtained to prepare an income statement and ending net worth statement for 1967.

Although most schedules were taken by personal interview, a few were obtained by mail. Interviewers, employed and supervised by the Statistical Laboratory at Iowa State University, were thoroughly briefed and then sent to personally interview each of the respondents residing in Iowa. In trying to locate respondents, it was discovered that several had moved to other states. A special questionnaire, designed to be self-administered, was mailed to these respondents accompanied by an explanation of the purposes of the study. All 185 living respondents of the base study were contacted.

In spite of the large expense and tremendous amount of time and effort foregone to acquire accurate data, a problem of obvious and apparent inconsistencies in the data of some schedules was encountered. The combination of income and net worth data, for both the beginning and ending of the year, contained an inherent consistency check. Change in net worth could not be greater than income when both earned and unearned income were accounted for. Therefore, an obvious inconsistency existed when estimated change in net worth was found to be greater than estimated net income. Also, an inconsistency was suspected when consumption appeared to be unjustifiably high or low. Considering that many farmers do not keep records, the necessity of obtaining a large quantity of detailed information, and the large effect an error in reporting a single purchase or sale can have on inventories, and thus, income and net worth, such inconsistencies were not totally unexpected.

Each one of the problem schedules was carefully analyzed to determine the probable source of the problem. The manner in which the data were

collected made possible other checks of consistency within and between specific types of data, especially the livestock and crop inventory and movement data. As the problem schedules were analyzed, a list of questions designed to acquire additional information which might solve the problem was prepared for each. The respondent was then reinterviewed according to this list. In most cases the problem was due to the respondent's forgetting a purchase or sale, or the creation or repayment of a debt, and the reinterview was sufficient to solve the problem. However, other cases were more difficult and required several additional contacts with the respondent before the problem was solved. A few cases could not be solved and the income and net worth data from these schedules were not used in the study.

As stated previously, there were 191 beginning entrants for which useable questionnaires were obtained in the benchmark study. Six of these 191 were found to be deceased, leaving 185 who were eligible for resurvey. Of these 185, 128 were identified as potential farm respondents and 57 as potential nonfarm respondents. However, useable schedules were obtained from only 119 of the potential farm respondents and 50 of the potential nonfarm respondents.

A breakdown of the enumeration loss is shown in Table 3. The useable schedules in this table include those schedules for which the income and net worth data were not useable, but other data were useable. The number of schedules useable for the income and net worth analysis is further complicated by the fact that some of the 191 schedules used in the benchmark study did not have useable income and net worth data. This point will be made clear in the following section of this chapter. Also, the refusals include two respondents who were too ill to be interviewed.

Table 3. Resurvey sample and enumeration loss

Result of contact and type of respondent	Location at time of interview: Iowa	Other state	Total
Useable schedule obtained			
Farm	119	0	119
Nonfarm	40	10	50
Total	159	10	169
Refusal			
Farm	8	1	9
Nonfarm	1	6	7
Total	9	7	16
Eligible for resurvey			
Farm	127	1	128
Nonfarm	41	16	57
Total	168	17	185
Deceased	x[a]	x	6
Benchmark sample	x	x	191

[a]Not applicable.

3. Checks for bias

The statistically ideal sample and data set for this study would consist of the same respondents in both surveys and complete information for each factor considered. It has just been shown that the benchmark sample and the resurvey sample differed in size due to death and failure to obtain useable schedules from all respondents who were eligible. In addition, not all useable schedules contained complete information for every factor considered. Thus if the results of this study are to be

considered representative of all 1959 and 1960 beginning entrants into Iowa farming, some check for bias resulting from the above mentioned discrepancies in the samples must be made.

The necessity of a check for bias resulting from the loss of respondents due to death and failure to obtain useable schedules in the resurvey was accepted without question. However, the additional variation in size due to cases of incomplete information was usually so small in relation to the size of the sample that it seemed justifiable to assume that the variation would not have a significant effect on the results. Only when the analysis required the use of both income and net worth information from both years, as it did in the regression analysis of factors affecting income and net worth progress, did the variation due to incomplete information become large enough to warrant consideration.

Out of the 169 respondents for which useable schedules were obtained in the resurvey, there were seven farm respondents and four nonfarm respondents for which income and net worth data were not complete for both years. In addition, there was one nonfarm respondent who had retired during the period and was considered to be atypical with respect to factors affecting income and net worth progress and, therefore, was excluded from the regression analysis. Thus, as shown in Table 4, the sample used in the regression analysis consisted of 112 farm respondents and 45 nonfarm respondents for a total of 157.

The three basic samples (the benchmark sample, total resurvey sample and resurvey regression sample) were each broken down by type of respondent in 1967. This was done to check on possible selectivity in each separate

Table 4. Mean value of selected factors by sample and type of respondent in 1967

Factor	Benchmark sample[a]			Total resurvey sample[b]			Resurvey regression sample[c]		
	Farm	Nonfarm	Total[d]	Farm	Nonfarm	Total	Farm	Nonfarm	Total
n[e]...	128	57	191	119	50	169	112	45	157
Mean entry age (years)	27	29	28	27	29	28	27	28	27
Mean entry year farm size (acres)	176	137	167	181	140	169	182	141	171
Mean entry year total family income (dollars)	5450	5640	5790	5460	5560	5520	5570	5330	5540
Mean entry year beginning net worth[f] (dollars)	8620	7250	8950	7510	7950	7610	7800	6500	7500

[a]Beginning entrants for which useable schedules were obtained in 1961 and which provided the basis for the benchmark study.

[b]Beginning entrants for which useable schedules were obtained in 1968 and which provided, except for the regression analysis, the basis for this study.

[c]Beginning entrants for which complete income and net worth data were obtained in both years and upon which the regression analysis in this study is based.

[d]Includes six who died and could not be classified as farm or nonfarm in 1967.

[e]Since there were five cases of incomplete entry year income information and six cases of incomplete net worth information, the actual n's for these factors vary somewhat from those given above for the benchmark and the resurvey samples.

[f]Differences between the corresponding means of the benchmark and the resurvey samples were all found nonsignificant at the five percent level.

group.

Entry age, entry year farm size, entry year total family income and entry year beginning net worth were the factors chosen for the bias check. Relative frequency distributions were constructed and the means computed for each of the four factors. Precursory examination of these distributions and means provided little evidence of any bias with respect to age, farm size and income. The means are shown in Table 4. In general, the evidence of selectivity between samples with respect to these three factors was so slight that statistical tests appeared unwarranted.

However, the differences between the samples with respect to net worth were judged to be sufficient to warrant a more refined investigation. The means for the total benchmark sample, the benchmark farm group, and the benchmark nonfarm group were paired with their corresponding means in each of the other two samples. The null hypothesis was made for each of these pairings and tested using Student's "t" test. None of the hypotheses could be rejected at the five percent level of significance.

Based on the above evidence it was concluded that the total resurvey sample and the resurvey regression sample were unbiased substitutes for the benchmark sample with respect to these selected factors. It was assumed that this held for other factors as well.

B. Limitations of the Data

It needs to be recognized that the data for this study reflect the particular environment existing in Iowa during the 1959-1967 period. This environment was considered to have two facets: one consisting of physical

conditions and the other consisting of economic conditions. In addition, each of the facets was considered to be composed of (a) factors either which were characteristic of the entrant or over which he had control and (b) conditions which were outside the control of the entrant, for example, prices and weather. These conditions would have to be taken into consideration if the results were to have application to another area or a different time period.

In explaining variation in financial progress among the entrants, attention was focused upon the characteristics of the entrant and the conditions over which he had control, and only minor consideration was given to the conditions outside his control. For the most part it was assumed that the uncontrollable factors had relatively homogeneous effects on all respondents in the study. The only exception to this assumption was the consideration given to the effects of chance events on 1967 farm income. It was believed that this assumption with respect to the economic environment was justified, since the only difference among respondents with respect to the period involved was the one year difference in time of entry. Although the physical environment, weather particularly, undoubtedly varied within the study area during the study period, it is thought that the assumption of homogeneous effects of the physical environment was not a serious limitation.

In spite of the above limitations concerning variation among entrants, some generalizations can be made concerning the relationship of the average economic conditions characteristic of this period and the average financial progress experienced by the group as a whole. This will be done in the

chapter on financial progress.

While the problem of inaccurate data is not unique to this study, the aforementioned inconsistencies in the income and net worth data make it a particularly obvious one. In spite of the effort made to uncover and correct errors of this type and others, no pretense of having eliminated all errors in the data is made. Instead, the assumption is made that the remaining errors are randomly distributed and have the effect of canceling one another.

Perhaps the most serious limitation in relation to the data was the lack of sufficient information to compute a practical measure of managerial ability. Some data were available for this purpose. But, based on the limited success of past efforts to estimate this variable, it was decided that the available data were not sufficient for this purpose. Thus a variable which would appear to be quite important in an analysis of financial progress was given only minor consideration.

C. Methods Used

1. Classifying criteria

In most cases, two-way tables were used in presenting the data since it was desired to determine whether or not selected factors were statistically independent. Although three-way classification would have been desirable in a number of instances, it was used in only a few due to low cell frequencies. Employment status and entry age are the two main criteria used to classify respondents.

For purposes of examining the differences in financial progress and other selected factors, entrants were classified by employment status and the particular factor under consideration. Classification by employment status was used primarily to examine differences between the farm and nonfarm groups, however, it was also used to examine differences within the farm group. The basis for classifying by employment status and the method used to determine the employment status groups will be presented in the following chapter.

Entry age was used as the main classifying criteria when examining the characteristics of the farm and nonfarm groups separately. Entry age was selected for two reasons. Firstly, results of the benchmark study and others have shown that a number of the factors considered in the present study are associated with age. Secondly, it was felt that age would have an affect on the kinds of adjustments made by the respondents in both groups. The age classes were selected to provide approximately equal numbers in each class.

The most common methods of analysis used were the construction of frequency distributions and observation of means. Where appropriate, chi-square was used to test for interaction between selected factors.

2. Regression analysis

To aid in explaining variation in financial progress, multiple regression analysis was used to determine the relationship between selected factors and financial progress. Use was made of a multiple linear regression model of the form $Y = B_o + B_1X_1 + B_2X_2 + \ldots + B_nX_n + \varepsilon$ where the residuals, ε, are assumed to be distributed independently of the X's, with

zero mean and variance. The assumption of normality of the ε's is required for tests of significance.

A priori one would suspect that some of the variables which would be important in explaining the variation in progress among the entrants who remained in farming would not be important in explaining the variation in progress among those who quit, and vice versa. For this reason these two groups were treated separately in the regression analysis.

For the farm group, models were constructed to explain variation in the absolute change in farm income, total family income and net worth. For the nonfarm group, models were constructed to explain the variation in the absolute change in total family income and net worth.

V. EMPLOYMENT STATUS

From the benchmark study it was learned that while some entrants started as full-time farmers, many started with a combination of farming and a part-time or full-time nonfarm job. As previously indicated, some of the entrants had shifted entirely to nonfarm work by 1967. One would suspect that other kinds of shifts in employment status had also occurred during the period. Therefore, for purposes of examining the extent to which shifts in employment status occurred and the specific types of shifts taking place, all beginning entrants were classified as either a full-time farmer or a part-time farmer in the entry year and as either a full-time farmer, part-time farmer or a nonfarm worker in 1967.

A full-time farmer is defined as a farm operator who spent less than 25 days during the year performing an income-earning activity not directly related to his farming operation. A part-time farmer is defined as a farm operator who spent 25 days or more during the year performing an income-earning activity not directly related to his farming operation. Those respondents who were employed exclusively at nonfarm income-earning activities in 1967 are designated "nonfarm". Since all respondents were farm operators in the entry year, this category does not apply to that period.

As shown in Table 5, only 41 of the beginning entrants, slightly less than one-fourth, started as full-time farmers while 128 or slightly over three-fourths started as part-time farmers. However, the majority of the beginning entrants, nearly 60 percent, changed their employment status between the entry year and 1967. By 1967, the proportion of full-time

farmers had risen to 40 percent, the proportion of part-time farmers had declined to 30 percent and the remaining 30 percent were found to be exclusively employed as nonfarm workers.

Table 5. Distribution of beginning entrants, by entry year and 1967 employment status

1967 employment status[a]	Entry year employment status: Full-time farmer No.	%	Part-time farmer No.	%	Total No.	%
Full-time farmer	25	61.0	43	33.6	68	40.2
Part-time farmer	8	19.5	43	33.6	51	30.2
Nonfarm	8	19.5	42	32.8	50	29.6
Total	41	100.0	128	100.0	169	100.0

[a]Differences by entry employment status significant at the five percent level.

Of those who started as full-time farmers, 61 percent were also full-time farmers in 1967 while 19.5 percent had become part-time farmers and the remaining 19.5 percent were nonfarm workers. In comparison, those who started as part-time farmers were equally distributed among the three employment status groups in 1967, as one-third had shifted to full-time farming and another one-third had shifted completely to nonfarm work. A chi-square test for independence indicated there was interaction between entry year and 1967 employment status. It would appear that this was primarily due to the apparent tendency for those who started as full-time farmers to be full-time farmers in 1967.

As indicated above a high proportion, 30 percent, of the beginning entrants had left farming by 1967. Considering the one year difference in the time of entry of 1959 and 1960 entrants, the average length of the period was approximately 7.5 years. Thus, the average rate of withdrawal was about 4 percent per year. Data from a study by Edmond (6) indicate a very similar rate of withdrawal for beginning entrants. Out of 175 men who entered farming in Southern Iowa and Northern Missouri in 1953, Edmond found that 17, or nearly 10 percent, were not farming in 1955. This indicates a rate of withdrawal of nearly 5 percent per year for the first two years after entry. Since one might expect a higher rate of withdrawal during the first two years after entry, the rate of withdrawal for the first two years was also computed for the entrants in this study. It was found to be just slightly over 5 percent per year, as 17 out of the 169 had quit farming during this period.

As will be shown in the discussion of financial progress, the general economic conditions were considerably more favorable for farm operators during the period in which the 1959-1960 entrants were getting started than when the 1953 entrants were getting started. Therefore, one might have expected a higher rate of withdrawal for the latter group than the former. Part of the reason why this expectation was not supported by the above estimates may be due to the shortness of the time period compared and the small number of observations on which the estimates are based. Another reason may be that the adjustments in the agricultural industry occurring between the two time periods may have increased the problems of getting started enough to off-set the more favorable conditions for farmers

in general.

It was earlier implied that the beginning entrant who becomes immediately established as a full-time farmer is more the exception than the rule. The small proportion, approximately 15 percent, of the beginning entrants who started as full-time farmers and were also full-time farmers in 1967 would seem to support this implication.

VI. COMPARISON OF SELECTED CHARACTERISTICS OF THE FARM AND NONFARM GROUPS[1]

What explains why some beginning entrants shifted to nonfarm employment while others remained in farming? It was thought that part of the answer to this question might be found by determining how the two groups compared in relation to the following: (1) personal and background characteristics at the time of entry; (2) the beginning farm operation; (3) financial position at entry and the financial results of the first year of farming; (4) the amount of family assistance received; (5) success in acquiring additional land for expansion and (6) occupational preference and other personal views. Selected characteristics related to the above attributes of the two groups and their beginning operations were compared. The results of these comparisons and their implications with respect to the question above are discussed in this chapter.

A. Personal and Background Characteristics at the Time of Entry

In comparing the personal and background characteristics of the two groups, seven factors were considered. These seven factors were: age, marital status, size of household, years of formal education, semesters of formal agricultural training, years lived on a farm and nonfarm work experience. Based on these factors, it appears that there was very little difference in the personal and background characteristics of those who remained in farming and those who quit for nonfarm jobs. Of the personal

[1]The term "farm group" is used in reference to all respondents who were farm operators in 1967, irrespective of whether they were full-time or part-time farmers.

and background characteristics examined, the two groups were found to be significantly different with respect to only one, size of household.

The group which left farming was found to have had households averaging 3.4 persons in size at the time of entry, while the households of those who remained in farming contained an average of 2.7 persons at this time. As shown in Table 6, slightly over half of the farm group's households consisted of only one or two persons, while only 40 percent of the nonfarm group's households did. Also, while there were 5 or more persons in 28 percent of the nonfarm group's households, only 12.6 percent of the farm group's households consisted of 5 or more persons.

Although the differences between the two groups were not significant, the farm group was, on the average, slightly younger and a larger portion of the farm group was single (Table 6). These two facts may partly explain the difference in the size of the households.

However, regardless of the reason for the difference in the size of households, there is reason to believe that this difference could help explain why some entrants remained in farming and others quit. Since size of household was determined by the number of persons dependent on the respondent for support, one might suspect that those with smaller households were able to save a larger portion of their income for investment in their farming operation. Therefore, given the fact that limited capital was a serious problem for many of the beginning entrants, size of household could have been important in determining who stayed in farming.

It is generally believed that one of the major obstacles for people moving out of agriculture and into nonfarm employment is the lack of

Table 6. Age, marital status, and size of household at the time of entry, by 1967 employment status

Item	Farm		Nonfarm		Total	
	No.	%	No.	%	No.	%
Age						
Under 24	53	44.5	16	32.0	69	40.8
24 - 33.9	48	40.3	20	40.0	68	40.2
34 and over	18	15.2	14	28.0	32	19.0
Total	119	100.0	50	100.0	169	100.0
Mean	27.0		28.5		27.5	
Marital status						
Single	33[a]	27.7	9	18.0	42	24.9
Married	86	72.3	41	82.0	127	75.1
Total	119	100.0	50	100.0	169	100.0
Size of household[b]						
2 or less	61	51.3	20	40.0	81	47.9
3 - 4	43	36.1	16	32.0	59	34.9
5 or more	15	12.6	14	28.0	29	17.2
Total	119	100.0	50	100.0	169	100.0
Mean	2.7		3.4		2.9	

[a]Includes one case of divorce.

[b]Difference by employment status significant at the five percent level.

education and training for a nonfarm job. Therefore, other things being equal, it might be expected that the entrants who left farming would have had more education and more nonfarm work experience than those who remained in farming. However, the evidence here indicates that this was not the case for this group of beginning entrants. Both groups were found to have had a mean of 11.2 years of formal education at the time of entry into farming; almost identical percentages of both groups had worked at nonfarm jobs before entry; and, there was essentially no difference between the two groups with respect to the mean number of months worked at nonfarm jobs before entry (Table 7).

It also might have been expected that those who remained in farming would have had more of a farm background and more formal training in agriculture than those who left farming. Again, the data lends little support to the expectation. It was found that the mean years lived on a farm before entry was approximately 20 years for both groups. And, while the farm group did average nearly one semester more of formal agricultural training than the nonfarm group (Table 7), based on a chi-square test, the hypothesis that semesters of formal agricultural training and 1967 employment status were independent could not be rejected at the five percent level of significance.

B. The Beginning Farm Operation

1. Farm size

Typically, acquisition of farm land has been a major problem for beginning entrants. Also, past studies have found size of farm to be quite important in explaining variations in the financial progress of

Table 7. Years of formal education, semesters of formal agricultural training, and nonfarm work experience prior to entry into farming, by 1967 employment status

Item	Farm		Nonfarm		Total	
	No.	%	No.	%	No.	%
Years of formal education						
8 or less	25	21.0	11	22.0	36	21.4
9 - 12	80	67.2	30	60.0	110	65.0
13 or more	14	11.8	9	18.0	23	13.6
Total	119	100.0	50	100.0	169	100.0
Mean	11.2		11.2		11.2	
Semesters of formal agricultural training[a]						
None	64	54.7	30	62.5	94	57.0
1 - 4	25	21.4	13	27.1	38	23.0
5 or more	28	23.9	5	10.4	33	20.0
Total	117	100.0	48	100.0	165	100.0
Mean	2.4		1.5		2.1	
Nonfarm work experience						
Worked at a nonfarm job before entry?						
Yes	92	77.9	39	78.0	131	78.0
No	26	22.1	11	22.0	37	22.0
Total	118	100.0	50	100.0	168	100.0
Means months worked for all respondents	68		66		67	

[a]Any semester in which the respondent was in school and in which one or more courses in agriculture were taken.

beginning entrants. For these reasons and others, the entrants starting out with the larger farms should have been in a more favorable position to continue farming. Therefore, it was not surprising when a substantial difference was found in the size of the beginning operation of the entrants who were still farming in 1967 and those who had quit. Those who were still farming started on farms averaging 181 acres in size, significantly larger than the mean of 140 acres for those who quit. While nearly 44 percent of the farm group started out on farms of 180 acres or more in size, only 18 percent of the nonfarm group did (Table 8).

2. Land tenure

Kaldor (14, p. 758) points out that, "With limited financial resources, a farmer may use all his capital for reproducible inputs (power, machinery, livestock and operating expenses) and rent as much land as he can handle efficiently, or he may use it to purchase a much smaller quantity of land with a correspondingly smaller quantity of reproducible inputs. Over a wide range of conditions, the first alternative is likely to give a higher return to his labor and owned capital." Consistent with the first of these statements, the benchmark study found that entrants who started as full owners started on farms averaging only 77 acres in size, less than half the average size of the farms operated by those who started as tenants. Therefore, it was thought that perhaps those who started as owners may have been at a disadvantage as far as continuing in farming was concerned.

However, as shown in Table 8, there is little evidence of any association between entry year land tenure and 1967 employment status.

Table 8. Entry year farm size, land tenure and business form of units operated by beginning entrants, by 1967 employment status

Item	Farm		Nonfarm		Total	
	No.	%	No.	%	No.	%
Farm size in acres[a]						
Less than 100	28	23.6	12	24.0	40	23.7
100 - 179	39	32.8	29	58.0	68	40.2
180 - 259	26	21.8	7	14.0	33	19.5
260 or more	26	21.8	2	4.0	28	16.6
Total	119	100.0	50	100.0	169	100.0
Mean	181		140		169	
Land tenure						
Full owner	23	19.3	8	16.0	31	18.3
Part owner	4	3.4	2	4.0	6	3.6
Other partner owns some or all, respondent owns none	14	11.8	2	4.0	16	9.5
Tenant	78	65.5	38	76.0	116	68.6
Total	119	100.0	50	100.0	169	100.0
Business form[a]						
Single - proprietor	90	75.6	48	96.0	138	81.7
Partnership	29	24.4	2	4.0	31	18.3
Total	119	100.0	50	100.0	169	100.0

[a]Difference by employment status significant at the five percent level.

Part of the reason why the expectation was not realized may be related to the fact that there was evidence which indicated that those who owned land placed a high value on the nonincome attributes associated with land ownership, were more frequently part-time operators, and were more dependent on nonfarm employment for income than nonowners. Also, there was evidence that those who started as owners tended to have larger beginning net worths than nonowners and, thus, limited capital may have been less of a problem for this group.

3. Business form

As shown in Table 8, a much larger proportion of those who remained in farming started farming under a partnership arrangement than those who quit, slightly over 24 percent as compared to 4 percent. Viewed in another manner, nearly 94 percent of those who started farming in partnership continued to farm compared to only 65 percent of those who started farming as single-proprietors.

There are several reasons why one might expect this type of relationship between entry year business form and 1967 employment status. Firstly, it was found that the beginning partnership units were generally much larger than the beginning single-proprietor units. Secondly, the partnership arrangement may have reduced the problem of limited financial resources. If the beginning entrant became a partner in a going concern, he may have had to supply only labor and management for the first few years, until he had had a chance to accumulate capital. Many of the beginning partnerships were going concerns and were typically father-son or other types of family arrangements. This leads directly to a third

reason. The family arrangement makes it quite easy for the father or senior partner to give financial aid in the form of gifts of livestock, machinery and equipment or its use, use of land and other operating inputs. The benchmark study found that beginning partners did tend to receive larger gifts than did single-proprietor entrants. Thus, it would seem that entry year business form could have and most likely did help to determine who stayed in farming.

4. Farm operating capital

Although no statistical tests were made, it appears that the entrants who remained in farming tended to start with a larger stock of farm operating capital and increase it more during the entry year than did those who quit. On January 1 of the year of entry, those who remained in farming owned crops, livestock, machinery and equipment having a mean value of nearly $2,300, whereas the mean value for those who quit was approximately $1,400. By December 31 of the entry year, the farm group had increased the mean value of their stock to slightly over $8,200, while the nonfarm group had increased the mean value of their stock to nearly $6,350. This indicates that the farm group increased the value of their stock of operating capital during the entry year by nearly $1,000 more than the nonfarm group did (Table 9). Thus, while the significance of the above differences with respect to operating capital may be questioned, they are at least consistent with what one might have expected.

C. Entry Financial Position and the Financial Results of the First Year of Farming

It is possible for an individual to enter farming with little land and capital, but his competitive position and relative financial success are heavily dependent on the quantity of these inputs available for his use. The financial resources available to the entrant partly determine his capacity to obtain control over land and reproducible inputs, and these, in turn, partly determine the return he receives from his labor and management (14). Thus, financial position at the time of entry and the financial results of the first year of farming may help to explain why some respondents continued to farm while others quit.

Entry financial position was measured by net worth on January 1 of the year of entry. Although net worth provides an appropriate measure of financial position on that date, it may not properly account for the total resources available to finance entry. The main reason is that it does not take full account of financial assistance received from parents or other sources.

On January 1 of the year of entry the mean net worth of the farm group was approximately $1,000 greater than that of the nonfarm group, the difference being accounted for by the fact that the farm group had on the average just under $2,200 more in total assets and slightly over $1,100 more in liabilities. The difference in total assets was largely a result of the farm group's larger stock of farm assets, as they had both a larger stock of operating capital and more invested in land and buildings. The difference in liabilities was due mainly to differences in the average

value of promissory notes and real estate mortgages (Table 9).

During the first year of farming, the farm group experienced an average increase in net worth of just over $2,600. In comparison, the nonfarm group's average increase was about half as great, averaging nearly $1,300. As was just pointed out, the farm group had increased their average value of farm operating assets by about $1,000 more during the entry year than did the nonfarm group. This appears to have accounted for the major portion of the difference in net worth change, with the remainder being due to the difference in the change in the value of farm real estate (Table 9).

If the farm group had had larger incomes than the nonfarm group, this could be a part of the explanation of the difference in net worth change. However, it was found that there was very little difference in the average earnings of the groups in the entry year. Although the farm group did have a higher mean total family income than the nonfarm group when gifts were included, the difference was not large enough to account for the entire difference in the change in net worth. Thus, it would appear that the difference in the increase in net worth may have reflected a difference in the propensity to save. As was indicated earlier, the nonfarm group did tend to have larger households; a fact which could help explain the apparent difference in the proportion of income saved and invested in farming assets.

Thus, although the differences were relatively small, it does appear that the farm group was, on the average, in a somewhat better financial position than the nonfarm group at the time of entry into farming. It

Table 9. Selected attributes of entry year net worth of beginning entrants by 1967 employment status

Item	1967 employment status: Farm (n=112) Jan. 1	Farm (n=112) Dec. 31	Farm (n=112) Change	Nonfarm (n=46) Jan. 1	Nonfarm (n=46) Dec. 31	Nonfarm (n=46) Change	Total (n=158) Jan. 1	Total (n=158) Dec. 31	Total (n=158) Change
Farm assets									
Operating assets	$2286	$8211	$5925	$1409	$6346	$4937	$2031	$7668	$5637
Land and buildings	2685	4839	2154	1054	2813	1759	2210	4249	2039
Total	4971	13050	8079	2463	9159	6696	4241	11917	7676
Nonfarm assets									
Real estate	1208	878	-330	1774	1513	-261	1373	1063	-310
Other	4350	3581	-769	4111	3289	-822	4280	3496	-784
Total	5558	4459	-1099	5885	4802	-1083	5653	4559	-1094
Total assets	10529	17509	6980	8348	13961	5613	9894	16476	6582
Liabilities									
Real estate mortage	1538	2532	994	1259	2565	1306	1457	2542	1085
Chattel mortgage	333	1243	910	354	2337	1983	339	1562	1223
Promissory notes	957	3108	2151	104	767	663	709	2426	1717
Other debt	130	434	304	104	483	379	122	448	326
Total	2958	7317	4359	1821	6152	4331	2627	6978	4351
Net worth	7571	10192	2621	6527	7809	1282	7267	9498	2231

also appears that they tended to increase this financial advantage during the entry year by investing a larger portion of their income in farming assets than the nonfarm group did.

D. Family Assistance

In view of the findings of past studies (the benchmark study included), there can be little doubt that for many beginning entrants family assistance has played an important part in the process of getting started in farming. For some, it was probably the only means by which they could hope to get started. Therefore, it was thought that family assistance also might have helped to determine who stayed in farming.

The types of family assistance received by the beginning entrants in this study varied widely. While gifts of farm operating inputs, such as machine use, interest on borrowed funds, livestock, labor, etc., were most common; gifts of cash, household goods, and other nonfarm property were not unusual. In general, estimates of the value of gifts were made by the respondents on the basis of what they would have had to pay for the item in the local market. The major exception was machine use where estimates of machine time were made by the respondent and estimates of the value were made in the laboratory based on appropriate custom rates.

The farm and nonfarm groups were compared in relation to the value of gifts received in the year of entry, in 1967, and during the entire 1959-60 to 1967 period. In all three comparisons, the mean value of gifts received by the farm group was found to be substantially larger than that received by the nonfarm group (Table 10). In addition, chi-square tests indicated there was interaction between 1967 employment status and the value of gifts

Table 10. Value of gifts received by beginning entrants in the year of entry, in 1967 and for the 1959-60 to 1967 period, by 1967 employment status

Time period	Farm		Nonfarm		Total	
	No.	%	No.	%	No.	%
In entry year						
No gifts received	37	31.6	16	32.0	53	31.7
Less than $500	32	27.4	15	30.0	47	28.1
500 - 1499	25	21.4	12	24.0	37	22.2
1500 or more	23	19.6	7	14.0	30	18.0
Total	117	100.0	50	100.0	167	100.0
Mean	945		590		840	
In 1967[a]						
No gifts received	82	69.5	47	94.0	129	76.8
Less than $250	16	13.6	0	0.0	16	9.5
250 - 999	8	6.8	2	4.0	10	6.0
1000 or more	12	10.1	1	2.0	13	7.7
Total	118	100.0	50	100.0	168	100.0
Mean	466		45		340	
Between Jan. 1 year of entry and Dec. 31 1967[a]						
No gifts received	22	18.6	15	30.0	37	22.0
Less than $500	29	24.6	11	22.0	40	23.8
500 - 2499	39	33.1	20	40.0	59	35.1
2500 or more	28	23.7	4	8.0	32	19.1
Total	118	100.0	50	100.0	168	100.0
Mean	2383		919		1947	

[a]Difference by employment status significant at the five percent level.

received in both 1967 and during the 1959-60 to 1967 period.

Thus, it appears that family assistance in the form of gifts probably helped to determine who stayed in farming; however, it is possible that the causal relationship ran both ways. There is at least one logical reason to believe that the value of gifts received by the nonfarm group may have beem smaller because they quit farming. The majority of the beginning entrants had lived on a farm most of their lives before entering farming. Thus, one might expect that the majority of their parents were farmers. This being the case, then, as long as the respondent continued to farm, it may have been a relatively simple matter for the parent to give assistance in the form of machine use, labor, use of land and other operating inputs. But, once the respondent quit farming, those items which were likely to have been the simplest for the respondent's parents to give were no longer useable by the respondent.

However, the farm group did tend to receive larger gifts in the entry year, when all respondents were farm operators and quitting could not have affected the level of gifts received. Also, the nonfarm group appeared to be in greater need of family assistance (as evidenced by their smaller mean entry net worth and mean entry farm size). Thus, it would seem that the smaller value of gifts received by the nonfarm group was most likely due to differences in either the capacity or the propensity of their families to give assistance rather than being associated with the ease with which parental help could be given after leaving farming.

Up to this point, only those forms of family assistance to which a dollar value could be assigned have been discussed. It is very likely that

the beginning entrants received other forms of family assistance to which a dollar value could not be assigned, hereafter referred to as disguised assistance. For example, the father's reputation and financial worth may have been of considerable value to the respondent in the renting of land or in obtaining a loan for which the father was a cosigner. Disguised assistance may have also been associated with a form of assistance to which a dollar value was assigned, but for which the dollar value was not a proper estimate of the real value of the assistance; for example, the gift of interest on a loan obtained from a family member. If the respondent could not have obtained a loan from any other source, just being able to obtain the loan in itself may have been much more valuable to the respondent than the actual gift of interest.

Inasmuch as disguised assistance was associated with the capacity and the propensity of the family to give assistance to the beginning entrant (as one would expect it to be), the entrants who remained in farming probably received more of this type of assistance than did those who quit, in addition to having received more gifts. What might be considered to be evidence in support of this speculation is found in the entry year net worth summary (Table 9). On December 31 of the entry year, the farm group held promissory notes having a mean value of $3,100 per respondent, whereas the mean for the nonfarm group was only $770. Although information on the source of these loans was not obtained, there was substantial evidence which indicated that many of them were obtained from family members, parents particularly.

E. Success in Acquiring Additional Land

Since the beginning entrants typically started out on smaller than average size farms and the size of the efficient farm has been constantly increasing, it would seem that the acquisition of land for expansion would have been a crucial matter for most of the beginning entrants. Furthermore, this should have been especially true for the nonfarm group since they started on farms which, on the average, were substantially smaller than those on which the farm group started. Thus, if they were also less successful in acquiring land for expansion, it could add considerably to the explanation of why they quit farming.

Obtaining a measure which would be indicative of the relative success which the two groups had in acquiring additional land was somewhat complicated for two reasons. Firstly, while an estimate of the size of farm operated in each year of the 1959-60 to 1967 period was obtained from the respondents in the farm group, information on the size of farms operated by the nonfarm respondents was obtained for only two years, the year of entry and the last year of farming.[2] Thus, while yearly changes in farm size could be computed for the farm group, any estimate of the additional land added by the nonfarm group had to be based on the difference between farm size in the entry year and the last year of farming. Secondly, there was considerable variation among the nonfarm respondents with respect to the amount of time spent in farming before shifting to a nonfarm job.

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[2]For this study, "the last year of farming" was defined to mean the last year in which a crop was planted and harvested by those respondents who quit farming.

Thus, the amount of time during which they could have acquired additional land also varied.

However, in spite of these restraints, two comparisons were made which are considered to be indications of the relative success which the two groups had in acquiring additional land. In one, the two groups are compared in relation to the number of acres added per year in farming. In the other, the mean size of farms operated by the two groups is compared by years in farming.

It was found that the farm respondents were operating farms averaging 271 acres in size during their eighth year of farming. Since they started on farms averaging 181 acres in size, this indicates that, on the average, they increased the size of their farms by approximately 11.2 acres per year during their first eight years in farming.[3] The nonfarm respondents who farmed more than one year after entry started on farms averaging 140 acres in size and were found to have operated farms averaging 172 acres in size during their last year in farming, indicating an average total addition of 32 acres per respondent.[4] On the average, this group had spent 4.4 years in farming before shifting to nonfarm jobs. Thus, those nonfarm respondents who spent more than one year in farming increased the size of their farms by an average of approximately 7.4 acres per year in farming. Therefore, it appears that, on the average, those who continued to farm

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[3]Since the maximum number of years farmed by a nonfarm respondent was eight years, acres added in the ninth year of farming by farm respondents starting in 1959 were not included in the measure.

[4]Those nonfarm respondents who farmed only one year were not included in the computations, since they could not have changed the size of their farms.

added about four acres per year more to their farms than those who quit.

In Table 11, the mean size of farms operated by the farm group is compared with the mean size of farms operated by the nonfarm respondents during their last year of farming. The comparison is made by years in farming. While the means for the farm group are based on all farm respondents, those for the nonfarm group are based only on those respondents who quit after farming the number of years indicated by the year in farming for which the comparison is made. In general, the mean size of farms operated by the farm group was substantially larger than the mean size of those operated by the nonfarm respondents. The exceptions in the third and fifth years each reflect an instance in which a respondent operating an unusually large unit in partnership quit farming (Table 11).

Table 11. Mean size of farm, by 1967 employment status and years in farming

1967 employment status	Years in farming							
	1	2	3	4	5	6	7	8
Farm (n=119)	181	212	219	218	231	246	255	271
Nonfarm[a]	128 (n=10)	125 (n=7)	245 (n=7)	156 (n=8)	215 (n=6)	142 (n=8)	x[b]	155 (n=4)
Difference	53	87	-26	62	16	104	x	116

[a]For the nonfarm group years in farming is the number of years farmed after entry and the means shown for the nonfarm group are based only on the acres operated by those who quit after each year, i.e., 128 is the mean size of farm the last year of farming for those who quit after farming one year, 120 is the mean size of farm the last year of farming for those who quit after farming two years, etc.

[b]No respondents quit after farming exactly seven years.

The mean difference by years in farming was found to be nearly 60 acres. As was pointed out earlier, the farm group had started on farms averaging 41 acres more in size than those on which the nonfarm group started. The fact that the mean difference by years in farming was larger than the difference in the entry year would again seem to indicate that the farm group had relatively more success in acquiring additional land than the nonfarm group.

If the number of acres added per year had increased with the length of time in farming, these methods of comparison would tend to over estimate the difference between the two groups, since, on the average, the farm group had spent nearly twice as much time in farming. However, as can be determined from the data in Table 11, there is no evidence of this kind of relationship between years in farming and acres added per year.

Actually, the difference is probably under estimated because of the large portion of the change in the mean size of farms operated by the nonfarm group that can be attributed to the change in the size of the farms operated by only three of the respondents. All three were operating in partnership during their last year in farming and, together, they accounted for over three-fourths of the total acres added by the nonfarm group. While it is possible that similar circumstances could have contributed to the change in the mean size of farms operated by the farm group, it seems very unlikely for two reasons. Firstly, even for partnerships, the three units referred to above were unusually large, averaging over 630 acres in size. Secondly, the effect of such unusual cases on the mean size of farms operated by the farm group would be reduced because of the much larger

number of respondents in the group.

Thus, it appears that the nonfarm group not only started on smaller farms, but also had less success in increasing the size of their farms.

F. Occupational Preference and Other Personal Views

Up to this point, the attempt to explain why some respondents quit farming while others continued to farm has largely been focused upon factors related to the potential for generating income in farming. However, it is widely recognized that occupational choices are influenced by the nonincome attributes associated with occupations as well as the income attributes. Thus, it was postulated that, in comparison to entrants who continued to farm, entrants who shifted to nonfarm employment did not attach as high a value to the nonincome attributes associated with farming and, vis-a-vis, those who continued to farm did not place as high a value on the nonincome attributes associated with nonfarm work as entrants who quit farming. Therefore, on nonincome grounds, a smaller proportion of those who quit than of those who continued to farm prefer farming. Evidence supporting these postulations was obtained in response to a set of questions on occupational preferences.

If an individual prefers job A to job B at equal levels of income, it may be assumed that he attaches a higher value to the nonincome attributes of job A than to those of job B. Each respondent was asked the following question: "If you could earn the same income per year in both farming and a nonfarm job, which would you prefer? Farming _____ Nonfarm job _____ Indifferent _____." The results were classified by 1967 employment status and are presented in Table 12.

Of the 168 beginning entrants responding to the question, 131, or 78 percent preferred farming; 35, or 20.8 percent, preferred a nonfarm job; and only 2, or 1.2 percent, indicated they were indifferent. Apparently, over three-fourths of the entrants attached a higher value to the nonincome attributes of farming than those of nonfarm employment, whereas about one-fifth valued the nonincome attributes of nonfarm employment more highly than those of farming and about one percent placed about the same value on both. The large portion of the group placing the higher value on the non-income characteristics of farming might have been expected since the majority of the entrants had spent most of their lives on a farm before entry.

The breakdown of the responses by 1967 employment status reveals large differences. Of the 119 entrants who were still farming in 1967, 103, or 86.6 percent, preferred farming at equal income and only 15, or 12.6 percent preferred nonfarm employment. In contrast, only 28, or 57.2 percent of the 49 who had shifted to nonfarm employment by 1967 preferred farming at equal incomes, while 40.8 percent preferred nonfarm employment. Thus, in comparison to the group who continued to farm, a much smaller proportion of the group which quit farming attached a higher value to the nonincome attributes associated with farming than to those associated with nonfarm employment.

In an attempt to measure the intensity of the nonincome job preferences of the beginning entrants, the entrants were asked a series of questions involving increasing income differentials between the job they preferred at equal incomes and the other type of employment. The purpose was to determine the income differential which would produce a shift in job preference, thereby obtaining an estimate of the value which the respondent placed on

Table 12. Beginning entrants' response to the question, "If you could earn the same income per year in both farming and a nonfarm job, which would you prefer?", by 1967 employment status

Job preference at equal incomes[a]	Farm		Nonfarm		Total	
	No.	%	No.	%	No.	%
Farming	103	86.6	28	57.2	131	78.0
Nonfarm job	15	12.6	20	40.8	35	20.8
Indifferent	1	.8	1	2.0	2	1.2
Total	119	100.0	49	100.0	168	100.0

[a]Difference by employment status significant at the five percent level.

the nonincome attributes associated with the job he preferred at equal incomes. The entrants who indicated they preferred farming at equal incomes were asked a series of questions in which the income in nonfarm employment increased by $500 increments up to a maximum differential of $3,000. The same questions were asked of those who indicated they preferred nonfarm employment, except that the income in farming was increased by $500 increments. The results were classified by 1967 employment status and job preference at equal incomes and are presented in Table 13.

However, the maximum income differential of $3,000 was too small to cause all beginning entrants to shift their job preferences. Of the 166 entrants indicating a job preference at equal incomes, 61, or nearly 37 percent, indicated that, at an income differential of $3,000, they would still prefer the job they selected at equal incomes. Forty-five, or 34 percent, of the entrants who preferred farming at equal incomes reported they would still prefer farming even if they could earn $3,000 more in a nonfarm job. Sixteen, or nearly 46 percent, of those who preferred nonfarm employment at equal incomes stated they would still prefer nonfarm work even if they could earn $3,000 more in farming. The median income differential needed to get entrants who preferred farming at equal incomes to shift their preferences was found to be $2,000. In contrast, the median income differential required to produce a shift in the preference of those who preferred nonfarm employment at equal incomes was found to be $3,000. Thus, it appears that the group as a whole had strong nonincome job preferences, with those of the entrants who preferred nonfarm employment at equal incomes being somewhat stronger than those of the entrants who

Table 13. Income differential required to produce a shift in job preference as reported by beginning entrants, by 1967 employment status and job preference at equal incomes

Additional income	Farm: Job preference at equal incomes				Nonfarm: Job preference at equal incomes				Total: Job preference at equal incomes			
	Farming		Nonfarm job		Farming		Nonfarm job		Farming		Nonfarm job	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
$ 500	9	8.7	3	20.0	2	7.1	1	5.0	11	8.4	4	11.4
1000	11	10.7	2	13.3	4	14.3	3	15.0	15	11.4	5	14.3
1500	10	9.7	2	13.3	9	32.2	2	10.0	19	14.5	4	11.8
2000	15	14.6	1	6.7	7	25.0	1	5.0	22	16.8	2	5.7
2500	7	6.8	0	0.0	0	0.0	1	5.0	7	5.3	1	2.9
3000	10	9.7	2	13.3	2	7.1	1	5.0	12	9.2	3	8.6
Over 3000	41	39.8	5	33.4	4	14.3	11	55.0	45	34.4	16	45.7
Total	103	100.0	15	100.0	28	100.0	20	100.0	131	100.0	35	100.0
Median	$2500		$2000		$1500		Above $3000		$2000		$3000	

preferred farming at equal incomes.

As might have been expected, nonincome preference intensities differed for entrants who continued to farm and entrants who quit farming within the job preference groups based on equal incomes.

Among entrants who preferred farming at equal incomes, those who continued to farm had stronger nonincome preferences than those who quit. The median income differential required to produce a shift in job preference from farming to nonfarm employment was $2,500 for entrants who continued to farm compared to $1,500 for entrants who quit farming. This would seem to indicate that at least half of those who quit farming even though they preferred farm work at equal incomes felt they were earning at least $1,500 more at nonfarm work than they would have been earning if they had continued to farm.

A similar difference was found among the entrants who preferred nonfarm work at equal incomes; those who quit farming had stronger nonincome job preferences than those who continued to farm. The median income differential needed to cause a shift in job preference from nonfarm employment to farming was above $3,000 for entrants who quit farming and $2,000 for entrants who continued to farm. Apparently, at least half of the entrants who continued to farm even though they preferred nonfarm work at equal incomes felt they were earning at least $2,000 more in farming than they would earn if they quit farming and took a nonfarm job.

1. Other personal views

As part of the benchmark study, each beginning entrant was asked to give the three most important reasons he decided to farm and to rank them

according to importance. It was thought that, perhaps, those who continued to farm might have had different reasons for entering farming than those who quit. Therefore, the reason designated by each respondent as being most important and all reasons given, disregarding rank, were classified by 1967 employment status. However, the classification did not reveal any significant differences between the two groups with respect to the reasons given for deciding to farm. Reasons related to working and living conditions were most frequently given by both groups as the most important reason for deciding to enter farming.

As part of the resurvey, the beginning entrants were asked a question regarding the occupational advice they would give to a typical farm boy immediately upon his graduation from high school in 1968. A classification of the results by 1967 employment status did not reveal any significant differences between the farm and nonfarm groups in relation to the occupational advice they would give. Probably the most noteworth conclusion that could be drawn from the response to the question is that the majority of the beginning entrants would advise the boy to continue his education. Twenty-nine percent reported they would advise the boy to get more education and training for a nonfarm job; 23 percent stated he should get more education and training for farming; and 8 percent reported he should just get more education, without specifying the type. Thus, 60 percent of the group as a whole reported they would advise the boy to get more education of one type or another.

VII. THE SHIFT TO NONFARM EMPLOYMENT AND RELATED CHARACTERISTICS OF THE NONFARM GROUP

The discussion in this chapter will be centered around the shift to nonfarm employment made by the nonfarm group and is composed of four sections. Firstly, some of the aspects of the last year of farming will be pointed out and briefly discussed in an attempt to develop a feel for the situation the beginning entrants were in prior to leaving farming. Secondly, the decision to leave farming will be analyzed with attention focused upon the basis for the decision and the respondents' expectations at the time of the decision. Thirdly, a rather detailed description of the group's postfarming work experience will be given to point out some of the attributes of the jobs they held after leaving farming and to shed some light on the difficulties encountered in making the shift. In conclusion, the fourth section is concerned with determining the group's satisfaction with their nonfarm employment situation in relation to their experience in farming.

Some of the findings presented in the tables in this chapter are not discussed in the text. Only those which appeared to contribute most toward accomplishing the four objectives stated above are discussed in detail. Others are merely mentioned where relevant; and, the remainder are presented for the reader's benefit. Also, in some instances a table did not serve as a valuable aid in the discussion. Therefore, it was placed in Appendix A and is only referred to in the text.

A. The Last Year of Farming

1. Number of years farmed after entry

The nonfarm group as a whole farmed an average of 3.7 years before shifting to nonfarm employment. One might have expected that a higher rate of withdrawal would have occurred in the earlier years of the period than in the later years. Although the number quitting after only one year in farming was the largest number quitting after any of the one year intervals, there was not much variation over the first 6 years of the period (Table 14). The small number quitting after 8 years of farming can be explained by the fact that only about half of the entrants, those starting in 1959, could have quit after their eighth year of farming and also have been a nonfarm respondent in 1967. The only explanation which can be offered for the fact that no respondents quit after their seventh year in farming is that it was merely a chance event.

The respondents in the younger age group were in an age range which is generally considered to be characterized by a high level of mobility. Thus, one might suspect that under the same conditions they would have more readily made the decision to leave farming and, therefore, would not have stayed in farming as long as the older entrants. But, apparently this was not the case as there was very little difference in the mean number of years farmed by the two age groups. Those under 25 years of age farmed an average of 3.6 years while those 25 years old and older farmed an average of 3.8 years (Table 14).

Table 14. Number of years 1967 nonfarm respondents farmed after entry, by entry age

Years farmed after entry	Entry age: Under 25 No.	Under 25 %	25 and over No.	25 and over %	Total No.	Total %
1	5	23.8	5	17.2	10	20.0
2	2	9.5	5	17.2	7	14.0
3	3	14.3	4	13.8	7	14.0
4	3	14.3	5	17.2	8	16.0
5	2	9.5	4	13.8	6	12.0
6	6	28.6	2	6.9	8	16.0
7	0	0	0	0	0	0
8	0	0	4	13.8	4	8.0
Total	21	100.0	29	100.0	50	100.0
Mean	3.6		3.8		3.7	

2. The farming operation

The units operated by the nonfarm respondents during their last year of farming had a mean land base of 167 acres. In comparison, the average land base of the typical Iowa farm during the 1959-60 to 1967 period was approximately 210 acres (11). As can be seen in Table 15, 78 percent of the nonfarm group operated farms with a land base of less than 180 acres during their last year of farming. Thus, over three-fourths of the group operated farms with a land base substantially smaller than the state average during their last year of farming.

Table 15. Characteristics of the farming operation of 1967 nonfarm respondents the last year of farming, by entry age

Characteristic	Entry age: Under 25		25 and over		Total	
	No.	%	No.	%	No.	%
Size of farm in acres[a]						
Less than 100	2	9.6	6	20.7	8	16.0
100-'79	12	57.1	19	65.5	31	62.0
180-259	4	19.0	4	13.8	8	16.0
400 and over	3	14.3	0	0	3	6.0
Total	21	100.0	29	100.0	50	100.0
Mean	222		128		167	
Business form						
Single proprietorship	16	76.2	28	96.6	44	88.0
Partnership	5	23.8	1	3.4	6	12.0
Total	21	100.0	29	100.0	50	100.0
Tenure						
Owner	0	0	8	27.7	8	16.0
Part-owner	0	0	2	6.8	2	4.0
Tenant	19	90.5	18	62.1	37	74.0
Other partner owner of some or all	2	9.5	1	3.4	3	6.0
Total	21	100.0	29	100.0	50	100.0
Land input						
Mean acres owned by respondent	0	0	28	21.9	16	9.6
Mean acres owned by other partner	42	18.9	8	6.2	22	13.2
Mean acres rented[b]	180	81.1	92	71.9	129	77.2
Mean total	222	100.0	128	100.0	167	100.0
Mean value/acre	$392		$452		$426	

[a] No respondent farmed between 260 and 400 acres the last year of farming.

[b] Includes acres rented by other partner and operated in partnership with respondent.

The age group under 25 years old operated farms with a much larger mean land base than did the group 25 years old and older, with the means being 222 acres and 128 acres respectively (Table 15). However, much of this difference is attributable to the large effect partnerships had on the mean land base of the younger group. The five partnership units in the younger group averaged nearly 420 acres in size, while the one in the older group had a land base of 240 acres. When the partnership units are excluded, the mean for the younger group is reduced to 150 acres as compared to a mean of 124 acres for the older group.

Although the reasons for leaving farming are to be discussed later in this chapter, the researcher recognizes that at this point the reader may wonder why the respondents associated with the large partnership units quit farming. While a precise answer cannot be given, it is thought that the following three points may contribute a great deal toward answering the question. Firstly, while the partnership units were quite large, these units usually supported two families. Secondly, just what the exact partnership arrangements were is not known. Thus, while these units may have been characterized by large returns, the respondent's share may have been relatively small. Thirdly, it was learned that at least two of the three respondents associated with the three largest partnership units had non-income reasons for leaving farming.

As might have been expected of farmers who had just started, most of the nonfarm group depended heavily on rented land during their last year of farming. Of the group as a whole, 74 percent were entirely dependent on rented land, only 16 percent were full owners, 4 percent were part owners

and the remaining 6 percent depended either wholly or in part on land owned by their partner (Table 15). Also as might have been expected, there was a substantial difference between the two age groups in relation to land tenure. Over 90 percent of the respondents under 25 years of age were entirely dependent on rented land as compared to 62 percent of those 25 years old and older. Furthermore, none of the younger group owned any of the land they operated their last year of farming, while approximately 28 percent of the older group were full owners and another 7 percent were part owners.

Viewed from a slightly different approach, it was found that over three-fourths, 77 percent, of the total land operated by the group as a whole was rented, either by the respondents or their partners. An additional 13 percent was owned by partners and, only 10 percent was owned by the respondents (Table 15). Thus, it is seen that the overall ratio of rented land to owned land was approximately 3 to 1. In comparison, the land input of the typical Iowa farm of this period was composed of nearly equal portions of rented and owned land (11).

Each nonfarm respondent was asked to estimate the value of the farm assets he owned at the time he left farming. Estimates of the value of both farm operating assets and farm real estate were obtained. Based on this information, the mean value of all farm assets owned by nonfarm respondents at the time of leaving farming was estimated to be $13,310; the mean value of farm operating assets was estimated to be $7,870; and, the mean value of farm real estate was estimated to be $5,440. In comparison, the mean value of all farm assets owned by the group on Dec. 31 of the year of entry was estimated to be $9,160. This total was composed of farm operating assets

having a mean value of $6,350 and farm real estate having a mean value of $2,810. Thus, excluding the year of entry, it appears that on the average the nonfarm group made little progress towards accumulating the farm assets necessary to become established in farming. This appears to be especially true in relation to farm operating assets.

However, it should be recognized that for many of the respondents a considerable amount of time had elapsed between the last year of farming and the time at which data for the last year of farming was obtained. Thus, the accuracy of the information on farm assets owned at the time of leaving farming may be questioned. It is also possible that some respondents, in anticipation of their leaving farming, had allowed their stock of farm operating assets to dwindle during their last year of farming. Therefore, the estimates of the value of farm operating assets owned at the time of leaving farming may not fully reflect the extent to which operating assets were accumulated during the time the respondent was in farming.

3. Nonfarm work

Of the 50 respondents in the nonfarm group, 25, or 50 percent, reported they had worked at nonfarm jobs during their last year of farming. In general, those who worked at nonfarm jobs did so quite extensively. For the 20 respondents reporting this information, the mean number of weeks worked at nonfarm jobs was 39; and, at least 12 of these 20, or 60 percent, held full-time nonfarm jobs. Also based on the number reporting, the weekly earnings from primary nonfarm jobs were found to range from less than $50 to more than $150 and to average $108. Apparently most of those holding nonfarm jobs had found nonfarm employment within easy commuting distance,

as the mean distance traveled to the job was only 9 miles (Table 16).

In the benchmark study, it was found that older entrants were more likely to have worked at nonfarm jobs during the entry year than younger entrants. Apparently this was also true during the last year of farming. Twenty, or approximately 72 percent, of those 25 years old and older reported they had worked at nonfarm jobs during their last year of farming compared to only 5, or about 24 percent, of those under 25 years of age. The data also seem to indicate that the older entrants spent more time at nonfarm jobs, had higher weekly earnings, and traveled shorter distances to work than the younger entrants did. However, the differences were not extremely large and the number of respondents on which the estimates were based was too small for statistical analysis.

The fact that only 50 percent of the nonfarm group reported they had worked at nonfarm jobs during their last year of farming might be taken as an indication that the other 50 percent of the group were full-time farmers at the time they quit. Although possible, such a high proportion of full-time farmers would seem somewhat puzzling in light of the fact that only 16 percent started as full-time farmers. However, in the benchmark study, it was found that beginning entrants quite often worked on other farms for wages during the entry year. Thus, it would not seem unlikely that at least part of the 50 percent who did not work at nonfarm jobs during their last year of farming did work for wages on other farms; and, therefore, were not really full-time farmers.

Table 16. Selected characteristics of nonfarm work last year of farming of 1967 nonfarm respondents, by entry age

Characteristic	Entry age: Under 25		25 and over[a]		Total	
	No.	%	No.	%	No.	%
Weeks worked at nonfarm jobs						
1-26	2	40.0	4	26.7	6	30.0
26-51	1	20.0	1	6.7	2	10.0
52	2	40.0	10	66.7	12	60.0
Total	5	100.0	15	100.0	20	100.0
Mean	32		42		39	
No nonfarm job	16		9		25	
Weekly earnings from primary nonfarm job (dollars)						
Under 50	1	20.0	1	6.7	2	10.0
50-99	1	20.0	7	46.7	8	40.0
100-149	2	40.0	3	20.0	5	25.5
150 and over	1	20.0	4	26.7	5	25.0
Total	5	100.0	15	100.0	20	100.0
Mean	$97		$112		$108	
One-way commuting distance to primary nonfarm job (miles)						
Under 10	2	40.0	13	65.0	15	60.0
10-19	1	20.0	5	25.0	6	24.0
20 and over	2	40.0	2	10.0	4	16.0
Total	5	100.0	20	100.0	25	100.0
Mean	12		8		9	

[a]There were 20 respondents in the 25 years old or older age group who did nonfarm work their last year of farming but 5 did not give complete information on weeks worked or weekly earnings.

4. Income during the last year of farming

To obtain an estimate of each respondent's gross farm income during his last year of farming, each respondent was asked to select from a series of intervals the one which contained the total value of all farm products he sold during his last year of farming. The lowest interval in the series was "less than $1,250" and the highest interval was "$20,000 or more". A similar procedure was used to obtain an estimate of each respondent's net cash income from farming. The lowest interval in the series used to obtain this estimate was "less than $250" and the highest interval was "$8,000 or more". Based on the response to these inquiries and under the assumption of uniform distributions within intervals, the median gross farm income was estimated to be $6,153 and the median net cash income from farming was estimated to be $2,000 for the group as a whole. However, the range of response was from the highest to the lowest intervals for both gross and net cash farm income. Thus, there was apparently wide variation in the level of farm income within the group during the last year of farming.

Consistent with the inverse relationship of farm size and age, gross and net cash income from farming also were inversely associated with age. The median gross farm income for the younger age group (under 25) was estimated to be $8,000 compared to $5,375 for the older age group (25 and older). For net cash income, the median values were estimated to be $2,750 and $1,500, respectively (Appendix A, Table 53).

Based on the number of cases of complete information, the average income from the respondent's nonfarm work during the last year of farming

was estimated to be $1,861 for the group as a whole. While farm income in the last year of farming was found to be inversely associated with age, the respondent's average nonfarm labor income was directly associated with age. Average nonfarm labor income for those under 25 years of age was estimated to be $729 compared to $2,815 for those 25 years old and older. This difference reflects both the younger age group's lower earnings per respondent holding a nonfarm job and the fact that a smaller proportion of the younger group held nonfarm jobs.

It was also found that 30 percent of the nonfarm group had wives who worked at nonfarm jobs during the last year of farming. Again based on the number of cases of complete information, the average income per respondent earned by the wives working at nonfarm jobs was estimated to be $763. Primarily because a larger percentage of the wives in the older age group worked at nonfarm jobs during the last year of farming, this variable was also directly associated with the age of the respondent.[5]

For the nonfarm group as a whole, the mean entry year value of total farm receipts was found to be $8,165 and that of net farm income was found to be $2,576. Direct comparison of these estimates for the entry year farm income with the estimates of farm income during the last year of farming would indicate that the group had both lower gross and lower net farm incomes in the last year of farming than in the entry year. However, in evaluating this comparison, it must be recognized that the entry year and

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[5]For more information on the nonfarm labor income of the respondents and their wives during the last year of farming see Table 54 in Appendix A.

the last year of farming estimates differed in two respects which effect the reliability of the comparison.

One is the fact that median values were used for the estimates of income in the last year of farming while mean values were used for the entry year. An examination of the distributions of the individual estimates of both gross and net cash farm income during the last year of farming revealed they were positively skewed. Thus, the means of these distributions would have been larger than the median values which were used in the comparisons.

The other is the fact that the estimates of entry year farm income were made on an accrual basis while the estimates obtained for the last year of farming were estimates of cash income. Normally, one would expect the estimation of farm income on a cash basis to result in a smaller value than the estimation on an accrual basis. However, as mentioned previously, the anticipation of leaving farming may have had a considerable negative effect on the inventory of farm operating capital (livestock, crops, machinery and equipment) during the last year of farming. To what extent this may have influenced the estimates of cash income from farming is not known, but it could have had a substantial positive effect.

Therefore, there is some question as to whether or not the average farm income in the last year of farming was actually smaller than the average farm income in the entry year. However, the comparison does strongly suggest that, on the average, the group made very little, if any, progress towards increasing their farm incomes during the time they were in farming. The previous findings indicating little change in farm size and value of operating capital between the entry year and the last year of

farming lend some support to this conclusion.

It was thought that perhaps the apparent lack of increase in farm income might have been offset by an increase in nonfarm labor income. However, this was apparently not true to any large extent. Based on the number of cases for which there was complete information for both the respondent and wife, the mean total nonfarm income during the last year of farming was estimated to be $2,329 for the group as a whole. In comparison, the mean for the entry year was estimated to be $2,113. Adding the former value to the median net cash income estimate for the last year of farming and the latter to the mean net farm income in the entry year provides the basis for a rough comparison of the mean total family income in the two years. The results of this procedure indicate that the average total family income in the last year of farming was roughly $4,300 as compared to a mean of $4,629 in the entry year.[6] Again, the limitations of the estimate of net farm income for the last year of farming must be recognized; however, the comparison strongly suggests that there was little difference in the average total family income in the two years.

In summary, it appears that the group as a whole was not successful in increasing their farm incomes during the time they were in farming; and, while there was some evidence of an increase in nonfarm income, the increase was apparently quite small.

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[6]Using the same procedure to estimate total family income for the two age groups indicates that the average total family income in the last year of farming was approximately $4,700 for the older age group and about $4,000 for the younger group (Appendix A, Tables 53 and 54).

B. Decision to Leave Farming

1. Basis for the decision

In an attempt to shed some light on why the decision was made to leave farming, each nonfarm respondent was asked to identify the factors he considered in making the decision and to rank them in order of importance. Table 17 shows the distribution of factors reported as most important.

Table 17. Factors considered most important by 1967 nonfarm respondents in decision to leave farming, by entry age

Factor[a]	Entry age					
	Under 25		25 and over		Total	
	No.	%	No.	%	No.	%
Level of income	7	33.3	13	46.4	20	40.8
Stability of income	4	19.1	7	25.0	11	22.5
Type of work	3	14.3	3	10.7	6	12.2
Working conditions	2	9.5	1	3.6	3	6.1
Living conditions	2	9.5	3	10.7	5	10.2
Other	3	14.3	1	3.6	4	8.2
Total	21	100.0	28	100.0	49	100.0

[a] In a test to determine whether or not the response was independent of age, level of income and stability of income were considered as one class and all other attributes were considered as another class. Based on this classification, difference by age was not significant at the five percent level.

Nearly 43 percent of the group indicated that the level of income was the most important factor considered. Another 22.5 percent reported that stability of income was most important. Thus, approximately 65 percent of the group indicated that either the level or stability of income was the most important factor they considered in their decision to leave farming. For other factors reported as most important, the percentages were: type of work, 12 percent; living conditions, 10 percent; working conditions, 6 percent and other considerations, 8 percent.

Classification of the response by age revealed that 46 percent of the older age group considered level of income to be the most important and that 25 percent considered stability of income to be the most important. In contrast, only 33 percent of the younger age group considered level of income to be most important and only 19 percent of this group considered stability of income to be the most important. Thus, over 71 percent of the older age group considered either the level or the stability of income to be most important as compared to about 52 percent of the younger group. However, the difference by age was not found to be statistically significant.

It was previously pointed out that agricultural adjustment has brought about a situation in which there is keen competition for farm land. Thus, it was thought that insecurity of tenure may have played a role in the decision of some of the nonfarm respondents to quit farming. In an attempt to shed some light on this possibility,

the respondents were asked, "At the time you decided to leave farming, could you have continued to farm the same land you farmed the last year of farming?" Nine, or 18 percent, of the group reported they could not have continued to farm the same land. Of these 9, there were 4 who reported they could have found other land to farm if they had wanted to continue to farm. The other 5 reported they could not have found other land. Thus, while it may have been a more serious problem for some respondents than others, it appears that insecurity of tenure probably had some effect on the decision to leave farming of nearly one-fifth of the respondents.

To determine approximately when the decision to leave farming was made, each nonfarm respondent was asked, "Approximately what date did you make a firm decision to leave farming and take a nonfarm job?" Based on the response to this question, it was found that, on the average, the firm decision was made approximately 41 months after entering farming. As was pointed out earlier, the group had farmed an average of 3.7 years, or roughly 44 months, before leaving farming. The comparison of the two monthly estimates indicates that, on the average, the respondents made a firm decision to leave farming approximately 3 months before the end of their last year of farming, or about the time the major crops would have been harvested. Making the same comparison for the two age groups indicates a very similar relationship for both those under 25 years of age and those 25 years old and older (Table 14 and Table 55 in Appendix A).

While one might suspect that this would be a decision which would be given serious consideration and for which some advice might be sought, most of the respondents apparently made the decision independently. In response to a question concerning whether or not the respondent consulted with anyone

in making the decision, only 10, or 20 percent, of the respondents reported that they had. As might be expected, it appears that the younger respondents were more likely to have sought advice than the older ones. While 6, or nearly 29 percent, of those under 25 years old reported they had consulted with someone, 4, or only about 14 percent, of those 25 years old and older reported they had. Of the 10 respondents who sought advice, 3 reported they had consulted with their parents, 1 with his wife's parents, 2 with their FHA supervisor, 2 with their banker, 1 with his doctor, and 1 with friends and neighbors.

2. Nonfarm employment expectations

What were the nonfarm respondents' expectations at the time they decided to leave farming in regards to finding an acceptable nonfarm job? Compared to their experience in farming, what did they expect of their new jobs in terms of the level of income, stability of income, desirability of the type of work, working conditions and living conditions? It needs to be pointed out that the data bearing on these questions were collected after the decision to leave farming was made. For most respondents, the time elapse was several years. Therefore, there is some question as to how well the data reflect the respondents' expectations at the time of his decision and to what extent the answers may have been influenced by their experience since leaving farming.

Before asking the respondents whether or not they expected difficulty in finding an acceptable nonfarm job, they were asked a series of questions concerning their investigation into nonfarm job possibilities. Thirteen respondents indicated they were already holding the nonfarm job they planned

to work at when they quit farming; and, 4 reported their plans did not immediately involve nonfarm employment. Thus, there were only 33 respondents who should have been concerned about making an investigation into nonfarm job possibilities.

Of these 33, only 13, or about 42 percent, reported they had made an investigation into employment opportunities before deciding to leave farming. Thus, somewhat surprisingly, 20, or 58 percent, of those who should have been concerned about finding a nonfarm job had apparently not made a special investigation into nonfarm job possibilities at the time they decided to quit farming. This seems to suggest that they may have been quite optimistic about their chances of finding a nonfarm job; and, apparently they were.

Ten of the 13 respondents who investigated nonfarm job possibilities before deciding to leave farming reported they had accepted or planned to accept a job offer. Thus, there was a total of 23 respondents who should have still been concerned about finding a nonfarm job at the time they decided to leave farming. Of these 23, 19, about 79 percent, reported they did not expect difficulty in finding an acceptable nonfarm job and only 4, or 21 percent, reported they expected difficulty.

Of the reasons given for not expecting difficulty, 11, or nearly one-half, were to the effect that "there was always work if you were willing to work." In addition, 5 respondents indicated they did not expect difficulty because they had experience or training for nonfarm work; 2 because they had had several job offers; and, 1 did not give a reason.

Of the 4 respondents who expected difficulty, one expected difficulty because of his age, one because of his health, one because "jobs were hard to get" and one because "employers did not want to hire men still farming." In connection with the large proportion of the group which did not expect difficulty in finding a nonfarm job, it is significant to note that the Iowa unemployment rate averaged only about 2.7 percent during the 1960-67 period (17). Thus, the response "there was always work if you were willing to work" was quite descriptive of this particular period. However, if the rate had been as high as even 8 to 10 percent, it is doubtful that the proportion not expecting difficulty would have been nearly as large.

In summary, at the time the decision to leave farming was made, 23 of the respondents (46 percent) had made definite plans for nonfarm employment, 4 (8 percent) had made other plans and 23 (46 percent) had apparently not made any definite plans. Of the latter group, most did not expect difficulty in finding an acceptable nonfarm job even though the majority of them had not made an investigation into the possibilities.

Because of the small numbers involved, it was not possible to determine whether older or younger respondents more frequently expected difficulty in finding an acceptable nonfarm job. However, there did appear to be an association between age and whether or not the respondent had definite plans at the time he decided to leave farming. Nearly 66 percent of those 25 years old and older indicated they had made definite plans by the time they decided to leave farming compared to only 38 percent of those under 25 years of age. This difference is largely attributable to the fact that a much larger proportion of the older group were already holding the job they planned to work at when they quit farming.

The response to five questions designed to determine the respondents' expectations, at the time they decided to leave farming, regarding five selected nonfarm employment attributes in relation to their experience in farming is presented in Table 18. For each attribute, the respondents were asked whether they expected conditions regarding the attribute to be better, worse or about the same in nonfarm work as in farming. Of the 240 replies to the five questions, nearly 52 percent indicated the respondents expected conditions to be better, about 12 percent indicated the respondents expected conditions to be worse, and almost 36 percent indicated the respondents expected conditions to be about the same in nonfarm work as in farming. Thus, the majority of the replies, approximately 64 percent, indicated the respondents expected conditions to be different in nonfarm work than in farming. Replies indicating optimism (conditions better in nonfarm work than in farming) were over 4 times as numerous as replies indicating pessimism (conditions worse in nonfarm work than in farming). While older respondents appeared to be somewhat more optimistic in their expectations, only small differences characterized the two age groups in terms of their overall response to the five questions (Table 18).

Of the individual attributes, the respondents were most optimistic in regards to their expectations concerning income and least optimistic in regards to their expectations concerning the desirability of the type of work. Over 77 percent of the respondents indicated they expected "stability of income" to be better in nonfarm work than in farming and nearly 71 percent reported they expected their annual income to be higher in nonfarm work than in farming. On the other hand, only about one-fourth of the

Table 18. 1967 nonfarm respondents' expectations at the time they decided to leave farming regarding selected nonfarm employment attributes in relation to their experience in farming, by entry age

Entry age and expectation	Attributes											
	Annual income[a]		Income stability[a]		Type of work[a]		Working conditions[a]		Living conditions[a]		All attributes[a]	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Under 25												
Better	13	61.9	18	85.7	3	14.3	7	33.3	8	38.1	49	46.7
Worse	3	14.3	1	4.8	7	33.3	4	19.0	4	19.0	19	18.1
Same	5	23.8	2	9.5	11	52.4	10	47.7	9	42.9	37	35.2
Total	21	100.0	21	100.0	21	100.0	21	100.0	21	100.0	105	100.0
25 and over												
Better	21	77.8	19	70.4	9	34.6	15	55.6	11	39.3	75	55.6
Worse	0	0	4	14.8	5	19.2	2	7.4	0	0	11	8.1
Same	6	22.2	4	14.8	12	46.2	10	37.0	17	60.7	49	36.3
Total	27	100.0	27	100.0	26	100.0	27	100.0	28	100.0	135	100.0
Total												
Better	34	70.9	37	77.1	12	25.5	22	45.8	19	38.8	124	51.7
Worse	3	6.2	5	10.4	12	25.5	6	12.5	4	8.2	30	12.5
Same	11	22.9	6	12.5	23	49.0	20	41.7	26	53.0	86	35.8
Total	48	100.0	48	100.0	47	100.0	48	100.0	49	100.0	240	100.0

[a]Difference by age not significant at the five percent level.

respondents expected they would find the type of work they would be doing in their nonfarm jobs more desirable than that which they were doing while farming, while an equal proportion thought they would find it less desirable (Table 18). One might have anticipated such a response in view of the findings concerning the factors considered most important in the decision to leave farming.

As with their overall expectations, only small differences appeared between the two age groups in regards to their expectations concerning individual attributes. The only noteworthy differences occurred in connection with their expectations concerning the desirability of the type of work and working conditions. The younger group indicated somewhat more pessimism and considerably less optimism in their expectations concerning these two factors than the older group (Table 18).

C. Postfarming Work Experience

What type of nonfarm work did the respondents go into after leaving farming? Did they have previous experience with this type of work? How much difficulty did they have finding and keeping an acceptable nonfarm job? Did they change jobs frequently? What were their earnings from these jobs? Where were these jobs located?

The respondents were asked a series of questions concerning their postfarming work experience in an attempt to help provide some answers to the above questions. Some of the results of these inquiries are presented here in two parts. The first part deals with the characteristics of the first and last jobs held after leaving farming. The second part presents some of the findings concerning their overall postfarming work experience

and is based on all nonfarm jobs held since leaving farming.

1. Characteristics of the first and last nonfarm jobs held

As used here, the first job held after leaving farming refers either to the first nonfarm job the respondent took after leaving farming or, in those cases where the respondent continued to work at the same job he held while farming, to the job held at the time the respondent left farming. The last job held refers to that job which the respondent held at the time he was interviewed for this study.[7]

While it appears that most occupations engaged in by nonfarm respondents after leaving farming required the respondent to possess some type of a skill or semi-skill, there was no pronounced trend towards a particular type of work. Data for the first job held indicate that nonfarm respondents were engaged in a wide variety of occupations upon leaving farming, ranging from a profession to common labor. While operative and craftsman were the two most frequently reported occupational groupings for the first job, they were only slightly ahead of the farm laborer grouping. Furthermore, there were only small differences with respect to the frequency with which farm laborer was reported and the frequency with which other occupational groupings were reported as a first job. A very similar pattern showed up when the last job held was classified by type of work (Table 19).

Perhaps the most noteworthy age-related differences were that older respondents more frequently reported first jobs in the professional-technical and manager-official categories than younger respondents; and,

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[7]There were 16 instances in which the last job held was the same job as the first job held.

Table 19. Selected attributes of the first and last nonfarm jobs held by 1967 nonfarm respondents, by entry age[a]

Attribute	First job Entry age						Last job Entry age					
	Under 25		25 and over		Total		Under 25		25 and over		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Type of work												
Professional or technical	3	14.3	2	7.1	5	10.2	4	19.0	2	7.1	6	12.2
Manager, official or proprietor, except farm	0	0.0	5	17.9	5	10.2	2	9.5	4	14.3	6	12.2
Clerical	0	0.0	1	3.5	1	2.0	0	0.0	1	3.6	1	2.0
Sales	1	4.8	4	14.3	5	10.2	2	9.5	3	10.7	5	10.2
Craftsman or foreman	5	23.8	4	14.3	9	18.4	4	19.0	7	25.0	11	22.5
Operatives	6	28.6	5	17.9	11	22.4	6	28.6	7	25.0	13	26.5
Farm laborer or foreman	3	14.3	5	17.9	8	16.3	2	9.5	3	10.7	5	10.2
Laborer, except farm	3	14.3	2	7.1	5	10.2	1	4.8	1	3.6	2	4.1
Total	21	100.0	28	100.0	49	100.0	21	100.0	28	100.0	49	100.0
Previous experience with this type of work[b]												
Yes	8	40.0	22	78.6	30	62.5	11	52.4	21	75.0	32	65.3
No	12	60.0	6	21.4	18	37.5	10	47.6	7	25.0	17	34.7
Total	20	100.0	28	100.0	48	100.0	21	100.0	28	100.0	49	100.0
Average net income/month[b]												
Less than $350	11	55.0	7	25.0	18	37.5	1	5.0	5	17.8	6	12.5
350 - 549	6	30.0	15	53.6	21	43.7	11	55.0	11	39.3	22	45.8
550 or above	3	15.0	6	21.4	9	18.8	8	40.0	12	42.9	20	41.7
Total	20	100.0	28	100.0	48	100.0	20	100.0	28	100.0	48	100.0
Mean	374		450		400		513		542		530	

[a]See text for definition of first and last jobs.

[b]Difference by age significant for the first job, but not for last job.

younger respondents more frequently reported first jobs in the craftsman and operative categories than older respondents. Jobs in the professional-technical and manager-official categories typically require more experience and/or maturity, attributes usually associated with age. Therefore, one might have expected this type of relationship between age and the type of work engaged in. The fact that this tendency did not show up in the last job held is probably a reflection of the younger respondents' gains in maturity and experience with nonfarm work over the period.

Evidence in support of the above inferences was found in response to a question asking the respondents whether or not they had had previous experience with the type of work they entered. In regards to the first job held, nearly 79 percent of the older age group reported they had had previous experience with this type of work. In contrast, only 40 percent of the younger respondents reported they had had previous experience with the type of work they undertook in the first job held. However, a substantially smaller age-associated difference in experience is indicated by the data for the last job held. While 75 percent of the older age group reported previous experience for the last job held, the percentage of the younger age group reporting previous experience increased to just over 52 percent. Furthermore, the difference was found to be statistically significant for the first job, but not for the last job (Table 19).

For the group as a whole, slightly over 62 percent reported previous experience for the first job held and about 65 percent reported previous experience for the last job held. Apparently, most of the respondents did have previous experience with the type of work they engaged in after leaving

farming. However, it is significant to note that over one-third of the respondents did not have previous experience with the type of work they undertook in either the first or the last job held (Table 19).

What might also be a reflection of the age-associated difference in experience is found in connection with the average net income per month of the respondents.[8] For the first job held, the older age group reported average monthly net incomes having a mean of $450, while the mean of the average monthly net incomes reported by the younger age group was $374. For the last job held, the means were $542 and $513, respectively. As with previous experience, the income difference by age was found to be statistically significant for the first job held, but not for the last job held (Table 19).

As might have been expected, the shift to nonfarm employment apparently entailed some type of relocation for the vast majority of the respondents. It was found that, by the time the respondents were interviewed for this study, only 6, or 12 percent, were living in the same neighborhood as they were when farming. Thus, 44, or 88 percent, of the respondents made some type of residential move after leaving farming. However, as will be shown in the following discussion, most remained in Iowa and apparently moved only short distances.

Of those responding, 36, or three-fourths, reported the first job they held after leaving farming was located in Iowa, while the other 12, or one-fourth, reported their first job was located in another state. A very

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[8]Net income means net of any expense incurred in earning the income, but before payroll and tax deductions.

similar distribution shows up for the last job (Table 20). There was no evidence indicating an association between the respondents' age and whether or not the job held, either the first or last, was located in Iowa or another state.

However, there did appear to be a rather strong inverse association between age and the population of the town in which the job was located, especially with respect to the first job held. The data indicate that older respondents were more likely to have held jobs located in small towns than were younger respondents. Based on those whose first job held was located in Iowa, over 71 percent of the older group held jobs located in towns of less than 5,000 in population compared to only about 27 percent of the younger age group. Although similar, the difference was much smaller for the last job held. While involving only a small number of respondents, an indirect relationship between age and town size is also suggested by the data for those who held jobs in other states (Table 20).

As stated above, while most respondents made some type of residential move after leaving farming, apparently most moves were of relatively short distances. Of the group as a whole, 36 percent reported their first job held after leaving farming was located within 10 miles of the land which they last farmed; another 36 percent reported it was located within 100 miles; and, the remaining 28 percent reported it to be located over 100 miles from the land which they last farmed. The mean distance was found to be about 312 miles. The median distance, however, was only 16 miles, indicating a highly asymmetrical distribution. Although the mean distance declined slightly to 277 miles and the median distance increased slightly

Table 20. Location, population, and distance from land last farmed of the town in which the first and last nonfarm jobs were held by 1967 nonfarm respondents, by entry age[a]

Item	First job Entry age						Last job Entry age					
	Under 25		25 and over		Total		Under 25		25 and over		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Location and population												
In Iowa[b]												
Under 5,000	4	26.7	15	71.4	19	52.8	7	43.8	11	50.0	18	47.4
5,000 - 19,999	8	53.3	5	23.8	13	36.1	4	25.0	6	27.3	10	26.3
20,000 - 49,999	2	13.3	1	4.8	3	8.3	1	6.2	3	13.6	4	10.5
50,000 and over	1	6.7	0	0.0	1	2.8	4	25.0	2	9.1	6	15.8
Total	15	100.0	21	100.0	36	100.0	16	100.0	22	100.0	38	100.0
In other state												
Under 50,000	2	40.0	5	71.4	7	58.3	1	20.0	4	66.7	5	45.5
50,000 and over	3	60.0	2	28.6	5	41.7	4	80.0	2	33.3	6	54.5
Total	5	100.0	7	100.0	12	100.0	5	100.0	6	100.0	11	100.0
Distance from land last farmed (miles)[c]												
Less than 10	5	25.0	12	44.5	17	36.2	3	14.3	11	40.8	14	29.2
10 - 99	9	45.0	8	29.6	17	36.2	10	47.6	10	37.0	20	41.7
100 or more	6	30.0	7	25.9	13	27.6	8	38.1	6	22.2	14	29.1
Total	20	100.0	27	100.0	47	100.0	21	100.0	27	100.0	48	100.0
Mean	355		280		312		385		194		277	
Median	23		12		16		40		15		21	

[a]See text for definition of first and last jobs.

[b]Difference by age significant at the five percent level for first job, but not for last job.

[c]Difference by age significant at the five percent level for last job, but not for first job.

to 21 miles, the distribution of the distance from the land last farmed for the last job held was very similar to that for the first job held (Table 20).

As might be expected, there was an association between age and the distance of the jobs from the land last farmed, with the association being stronger for the last job than for the first. For the first job held, the mean distance from the job location to the land last farmed was found to be 355 miles for the younger age group compared to 280 miles for the older age group, while the median distances were only 23 miles and 12 miles, respectively. For the last job held the mean distance from the job location to the land last farmed was found to have increased slightly to 385 miles for the younger age group, while that for the older age group decreased substantially to 194 miles. The median distance was found to be 40 miles for the younger age group and 15 miles for the older age group. Thus, while both median values show an increase over those for the first job held, the increase for the younger age group was much larger than that for the older age group. This would seem to indicate a tendency for the age associated differences to increase with time (Table 20).

2. Additional attributes of postfarming work experience

Most of the nonfarm respondents changed jobs at least once between the time they quit farming and the time they were interviewed for this study. Of the 49 responding, 33 or just over two-thirds of the respondents reported they had held 2 or more different jobs during this time. While about one-third of the group indicated they had held the same job during the entire period, an only slightly smaller proportion, nearly 29 percent, reported

they had held 4 or more jobs during this period. For the group as a whole, the mean number of jobs held was estimated to be approximately 2.7.

As might be expected, there were large differences associated with age. While nearly 43 percent of the older age group reported they had held only one job since leaving farming, only 19 percent of the younger age group indicated they had held only one job. Approaching it from the other end, nearly 48 percent of the younger group had held 4 or more jobs during this time compared to only 14 percent of the older age group. On the average, the younger group had held 3.3 jobs, while the older group's average number of jobs held was 2.1 (Appendix A, Table 56).

One explanation for this difference could be that the average period of time involved was longer for the younger group than for the older group. However, the average difference was only about two-tenths of a year (based on the difference in the average number of years farmed by the two groups). Furthermore, the average number of months each job was held was estimated to be about 21 months for the younger group while that of the older group was estimated to be approximately 32 months. Part of the difference also might be explained by the fact that the younger respondents were less likely to have had previous experience with the type of work they entered.

The average monthly net income, based on all primary nonfarm jobs held after leaving farming, was estimated to be $480 for the group as a whole. As was the case for the first and last jobs held, the average monthly net income for all jobs held also appeared to be associated with age. While the mean for the older group was estimated to be $508, the mean for the younger group was estimated to be $441. However, a Chi-square test did not

indicate the association to be statistically significant (Appendix A, Table 56).

D. Satisfaction with Nonfarm Employment

How satisfied were the nonfarm respondents with their nonfarm employment situation in relation to their experience in farming? In a direct approach to this question, each nonfarm respondent was asked, "All things considered, do you believe you are more satisfied, less satisfied, or about equally well satisfied with your present situation than the situation you were in when you were farming?" Of the group as a whole, 49 percent indicated they were more satisfied, nearly 35 percent reported they were about equally well satisfied and only about 16 percent believed they were less satisfied (Table 21). The fact that number believing they were more satisfied with their present situation was 3 times as large as the number believing they were less satisfied would seem to indicate that, on the average, the group had increased their satisfaction by shifting to nonfarm employment. While there was some evidence indicating that a larger proportion of the older respondents than of the younger respondents believed they were more satisfied with their present situation, a Chi-square test did not indicate the difference to be statistically significant.

In a similar question each respondent was asked if he believed his wife was more, less, or about equally well satisfied with her present situation than the one she was in when the respondent was farming. Of the 42 responding; over 64 percent believed their wives were more satisfied, 19 percent believed their wives were about equally well satisfied and only about 17 percent thought their wives were less satisfied (Table 21). Thus, as

Table 21. 1967 nonfarm respondents' response to the question, "All things considered, do you believe you are (your wife is) more satisfied, less satisfied or about equally well satisfied with your (her) present situation than the one you were (she was) in when you were farming?", by entry age

Response	Entry age: Under 25		25 and over		Total	
	No.	%	No.	%	No.	%
Respondent						
More satisfied[a]	8	38.1	16	57.1	24	49.0
Less satisfied	4	19.0	4	14.3	8	16.3
About equally satisfied	9	42.9	8	28.6	17	34.7
Total	21	100.0	28	100.0	49	100.0
Wife						
More satisfied[a]	8	50.0	19	73.1	27	64.3
Less satisfied	3	18.8	4	15.4	7	16.7
About equally satisfied	5	31.2	3	11.5	8	19.0
Total	16	100.0	26	100.0	42	100.0
Not married either at time of leaving farming or at time of interview	5		2		7	

[a]Difference by age not significant at the five percent level.

with the respondents, it appears that, on the average, the wives' satisfaction tended to increase as a result of the shift to nonfarm employment. In fact, the data seem to indicate that the wives' increase in satisfaction was greater than that of the respondents themselves. Perhaps this is a reflection of the traditional postulation that farm wives lead a restrained social life. Again, although there was some evidence of an association between the pattern of response and the respondent's age, a Chi-square test did not indicate the association to be statistically significant.

In a less direct approach toward determining the group's satisfaction with nonfarm employment, the respondents were asked to appraise their experience with six selected factors since leaving farming in relation to their experience with these factors during the period they farmed. The six factors were; level of income, level of living, level of savings, financial position, type of work and the neighborhood in which they lived. The results were classified by age and are presented in Table 22.

On the average, the overall response indicates more favorable experiences in nonfarm work than in farming. Of the 282 appraisals made in regard to the six factors, only 12 percent indicated a worse experience in nonfarm work than in farming while 50 percent indicated a better experience and the remaining 38 percent indicated a similar experience. Therefore, it would appear that, overall, the group was more satisfied with their nonfarm employment situation than with their situation in farming. The response appeared to be independent of age.

If one assumes that the factors considered above are representative of those which compose the welfare function of the group, then, based on their overall response, one might have hypothesized that about 50 percent of the group would have been more satisfied, 12 percent less satisfied and about 38 percent equally satisfied with their nonfarm situation than the one they were in while farming. It is interesting to note that these figures are quite consistent with the response of the group as a whole to the direct question of whether they were more, less, or about equally well satisfied with their present situation than the one they were in while farming (Table 21).

Table 22. 1967 nonfarm respondents' appraisal of their experience with selected factors since leaving farming in relation to their experience with these factors during the period they farmed, by entry age

Entry age and appraisal	Factor													
	Level of income		Level of living		Level of savings		Present financial position		Like type of work		Like living in present neighborhood		Total all factors	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Under 25														
Higher (better)	15	75.0	13	65.0	10	50.0	15	75.0	6	28.6	5	23.8	64	52.5
Lower (worse)	2	10.0	1	5.0	4	20.0	3	15.0	6	28.6	6	28.6	22	18.0
Same	3	15.0	6	30.0	6	30.0	2	10.0	9	42.8	10	47.6	36	29.5
Total	20	100.0	20	100.0	20	100.0	20	100.0	21	100.0	21	100.0	122	100.0
25 and over														
Higher (better)	16	61.5	14	48.3	12	44.4	14	50.0	12	44.4	10	43.5	78	48.8
Lower (worse)	2	7.7	1	3.4	2	7.4	2	7.1	4	14.8	1	4.3	12	7.5
Same	8	30.8	14	48.3	13	48.2	12	42.9	11	40.8	12	52.2	70	43.7
Total	26	100.0	29	100.0	27	100.0	28	100.0	27	100.0	23	100.0	160	100.0
Total														
Higher (better)	31	67.4	27	55.1	22	46.8	29	60.4	18	37.5	15	34.1	142	50.3
Lower (worse)	4	8.7	2	4.1	6	12.8	5	10.4	10	20.8	7	15.9	34	12.0
Same	11	23.9	20	40.8	19	40.4	14	29.2	20	41.7	22	50.0	106	37.6
Total	46	100.0	49	100.0	47	100.0	48	100.0	48	100.0	44[a]	100.0	282	100.0

[a]Excludes six cases in which respondent lived in the same neighborhood.

Of the individual factors, the respondents appeared to have had the most favorable experiences with those relating to the financial aspects of nonfarm employment. Well over half of the group appraised their nonfarm experience in terms of level of income, level of living and financial position as having been better than their experience while farming. Also, while nearly one-half of the group indicated they had been able to save more, only about 13 percent indicated their level of savings had been lower in nonfarm work than in farming. The group indicated they had had the least favorable nonfarm experiences with regard to the type of work and the neighborhood in which they lived. However, the number appraising their nonfarm experience with these two factors as having been better than their farm experience was still larger than the number giving the opposite appraisal (Table 22).

In another question the respondents were asked if they had given any thought to entering farming again; and if they had, were they now planning to return to farming. In response to the first part of the question, about 53 percent of the group reported they had given some thought to returning to farming while the other 47 percent indicated they had not given it any thought. Of the 26 respondents indicating they had given thought to entering farming again, only 3 reported they were now (at the time they were interviewed in 1968) planning to return; 4 reported they did not know whether or not they were planning to return; and, the remaining 19 reported they were not now planning to return. Thus, while slightly over half of the group indicated they had thought about returning to farming, only 3, or about 6 percent, indicated definite plans to return to farming (Table 23).

Table 23. 1967 nonfarm respondents' response to the questions, "Since you left farming have you given any thought to entering farming again? If yes, are you now planning to return to farming?", by entry age

Response	Entry age: Under 25 No.	Under 25 %	25 and over No.	25 and over %	Total No.	Total %
Thought given[a]						
Yes	13	61.9	13	46.8	26	53.1
No	8	38.1	15	53.2	23	46.9
Total	21	100.0	28	100.0	49	100.0
Planning to return?						
Yes	2	15.4	1	7.7	3	11.5
No	9	69.2	10	76.9	19	73.1
Don't know	2	15.4	2	15.4	4	15.4
Total	13	100.0	13	100.0	26	100.0

[a]Difference by age not significant at the five percent level.

VIII. SELECTED ATTRIBUTES OF THE FARM GROUP AND THEIR FARMING OPERATIONS

We have just looked at some of the postentry adjustments made by the nonfarm group. This chapter discusses some of the postentry adjustments made by the farm group, with emphasis on changes in their farming operations. In addition, some of the personal views and other attributes of the group will be examined.

A. The Farming Operation

To determine some of the adjustments made in farming operations, business form, land tenure and farm size characteristics in 1967 and the year of entry will be compared. In addition, we will consider some of the investment activities of the respondents during the period. Because changes in selected financial aspects of the farm business will be brought out indirectly in the discussion of financial progress in the following chapter, they will not be discussed here.

1. Business form

Of the 119 beginning entrants who were still farming in 1967, 100 or 84 percent were operating as single-proprietors; 15 or 12.6 percent were operating in partnership; and, the remaining 4 or 3.4 percent were operating part of their unit as a single-proprietor and part in partnership (Table 24). In comparison, only 90 or 75.6 percent of the group entered farming as single-proprietors while 29 or 24.4 percent started farming under a partnership arrangement (Table 8, page 48). Thus there appears to have been a general trend away from the partnership form of business and

Table 24. Business form and land tenure of units operated in 1967 by 1967 farm operators, by entry age

Item	Entry age: Under 25 No.	Under 25 %	25 and over No.	25 and over %	Total No.	Total %
Business form[a]						
Single-proprietorship	55	77.5	45	93.7	100	84.0
Partnership	13	18.3	2	4.2	15	12.6
Both	3	4.2	1	2.1	4	3.4
Total	71	100.0	48	100.0	119	100.0
Tenure[a]						
Full owner	8	11.3	24	50.0	32	26.9
Part owner	16	22.5	4	8.3	20	16.8
Partner owns some or all, respondent owns none	8	11.3	0	0.0	8	6.7
All land rented	39	54.9	20	41.7	59	49.6
Total	71	100.0	48	100.0	119	100.0

[a]Difference by age significant at the five percent level.

toward the single-proprietorship form.

One might have expected this type of adjustment in business form for two reasons. Firstly, as indicated earlier, the partnership arrangement may have been used to help overcome the problem of limited resources at the time of entry. However, over time the beginning partner entrant may have accumulated enough capital to become financially independent of his partner; and, in preference for the independence associated with being a single-proprietor, he may have dissolved the partnership to go into business by himself. Secondly, many of the partnerships were father-son or other types of family arrangements in which the beginning entrant's partner was considerably older than the entrant. Thus it is possible

that some of the beginning partner entrants may have become single-proprietors through the death or retirement of the senior partner.

The business form of the 1967 units was found to be associated with the age of the respondent. Respondents in the under 25 age group were more likely to have operated a farm under a partnership arrangement and less likely to have operated as a single-proprietor than those in the 25 and over age group. Over 22 percent of the under 25 age group operated at least part of their unit in partnership compared to only about 6 percent of the 25 and over age group (Table 24). A similar relationship between age and entry year business form was found in the benchmark study. Furthermore, it appears that the relationship held throughout the 1959-1960 to 1967 period as evidenced by the data in Table 57 (Appendix A).

It was found that most of the respondents who operated in partnership in 1967 were respondents who entered farming under a partnership arrangement. Therefore, it seems likely that the same factors which explain the association between age and entry business form also explain the association between age and 1967 business form.

The association between age and business form could reflect age-associated differences in personal financial resources. However, based on entry net worth and entry year business form, the benchmark study did not find evidence to support this hypothesis.

The benchmark study found that the association between age and entry business form was most likely explained by age-associated differences in the opportunity to enter farming under a partnership arrangement. Most of the entry year partnership cases involved father-son arrangements.

Because fathers of older entrants were most likely to have retired or died than those of younger entrants, the opportunity for a father-son arrangement might be expected to decrease with entrant age. Thus older entrants may have had fewer opportunities to enter into a partnership arrangement. Furthermore, lacking maturity and experience, younger entrants may have had more reason to associate themselves with an older operator (14).

2. Land tenure

In 1967, only 32 or about 27 percent of the 119 respondents in the farm group were full owners, while another 20 or nearly 17 percent owned part of the land used in their 1967 farming operations. Thus the majority of the group, just over 56 percent, did not own any of the land used in their farming operations. However, of the nonowners, there were 8, about 7 percent of the farm group as a whole, who had a partner that owned some or all of the land used in their farming operations. Therefore, there were 59 or 49.6 percent of the group who were entirely dependent on rented land in 1967 (Table 24).

In the entry year, only 23 or 19.3 percent of the group were full owners while another 4 or 3.4 percent were part owners. Of the remaining 92 who did not own any of the land used in their entry year farming operations, 14 or 11.8 percent of the group as a whole had partners who owned some or all of the land used. Thus there were 78 or 65.5 percent of the group who were entirely dependent on rented land in the entry year (Table 8, page 48).

The comparison of the entry year and 1967 data reveals that while the proportion of full owners in the group increased by only 7.6 percentage

points (from 19.3 percent to 26.9 percent), the proportion of part owners increased by 13.4 percentage points (from 3.4 percent to 16.8 percent). Thus, the proportion of the group who owned either all or part of the land they farmed increased from 22.7 percent in the entry year to 43.7 percent in 1967, or by 21 percentage points. On the other hand, the proportion of the group who were entirely dependent on rented land decreased from 65.5 percent to 49.6 percent, or by nearly 16 percentage points. While there was a substantial increase in the proportion of group who were land owners, the group as a whole was still heavily dependent on rented land in 1967.

The data in Table 58 (Appendix A) give a clearer indication of just how heavily the group depended on rented land in 1967. These data indicate that while only 49.6 percent of the group as a whole were entirely dependent on rented land, nearly 73 percent of all land used by the group in their 1967 farming operations was rented. In contrast, comparable data for the state indicate that the typical Iowa farm was composed of nearly equal proportions of rented and owned land in 1967 (11). This difference in land tenure might be expected in view of the fact that these beginning farmers were, on the average, considerably younger and had been farming only a short time in comparison to the typical Iowa farmer.

Although it was implied above that 27 percent of all land used by the group in 1967 was owned land, this figure includes land owned by partners and operated in partnership with the respondents. Actually, only about 19 percent of the total land used was owned by the respondents themselves, while 8 percent was owned by partners of the respondents.

There were large differences between the two age groups with respect to land tenure in 1967. Exactly one-half of the 25 and over age group were

full owners compared to only 11.3 percent of the under 25 age group. Furthermore, while 58.3 percent of the older group owned at least part of the land they farmed, only 33.8 percent of the younger group owned land which they farmed in 1967. However, because 11.3 percent of the younger group had partners who owned some of the land they used in 1967, only about 13 percent more of the younger group than the older group were entirely dependent on rented land (Table 24).

Apparently younger owners tended to own larger acreages than older owners. Although a much larger proportion of the 25 and over age group were land owners, the mean acres owned by this group as a whole was only slightly larger than the mean acres owned by the under 25 age group as a whole, 54.5 acres as compared to 50.8 acres (Table 58, Appendix A).

What explains the fact that older entrants were more frequently owners in 1967 than younger entrants? The age-associated difference in 1967 land tenure is due partly to the fact that older entrants more frequently started as owners, as evidenced by findings of the benchmark study, and partly to the fact that older entrants more frequently purchased land during the period, as will be shown later. It is thought that both differences are most likely due to age-associated differences in the financial resources available to purchase land and the desire to own land. Although it is not known what changes may have occurred during the period with regard to age-associated differences in the financial resources available to purchase land, the benchmark study found that entry net worth was directly associated with age and that entrants with higher net worth were more frequently owners than entrants with lower net worth.

However, the benchmark study also found evidence that there were apparently other age-associated differences in addition to entry net worth which influenced tenure. One of these differences was most likely an age-associated difference in the desire to own land. It was found that older entrants were more frequently motivated to enter farming by considerations relating to living conditions. Such conditions were more likely to be satisfied through land ownership than through land rental. Furthermore, older entrants spent more time at nonfarm work in the entry year and were, therefore, less dependent on farming for income. In view of the following evidence, it appears that this difference probably continued to exist throughout the study period. It was found that while slightly over 43 percent of the respondents classified as part-time farmers in 1967 were 29 years old or older at the time of entry, only about 16 percent of those classified as full-time farmers in 1967 were 29 years old or older at the time of entry. In addition, as will be shown later, respondents in the 25 and over age group spent nearly twice as much time at nonfarm work in 1967 as respondents in the under 25 age group. Therefore, older respondents were probably less concerned about acquiring sufficient land for a full-time farming operation and more concerned about satisfying their desire to own land.

3. Farm size

The farm group started on farms averaging 181 acres in size and were operating units averaging 271 acres in size in 1967 (Table 25). In comparison, the average size of all Iowa farms was 190 acres for the two year period of 1959-60 and 234 acres in 1967 (11). Thus, while the

Table 25. Acres operated by 1967 farm operators in the entry year, in 1967 and the average for the 1959-60 to 1967 period, by entry age

Item	Entry age: Under 25 No.	Under 25 %	25 and over No.	25 and over %	Total No.	Total %
Acres operated entry year[a]						
Less than 160	23	32.4	28	58.3	51	42.8
160-320	34	47.9	18	37.5	52	43.7
320 or more	14	19.7	2	4.2	16	13.5
Total	71	100.0	48	100.0	119	100.0
Mean	205		143		181	
Acres operated in 1967[a]						
Less than 160	12	16.9	24	50.0	36	30.2
160-320	29	40.8	17	35.4	46	38.7
320 or more	30	42.3	7	14.6	37	31.1
Total	71	100.0	48	100.0	119	100.0
Mean	329		186		271	
Average for the period[a,b]						
Less than 160	14	19.7	27	56.2	41	34.5
160-320	34	47.9	17	35.4	51	42.8
320 or more	23	32.4	4	8.4	27	22.7
Total	71	100.0	48	100.0	119	100.0
Mean	277		164		231	

[a]Difference by age significant at the five percent level.

[b]Based on number of acres operated each year a farm was operated during the period.

average size of all Iowa farms increased by 44 acres, these beginning entrants increased the average size of their farms by 90 acres. As a result the average size of their farms was about 37 acres larger than the state average in 1967 in spite of the fact that they had started on farms averaging about 9 acres smaller than the state average for 1959-60. Furthermore, while the average size of all Iowa farms during the 1959-60 to 1967 period was estimated to be 210 acres (11), the average size of farms operated by the farm group during the period was estimated to be 231 acres.

While the above differences may be somewhat surprising, there are several reasons why one might have expected these beginning entrants to have been operating larger than average units once they became established in farming. Firstly, the beginning entrants were, on the average, considerably younger than the typical Iowa farmer. In view of the previous findings indicating younger respondents were more frequently operating in partnership than older respondents and the reasons for expecting such an association between age and business form, it could be that a larger proportion of the beginning entrants than of all Iowa farmers were operating in partnership. Since partnership units are typically larger than single-proprietor units, this could partly explain why, once the beginning entrants became established in farming, they were operating farms larger than the average Iowa farm. And, as can be seen in Table 58 (Appendix A), units operated by single operators in 1967 averaged 241 acres in size, only slightly larger than the state average of 234 acres. On the other hand, units operated in partnership in 1967 averaged 430 acres in size.

It was previously pointed out that owned land accounted for less than one-fourth of the total land used in the 1967 farming operations of the beginning entrants, while for the average Iowa farm the proportion was about one-half. It is typically held that larger units can be put together by renting land rather than purchasing land. It could be that part of the difference in the size of farms operated by the beginning entrants and the size of the average Iowa farm is due to differences in the form of land tenure used.

Again, there were large differences associated with age. As can be seen in Table 25, the respondents in the under 25 age group operated much larger farms than those in the 25 and over age group throughout the study period. Also, the comparison of the entry year and 1967 mean farm size figures indicates that the under 25 age group increased the average size of their farms by 124 acres during the period while the 25 and over age group increased the average size of their farms by only 43 acres.

It is likely that part of the association between age and farm size is explained by the association between age and business form. As was previously shown, younger respondents were more frequently operating in partnership than older respondents. Since partnership units were generally much larger than single-proprietor units, this probably explains part of the association between age and farm size. For example, it was found that the mean size of farms operated in 1967 by single-proprietors in the under 25 age group was 89 acres larger than that of single-proprietors in the 25 and over age group; however, when partnerships were included, the difference in the mean size of farms operated by the two age groups increased to 143 acres (Table 58, Appendix A).

It is also likely that part of the association between age and farm size is explained by age-associated differences in the extent to which the respondents depended on farming for income. As might be expected, there were large differences in both the size and the change in size of the farms operated by those respondents who were full-time farmers in 1967 and those who were part-time farmers in 1967. The full-time farmers started on farms averaging 210 acres in size while the part-time farmers started on farms averaging only 141 acres in size. By their eighth year in farming, the full-time farmers were operating farms having a mean size of 334 acres. In contrast, the part-time farmers were operating farms having a mean size of only 185 acres in their eighth year of farming (Table 26). Since older respondents were more likely to have been part-time farmers than younger respondents, one might have expected the older respondents to have been associated with smaller units than the younger respondents.

4. Farm land purchases and land improvements

Of the 119 respondents in the farm group, 40 or approximately one-third purchased farm land between the time they entered farming and December 31, 1967.[9] Some of the attributes of these purchases are summarized in Table 27.

The mean number of acres purchased was 134. However, there was wide variation in the number of acres purchased. While several respondents made purchases of less than 10 acres, one respondent purchased over 400

[9]Although 52 respondents were land owners in 1967, 12 were either owners at the time they entered farming or inherited land sometime during the period.

Table 26. Mean size of farms (acres) operated by 1967 farm operators, by 1967 employment status and years after entry

1967 employment status	Years after entry								
	1	2	3	4	5	6	7	8	9[a]
Full-time	210	240	240	249	268	288	301	334	348
Part-time	141	176	190	175	180	189	192	185	181
Total	181	212	219	218	231	246	255	271	288

[a]Based on 1959 entrants only since 1960 entrants had farmed for a maximum of only 8 years by the end of 1967.

Table 27. Attributes of farm land purchases made during the 1959-60 to 1967 period by 1967 farm operators, by entry age

Item	Entry age: Under 25 No.	Under 25 %	25 and over No.	25 and over %	Total No.	Total %
Purchased farm land	21	29.6	19	39.6	40	33.6
Did not purchase farm land	50	70.4	29	60.4	79	66.4
Total	71	100.0	48	100.0	119	100.0
Number of acres purchased						
Less than 100	7	33.4	10	52.7	17	42.5
100-179	7	33.3	5	26.3	12	30.0
180 or more	7	33.3	4	21.0	11	27.5
Total	21	100.0	19	100.0	40	100.0
Mean	156		111		134	
Value per acre (dollars)						
Less than 350	8	38.1	7	36.9	15	37.5
350-474	10	47.6	4	21.1	14	35.0
475 or more	3	14.3	8	42.0	11	27.5
Total	21	100.0	19	100.0	40	100.0
Mean	363		484		420	
Method of financing purchase						
Savings only	0	0.0	2	12.5	2	5.4
Savings equal borrowings	1	4.8	2	12.5	3	8.1
Borrowings only	12	57.1	5	31.3	17	45.9
Total	21	100.0	16[a]	100.0	37	100.0

[a]There were three cases of incomplete information in the 25 years old and older age group.

acres during the period. Of those who purchased land, 42.5 percent purchased less than 100 acres and 27.5 percent purchased 180 acres or more (Table 27). However, a closer inspection revealed that only 5 respondents, about 4 percent of the farm group as a whole, purchased as much as 260 acres during the period. Thus, although a rather large proportion of the group purchased land during the period, it is quite clear that few came close to purchasing a sufficient quantity of land for a full-time farming operation based on owned land.

Because of financial limitations, one might have expected the beginning entrants to have purchased land of below average quality. However, a comparison of the beginning entrants' estimates of the per acre value of the land they purchased with the average value of all Iowa farm land indicated that the per acre value of the land purchased by the beginning entrants was slightly higher than the average for the state. This slightly higher average value per acre could be attributable to the fact that the tracts purchased by beginning entrants were, in general, rather small; and, smaller tracts of a given quality of land usually command a higher price than larger tracts of the same quality. Thus, there was probably little difference in the average quality of the land purchased by beginning entrants and that of the state as a whole.

As might be expected beginning entrants depended heavily on borrowed funds to finance their land purchases. Of the 37 respondents reporting information on the method of financing the purchase, only 2 or 5.4 percent reported that they had financed their purchases entirely out of savings and only 3 or 8.1 percent reported they had used equal portions

of saved and borrowed funds. In contrast, 15 or 40.6 percent indicated they had depended entirely on borrowed funds and the remaining 17 or 45.9 percent stated they had used some savings but, had depended mostly on borrowed funds to finance their purchases (Table 27).

Although the differences were not statistically significant, older respondents in the sample were more likely to have purchased land and to have purchased smaller acreages than younger respondents (Table 27). Such differences might have been expected in view of the previous findings concerning age-associated differences in the financial resources available to finance land purchases, in the reasons for entering farming, and in the desire to own land. That older respondents tended to purchase land having a higher value per acre is probably a reflection of their tendency to purchase smaller acreages (Table 27).

In view of the limited quantity of financial resources possessed by most beginning entrants at the time they entered farming, one might suspect that to survive in the shortrun they would have used their savings out of current income to make short-term investments rather than long-term investments. Since land improvements are typically of the long-term variety, it might have been expected that few of the beginning entrants would have made land improvements. However, of the farm group as a whole, 52 or nearly 44 percent reported they had made some type of land improvement since entering farming (Table 28). The costs and forms of improvements varied widely. The costs ranged up to $27,000 (improvements made in the establishment of a dairy operation); and, the forms included operations and additions such as fencing, tiling, clearing of trees,

Table 28. Selected attributes of land improvements made by 1967 farm operators since entering farming, by entry age

Item	Entry age: Under 25 No.	Under 25 %	25 and over No.	25 and over %	Total No.	Total %
Number making land improvements	26	36.6	26	54.2	52	43.7
Number not making land improvements	45	63.4	22	45.8	67	56.3
Total	71	100.0	48	100.0	119	100.0
	(n=26)		(n=26)		(n=52)	
Mean total cost of all land improvements	4760	100.0	2920	100.0	3840	100.0
Mean paid by savings	1320	27.7	1860	63.7	1590	41.4
Mean paid by borrowings	3340	70.2	900	30.8	2120	55.2
Mean paid by Gov't. under cost sharing program	100	2.1	160	5.5	130	3.4

buildings, silos, and wells, to name a few.

Typically it has been held that tenants are discouraged from making land improvements because of the uncertainty as to whether or not they will be the ones to receive the return on their investments. Therefore, it was somewhat surprising to find that nearly one-fifth, 19.2 percent to be precise, of those who made land improvements were not land owners, and had apparently made improvements on rented land. However, excluding one case in which the respondent expected to inherit the land on which he made improvements and another in which the respondent's partner owned the land on which the improvements were made, the improvements made by nonowners were generally of low cost, averaging less than $800 per respondent. In contrast, the cost of improvements made by respondents who owned land averaged over $3,300 per respondent.

As with land purchases, beginning entrants depended quite heavily on borrowed funds to finance their land improvements. Of the total cost of all land improvements reported, the respondents indicated that 55.2 percent was paid with borrowed funds, 41.4 percent with savings and the remaining 3.4 percent by the Government under a cost-sharing program (Table 28).

While older respondents tended to make land improvements more frequently than younger respondents, younger respondents tended to make more expensive land improvements. The former difference is probably a reflection of the fact that older respondents were more frequently land owners and the latter difference could be related to the heavier dependence of the younger respondents on farming for income. Although respondents in the 25 and over age group paid a much larger proportion of the total cost

out of savings than respondents in the under 25 age group, the difference between the two groups with regard to the mean absolute amount paid by savings was relatively small (Table 28).

5. Use of information sources

In recent years, it seems that new and improved technology in the field of agriculture is being discovered at an ever increasing rate. Not only are new and better methods and inputs being discovered for application in the area of production; but new and improved techniques in the area of marketing are being discovered as well. If a farmer is to maintain his competitive position, he must make use of this new technology. However, before he can make use of it, he must first learn that it exists and how to apply it. It would appear then that the gathering of information would be an important activity of the modern farmer. This would seem to be especially true of the beginning farmers, since they might even be short on understanding of some of the technology which has been in use for some time.

In an attempt to determine which information sources these beginning farmers used most frequently and to a limited degree the extent of their information gathering activities, each respondent was asked to indicate which of the information sources listed in Table 29 he used regularly to obtain information on farming practices and which ones he used regularly to obtain information on farm prices and markets. Apparently the group used "farm magazines" more frequently than any other source to obtain information on farm practices, and they used "radio and television" more frequently than any other source to obtain information on farm prices and

Table 29. Use of information sources for farm practices and prices and markets by 1967 farm operators, by entry age

Source	Used for farm practices (n=71) Under 25 No.	%	(n=48) 25 and over No.	%	(n=119) Total No.	%	Used for farm prices and markets (n=71) Under 25 No.	%	(n=48) 25 and over No.	%	(n=119) Total No.	%
Farm magazines	66	93.0	41	85.4	107	89.9	25	35.2	15	31.3	40	33.6
ASC Office	43	60.6	23	47.9	66	55.5	3	4.2	1	2.1	4	3.4
Daily newspaper	31	43.7	22	45.8	53	44.5	38	53.5	25	52.1	63	52.9
Radio and television	32	45.1	18	37.5	50	42.0	67	94.4	45	93.8	112	94.1
County Agent Office	31	43.7	17	35.4	48	40.3	1	1.4	1	2.1	2	1.7
SCS Office	23	32.4	13	27.1	36	30.3	1	1.4	0	0.0	1	.8
Extension meetings	20	28.2	11	22.9	31	26.1	0	0.0	0	0.0	0	0.0
College bulletins	18	25.4	10	20.8	28	23.5	2	2.8	5	10.4	7	5.9
Livestock and grain buyers	6	8.5	1	2.1	7	5.9	27	38.0	9	18.6	36	30.3
Other	4	5.6	7	14.6	11	9.2	2	2.8	4	8.3	6	5.0
Total	274	38.6	163	34.0	437	36.7	166	23.4	105	21.9	271	22.8

markets. Nearly 90 percent of the group reported they regularly used "farm magazines" as a source of information on farming practices, while 94 percent indicated they regularly used "radio and television" as a source of information on farm prices and markets. However, as indicated by the percentage of respondents using each of the sources (Table 29), the group apparently used a wide range of information sources for gathering both types of information.

Most respondents regularly used several sources to obtain both types of information. On the average, the group regularly used 3.7 sources to obtain information on farming practices and 2.8 sources to obtain information on prices and markets. That respondents, on the average, used more sources to obtain information on farming practices than on farm prices and markets is probably a reflection of the fact that one would not ordinarily expect to obtain information on farm prices and markets from a number of the sources included in the list. Only small differences characterized the two age groups.

B. Labor Utilization

Although most of the family labor used for income-generating activities in 1967 was used on the home farm, many of the respondents held nonfarm jobs, and some worked part time for wages on other farms. In addition, some of the other family members, especially wives, worked at nonfarm jobs and, to a very minor extent, part time for wages on other farms. Of the 119 respondents in the farm group, 43 percent did some nonfarm work for income in 1967, and nearly 26 percent did some work for wages on other farms. Slightly over 16 percent, or about one-sixth of the

wives worked at nonfarm jobs during 1967.

Data on the utilization of family labor for income-earning activities in 1967 are presented in Table 30. An effort was made to obtain estimates of time spent at various income-earning activities in terms of standard 8-hour days. However, because of the difficulties in obtaining accurate labor information, the estimates are, for the most part, only rough approximations. The data for nonfarm work and work for wages on other farms are probably quite accurate. However, the estimates of work on the home farm, particularly for respondents, are subject to considerable error. In the case of the respondents the data are probably more a reflection of the amount of time available for work on the home farm than of time actually worked on the home farm since there is a strong tendency for respondents to count time spent on the home farm as time worked.

It was estimated that farm operators and their families spent roughly 415 days, on the average, at income-generating activities in 1967. Respondent labor accounted for nearly 83 percent, and labor of other family members accounted for about 17 percent of the total. Of the total time spent at income-generating activities, about three-fourths was spent at work on the home farm, 22.4 percent was spent at nonfarm jobs, and 2.4 percent was spent at work for wages on other farms.

Because the estimates are subject to considerable measurement error, age-associated differences in the total time spent at income-earning activities in 1967 by respondents, their family members and both combined appeared to be too small to allow reliable inferences to be drawn from them. However, the age-associated differences in the allocation of total

Table 30. Utilization of 1967 farm operator family labor for income-earning activities in 1967, by entry age

Item	Entry age: Under 25 (n=48)	Entry age: 25 and over (n=48)	Total (n=119)
		(Days per farm respondent)	
Respondent			
Worked on home farm	301	222	269
Worked for wages on other farms	8	8	8
Nonfarm work	49	94	67
Total	358	324	344
Other family members			
Worked on home farm	42	43	43
Worked for wages on other farms	0	4	2
Nonfarm work	23	29	26
Total	65	76	71
Total family members			
Worked on home farm	343	265	312
Worked for wages on other farms	8	12	10
Nonfarm work	72	123	93
Total	423	400	415

work time between farm and nonfarm activities strongly suggests that older respondents spent a much larger proportion of their total work time at nonfarm jobs in 1967 than younger respondents. Respondents in the 25 and over age group spent, on the average, 222 days at work on the home farm and 94 days at nonfarm jobs. In contrast, those in the under 25 age group spent an average of only 49 days at nonfarm jobs (Table 30). Findings of the benchmark study indicated that a similar association between age and allocation of work time between farm and nonfarm activities existed in the entry year. As indicated earlier, the association is probably related to the age-associated differences in farm size and motives for entering farming.

One might expect that over time, as some of the beginning entrants began to get established in farming, the amount of work time devoted to off-farm income-earning activities would decline. Some evidence that this did occur is found by comparing the entry year and 1967 employment status of the group. In the entry year, 72 percent of the 1967 farm operators were part-time farmers; that is, they spent 25 days or more at income-earning activities not directly related to their farming operations. In contrast, only 43 percent of the group were part-time farmers in 1967. Thus it would appear that the group, on the average, devoted considerably less time to off-farm income-generating activities in 1967 than in the entry year.

C. Selected Views of the Farm Group

Each 1967 farm operator was asked a series of questions relating to his views about his experience in farming, income opportunities in farming and the conditions under which he would advise a young man to start farming. Responses were classified by entry age of the respondent and are presented in Tables 31 through 35 and Table 60 in Appendix A.

The first question was: "Based on your experience up to now, would you say the rewards of farming have been greater, about the same, or less than what you expected when you decided to farm?" Of the 119 farm operators, 18.5 percent indicated the rewards had been greater than expected, 36.1 percent stated the rewards had been less than expected and 45.4 percent said that the rewards had been about the same as expected (Table 31). Apparently over half of the farm operators had erred in their expectations. Unfavorable errors (rewards less than expected) were about twice as numerous as favorable errors (rewards greater than expected). The pattern of response appeared to be independent of age.

Apparently some of the respondents who indicated rewards were less than expected felt they had made the right decision in spite of having had unfavorable errors in their expectations. When asked, "If you had known when you started to farm what you know today, would you still have decided to farm?", only 20.2 percent of the group gave a negative answer and 6.7 percent said they did not know what they would have done (Table 32). About 73 percent said they would have decided to farm. Again, the pattern of response appeared to be independent of age.

Table 31. Response of 1967 farm operators to the question, "Based on your experience up to now, would you say the rewards of farming have been greater, about the same, or less than what you expected when you decided to farm?", by entry age

	Entry age					
	Under 25		25 and over		Total	
	No.	%	No.	%	No.	%
Response						
Greater	12	16.9	10	20.9	22	18.5
Less	27	38.0	16	33.3	43	36.1
Same	32	45.1	22	45.8	54	45.4
Total	71	100.0	48	100.0	119	100.0

Table 32. Response of 1967 farm respondents to the question, "If you had known when you started to farm what you know today, would you still have decided to farm?", by entry age

	Entry age					
	Under 25		25 and over		Total	
	No.	%	No.	%	No.	%
Response						
No	14	19.7	10	20.8	24	20.2
Yes	50	70.4	37	77.1	87	73.1
Don't know	7	9.9	1	2.1	8	6.7
Total	71	100.0	48	100.0	119	100.0

Evidently some of the respondents had experienced some dissatisfaction with farming at one time or another since entering. In response to the question, "Since you started farming, have you given any thought to quitting and getting a nonfarm job?", 39 percent indicated they had given thought to quitting farming; nearly 51 percent indicated they had not given thought to quitting; and, about 10 percent said they "already had a supplementary nonfarm job" (Table 33). Perhaps, the latter 10 percent felt they had established themselves as part-time farmers and were content with their situation. There was some tendency for the proportion of affirmative replies to be larger and for the proportion of negative and "already have a supplementary nonfarm job" replies to be smaller for younger operators than older operators. However, the difference was not found to be statistically significant at the five percent level of probability.

Those respondents who indicated they had given thought to quitting farming were asked what their main reason was for not having quit and acquiring a nonfarm job. As can be seen in Table 33, there was wide variation in the reasons given. Probably the most noteworthy aspect of the over-all response is that, excluding the reason "already have a supplementary nonfarm job", reasons relating to working or living conditions were given more frequently than any other reason.

Apparently about one-fourth of the 1967 farm operators were expecting harder times in farming. When asked, "Looking ahead for the next 20 years, do you expect income-earning opportunities in farming to increase, stay about the same, or decrease?", 24.4 percent indicated they expected a

Table 33. Response of 1967 farm operators to the questions, "Since you started farming have you given any thought to quitting and getting a nonfarm job? If yes, what would you say is the main reason you have not quit and acquired a nonfarm job?", by entry age

Question and response	Entry age					
	Under 25		25 and over		Total	
	No.	%	No.	%	No.	%
Thought given to quitting[a]						
Yes	32	45.1	14	29.8	46	39.0
No	34	47.9	26	55.3	60	50.8
Already have a supplementary nonfarm job	5	7.0	7	14.9	12	10.2
Total	71	100.0	47	100.0	118	100.0
If yes, why have you not quit[b]						
Already have a supplementary nonfarm job	7	18.9	7	33.3	14	24.2
Like working and/or living conditions	7	18.9	6	28.6	13	22.4
Can't do anything else - lack of education for a nonfarm job	5	13.5	3	14.3	8	13.8
Have too much invested	5	13.5	2	9.5	7	12.1
Still hope to make it pay - want to try longer	3	8.1	1	4.7	4	6.9
Farm prices have improved	2	5.4	1	4.7	3	5.2
Plan to take over the farm	2	5.4	0	0.0	2	3.4
Miscellaneous	5	13.6	1	4.8	6	10.3
Have quit	1	2.7	0	0.0	1	1.7
Total	37	100.0	21	100.0	58	100.0

[a]Difference by age not significant at the five percent level.

[b]Includes those who responded to the first question with, "Already have a supplementary nonfarm job."

decrease in income-earning opportunities. A slightly larger proportion, 37 percent, expected them to increase, and 37.8 percent expected them to stay about the same. Again, the response appeared to be independent of age (Table 34).

What obstacles did the farm group consider most important in increasing their income from farming? Of the 116 responding, exactly one-half said that low prices and/or high costs were the most important obstacle. Nearly one-third, 32.9 percent, reported inadequate land, capital, or both to be the most important. Nearly 7 percent mentioned management problems. About 4.3 percent referred to the "general farm or economic situation", which probably involved the cost-price situation. Crop and livestock production problems were indicated by 3.4 percent, and another 3.4 percent gave other obstacles. Again, only small differences characterized the two age groups (Table 35).

Each respondent in the farm group was asked, "Under what conditions, if any, would you advise a young man to start farming in 1968? The same question, with exception of the year, was asked the group in 1962 as part of the benchmark study. The group's response to these questions are presented in Table 60 (Appendix A). Probably the most noteworthy aspects of these data are: (1) the vast majority of the conditions mentioned in each of the years were in some way related to the capital or financial restrictions characterizing entry into farming, (2) only a very small proportion mentioned experience in farming as a condition, (3) the proportion of those responding who would not advise it rose from 13 percent in 1962 to 24.6 percent in 1968 and (4) the pattern of response showed no consistent relationship with entrant age.

Table 34. Response of 1967 farm operators to the question, "Looking ahead for the next 20 years, do you expect the income earning opportunities in farming to increase, stay about the same, or decrease?", by entry age

	Entry age					
	Under 25		25 and over		Total	
	No.	%	No.	%	No.	%
Response						
Increase	25	35.2	19	39.6	44	37.0
Decrease	16	22.5	13	27.1	29	24.4
Stay the same	29	40.8	16	33.3	45	37.8
Don't know	1	1.4	0	0.0	1	.8
Total	71	100.0	48	100.0	119	100.0

Table 35. Obstacles 1967 farm operators considered most important in increasing their income from farming, by entry age

	Entry age					
	Under 25		25 and over		Total	
	No.	%	No.	%	No.	%
Obstacles						
Low prices and/or high costs	38	55.1	20	42.6	58	50.0
Inadequate land and/or capital	21	30.4	17	36.1	38	32.9
Management problems	5	7.3	3	6.4	8	6.9
Crop and livestock problems	3	4.3	1	2.1	4	3.4
General farm or economic situation	1	1.4	4	8.5	5	4.3
Other	1	1.4	3	6.4	4	3.4
Total	69	100.0	47	100.0	116	100.0

IX. FINANCIAL PROGRESS

A descriptive investigation into the nature of the financial progress experienced by the beginning entrants will be made in this chapter. Income progress will be explored first, with emphasis on (a) variation in the annual absolute changes and annual rates of change in income within the group as a whole and within and between the farm and nonfarm groups, (b) how the level of and change in income of the beginning entrants compared with that of other groups and (c) selected characteristics of the beginning entrants' income and the components of change. This is followed by a similar inquiry into net worth progress, which is focused upon (a) the variation in the annual absolute changes and annual rates of change in net worth within the group as a whole and within and between the farm and nonfarm groups and (b) selected characteristics of net worth and net worth change.

A. Income Progress

1. Annual absolute changes and annual rates of change

a. For the group as a whole There was wide variation in the income progress experienced by the beginning entrants as indicated by the data in Tables 36 and 37. A rough indication of the variation is the range in the progress indicators. For example: The average annual absolute change in total family income excluding gifts ranged from a decrease of $2400 per year to an increase of nearly $6000 per year. Of course such extremes represent the exceptional cases. The mean average annual absolute change in total family income excluding gifts was $643 per year

Table 36. Distribution of beginning entrants, by average annual absolute change in total family income and 1967 employment status

Income change (dollars/year)	Farm				Nonfarm				Total			
	Including gifts		Excluding gifts		Including gifts		Excluding gifts		Including gifts		Excluding gifts	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
-1000 or below	1	.9	0	0.0	1	2.1	1	2.1	2	1.2	1	.6
-999 to -500	5	4.3	3	2.6	1	2.1	1	2.1	6	3.7	4	2.4
-499 to -1	9	7.7	9	7.7	9	18.8	7	14.6	18	11.0	16	9.8
0 to 499	45	38.8	41	35.4	15	31.2	15	31.2	60	36.5	56	34.2
500 to 999	31	26.7	30	25.9	15	31.2	16	33.3	46	28.1	46	28.1
1000 to 1499	14	12.1	21	18.1	5	10.4	6	12.5	19	11.6	27	16.4
1500 to 1999	6	5.2	7	6.0	0	0.0	0	0.0	6	3.7	7	4.3
2000 to 2499	2	1.7	2	1.7	1	2.1	1	2.1	3	1.8	3	1.8
2500 or above	3	2.6	3	2.6	1	2.1	1	2.1	4	2.4	4	2.4
Total	116	100.0	116	100.0	48	100.0	48	100.0	164	100.0	164	100.0
Mean	627		706		414		491		565		643	
Median	459		578		380		493		447		551	

Table 37. Distribution of beginning entrants, by annual rate of change in total family income and 1967 employment status

Rate of change (percent per year)	Farm				Nonfarm				Total			
	Including gifts		Excluding gifts		Including gifts		Excluding gifts		Including gifts		Excluding gifts	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
-10 or below	3	2.6	1	.9	1	2.2	1	2.2	4	2.5	2	1.2
-9.9 to -5.0	4	3.5	2	1.7	3	6.5	2	4.4	7	4.3	4	2.5
-4.9 to -0.1	8	7.0	7	6.1	7	15.2	6	13.0	15	9.3	13	8.1
0 to 4.9	26	22.6	27	23.5	6	13.0	7	15.2	32	19.9	34	21.1
5.0 to 9.9	30	26.1	22	19.1	13	28.3	7	15.2	43	26.7	29	18.0
10.0 to 14.9	15	13.0	13	11.3	8	17.4	11	23.8	23	14.3	24	14.9
15.0 to 19.9	12	10.4	18	15.6	5	10.8	6	13.0	17	10.6	24	14.9
20.0 to 24.9	11	9.6	11	9.6	1	2.2	2	4.4	12	7.5	13	8.1
25.0 to 34.9	5	4.3	7	6.1	1	2.2	2	4.4	6	3.7	9	5.6
35.0 or above	1	.9	7	6.1	1	2.2	2	4.4	2	1.2	9	5.6
Total[a]	115	100.0	115	100.0	46	100.0	46	100.0	161	100.0	161	100.0
Arithmetic mean	9.0		12.5		7.3		10.1		8.5		11.8	
Computed mean[b]	8.6		10.9		6.3		8.9		8.0		10.1	
Median	8.0		9.7		7.9		10.2		8.0		9.7	

[a]Difference in total observations for rate of change and absolute change, Table 36, is due to negative incomes which did not permit calculation of rate of change.

[b]Computed using the mean levels of income in the two years.

while the mean including gifts was $565 per year. The median values were $551 per year and $447 per year, respectively, indicating that the distributions are skewed to the right as can be seen in Table 36. The difference in the change in income including gifts and the change excluding gifts reflects the larger value of gifts received by the entrants in the entry year as compared to 1967. As indicated earlier, the change in income excluding gifts represents the change in earned income. While the majority of the entrants, approximately 62 percent, experienced an average increase in earned income of between zero and $1000 per year, nearly 25 percent increased their earned income by $1000 per year or more and almost 13 percent experienced a decrease in earned income (Table 36).

There was also wide variation in the rate of change in total family income. The rate of change excluding gifts ranged from an average increase of nearly 90 percent per year to an average decrease of nearly 33 percent per year. However, the range including gifts was from an increase of 40 percent per year to the same decrease of nearly 33 percent per year, again reflecting the larger role of gifts in the entry year as compared to 1967. The mean annual rate of change in total family income excluding gifts was 11.8 percent while the mean including gifts was 8.5 percent. The median values were 9.7 and 8.0, respectively. Again, the differences between the mean and median values indicate positively skewed distributions (Table 37).

Given the absolute change in income, the lower the level of income in the base (entry) year, the higher would be the rate of change. In an attempt to shed some light on the effect of the entry year level of income on the rate of change, the annual rate of change in the mean total family

income of the group was computed. If the rate of change in income were entirely independent of the level of entry year income, the rate of change in the mean income would be equal to the mean of the individual rates of change. If the rate of change were highly positively correlated with the level of income, the rate of change in the mean would be much larger than the mean rate of change. And, if it were highly negatively correlated, the rate of change in the mean would be much smaller than the mean rate of change.

The rate of change in mean total family income excluding gifts was found to be 10.1 percent per year and the change including gifts was 8.0 percent per year. The comparison of these values with the corresponding means of the individual rates of change, which were 11.8 and 8.5 percent per year respectively, does not suggest that the level of entry year income had a large effect on the rate of change. However, it does appear that there may have been a slight tendency for the higher rates of change to be associated with the lower levels of entry year income, as might be expected.

b. For the farm and nonfarm groups The mean absolute change in total family income excluding gifts was $706 per year for the farm group and $491 per year for the nonfarm group, while the median values were $578 and $493, respectively. The means including gifts were $627 per year for the farm group and $414 per year for the nonfarm group, and the medians were $459 and $380, respectively (Table 36). Thus, based on both the sample means and medians, it appears that the farm group had the higher absolute gains in total family income. Both groups were characterized by wide variations in the absolute gains in total family income and the

distributions for both groups were positively skewed, as seen in Table 36. In addition, the absolute effect of gifts on the measures of income change appears to have been quite similar for both groups.

The mean annual rate of change in total family income excluding gifts was 12.5 percent for the farm group and 10.1 percent for the nonfarm group, while the median values were 9.7 percent and 10.2 percent, respectively. The means including gifts were 9.0 percent per year for the farm group and 7.3 percent per year for the nonfarm group, and the medians were 8.0 and 7.9, respectively (Table 37). Thus, the sample means indicate that the farm group had higher rates of change in both total family income excluding gifts and total family income including gifts. However, the median rates of change indicate that the nonfarm group had slightly higher rates of change in income excluding gifts and that the rates of change including gifts were about equal for the two groups. The difference between the results obtained by comparing the mean rates of change and those obtained by comparing the median rates of change is due to differences in the distributions of farm and nonfarm respondents by the rates of change. As can be seen in Table 37, the distributions of farm respondents by the rates of change are positively skewed, while those for the nonfarm group indicate slight evidence of negative skewness. Because of the skewness in the distribution, it seems that the medians would be the better indicators of central tendency. On this basis, one would have to conclude that the rates of change in total family income were quite similar for both groups.

Comparing the rate of change in the mean with the mean rate of change indicates that the higher rates of change in total family income tended to

be associated with the lower levels of entry year income in both groups (Table 37).

c. Within the farm group Classification by both entry year and 1967 employment status produced four classes of 1967 farm operators. These four classes are: (1) those who were full-time farmers in both years, (2) those who were full-time farmers in the entry year, but part-time farmers in 1967, (3) those who were part-time farmers in the entry year, but full-time farmers in 1967 and (4) those who were part-time farmers in both years (Table 5, page 39). Hereafter, groups 2 and 3 will be referred to as having experienced a shift in employment status of full-time to part-time and part-time to full-time, respectively. A priori one might expect that there would be differences in the income progress experienced by these groups, especially in relation to the source of change, i.e., whether the change in income was primarily due to a change in farm income, nonfarm income or both.

Looking first at the change in total family income, it appears that the entrants who were full-time farmers in both years had the highest absolute gains, with a mean change excluding gifts of $878 per year. The entrants who shifted from part-time to full-time seem to have experienced the lowest gain in total family income with a mean excluding gifts of $633 per year. The mean for those who shifted from full-time to part-time was $800 per year, and the mean for those who were part-time farmers in both years was $666 per year. It also appears that those who started as full-time farmers experienced higher gains in total family income than those who started as part-time farmers as the means excluding gifts were $863 per year and $649 per year, respectively. A similar, but smaller,

difference was detected between those who were full-time farmers in 1967 and those who were part-time farmers in 1967 (Table 38).

Turning now to net farm income, there appears to have been large differences among the employment status groups with respect to the average gains in net farm income. Those who were full-time farmers in both years appear to have had the highest gains in net farm income, with a mean increase excluding gifts of $887 per year. Although those who shifted from part-time to full-time appear to have had the lowest gains in total family income, they had the second highest gains in farm income. Their average increase excluding gifts was $746 per year, while those who shifted from full-time to part-time had an average increase of only $404 per year. Those who were part-time farmers in both years apparently had the lowest gains in farm income, with a mean excluding gifts of only $330 per year. Also, those who were full-time farmers in 1967 had an average gain of $798 per year in net farm income excluding gifts while that of the 1967 part-time farmers was only $339 (Table 38).

The absolute effect of gifts on the gains in both total family income and net farm income appeared to be quite similar for all groups except the group which shifted from full-time to part-time farming (Table 38). A close inspection of the data indicated that the magnitude of the effect in this group is due to a large inheritance received during the entry year by one of the respondents in this group. In addition, for all groups, the total value of gifts received was larger in the entry year than in 1967 as indicated by the difference in gains in income including and excluding gifts.

Table 38. Mean income progress experienced by 1967 farm operators, by entry employment status and 1967 employment status

Measure of income progress	Full-time entry			Part-time entry			Total		
	Full-time 1967	Part-time 1967	Total	Full-time 1967	Part-time 1967	Total	Full-time 1967	Part-time 1967	Total
n[a] ...	25	6	31	43	42	85	68	48	116
Average annual absolute change in:[b]									
Net farm income including gifts	849	130	710	687	303	497	747	281	554
Net farm income excluding gifts	887	404	794	746	330	540	798	339	608
Total family income including gifts	790	506	735	561	615	588	645	602	627
Total family income excluding gifts	878	800	863	633	666	649	723	683	706
Mean annual rate of change in:[c]									
Net farm income including gifts	13.6	1.8	11.3	11.8	11.6	11.7	12.5	9.9	11.6
Net farm income excluding gifts	17.8	6.5	15.9	12.8	15.3	13.9	14.8	14.0	14.5
Total family income including gifts	12.3	7.8	11.4	7.2	9.0	8.1	9.1	8.9	9.0
Total family income excluding gifts	17.5	17.7	17.5	10.0	11.3	10.6	12.8	12.1	12.5

[a]These n's are the actual n's for all above measures of average annual absolute change. However, the actual n's for the measures of annual rate of change vary somewhat from those given above due to negative incomes which did not permit computation of rates of change.

[b]Dollars per year.

[c]Percent per year.

As stated previously, one might expect that the employment status groups would differ with respect to the source of income change. That they did is apparent from the following comparison of the groups in terms of the proportion of the gain in total family income that is accounted for by gain in farm income. For those who were full-time farmers in both years and those who shifted from part-time to full-time farming, the gain in farm income more than accounts for the change in total family income. Thus, on the average, the respondents in these two groups apparently experienced a decrease in income from sources other than their farming operations. In contrast, the gain in farm income of those who shifted from full-time to part-time farming and those who were part-time farmers in both years accounts for only about half of the gain in total family income for these two groups. Thus, on the average, the respondents in these two groups apparently experienced nearly equal changes in farm income and in income from sources other than farming.

The mean annual rates of change in income experienced by the 1967 farm operators are also displayed in Table 38 for each of the selected employment status groups. However, with one exception, there appears to be little to be gained by the discussion of this data in addition to what has been brought out by the above discussion of the absolute changes in income. The one exception being that the high rate of change in farm income (high in view of the absolute change) experienced by those who were part-time farmers in both years is probably a reflection of relatively low farm incomes in the entry year.

As was indicated earlier, an adjustment was made in the 1967 farm incomes of some of the beginning entrants for the unusual effects of chance events experienced in 1967 by these operators. Events such as unusual weather conditions (either favorable or unfavorable), fire, illness, accident and livestock and crop diseases were among those considered. In a few cases it was found that the adjustment had a considerable effect on the income progress experienced by the relevant individuals. However, in general, it appeared that the effect of chance events on 1967 farm income and, therefore, on the income progress of the beginning entrants was insignificant.

d. Evaluating the differences Although some rather large sample differences in the mean absolute changes in total family income and net farm income were found among the various employment status groups, there are several reasons why caution should be employed in evaluating these differences, especially the differences between the farm and nonfarm groups. First, there is some question as to how much importance should be attached to the sample differences in spite of the fact that some were quite large. Although only one difference was tested and found to be statistically insignificant, it is likely that few, if any, of the other differences would have been found to be statistically significant in light of the extremely wide variation in income progress which characterized the employment status groups.[10] Secondly, the respondents in the various employment status

[10] Although based on a slightly different set of observations than the set used to determine the differences referred to above (see page 31), it was found in the regression analysis that the standard deviation in the average annual absolute change in total family income excluding gifts was approximately $827 for the farm group and $779 for the nonfarm group. Under the assumption of equal variances in the two sets of observations, these standard deviations were used to test the difference in the mean average annual absolute change in total family income of the farm and nonfarm groups (Table 36). On this basis, the differences were found to be insignificant at the five percent level of probability.

groups undoubtedly differed with respect to other factors in addition to employment status. For example, in Chapter VI, a number of differences in the characteristics of the farm and nonfarm groups were pointed out. Therefore, even if these sample differences are assumed to be indications of real differences, and not just a result of sample error, additional analysis would be needed before it could be said to what extent the differences are due to employment or changes in employment status and to what extent they are due to other factors. To illustrate this point, let us further suppose either that all respondents had continued in farming or that all respondents had quit farming. Perhaps in either case the same respondents would have made the higher gains in income. Furthermore, (under the assumption that the differences were real) it is possible that the nonfarm group would have made even less progress than they did had they continued in farming. Although it is not possible to test these suppositions, they further emphasize the need for caution in evaluating the sample differences in income progress.

2. Factors contributing to the income progress of the beginning entrants

As indicated earlier, the average annual rate of increase in earned income was estimated to be 11.8 percent per year for the group as a whole. An increase of 11.8 percent per year appears to be quite high. Therefore, it is useful to consider some of the factors that contributed to this increase in income experienced by the group.

A number of factors were considered by Craft and Kaldor to have had significant effects on the increase in income experienced by a sample of male American men who graduated with a first degree from Iowa State

University in 1956-1957. Among the factors they considered, the following four appear to be applicable to the individuals in this study: (1) inflation, (2) secular increases in per capita real income associated with economic growth, (3) the historical age-experience patterns which affect the profile of earnings by individuals within occupations and (4) a deviation from the average secular increase for the occupations considered (5).

The United States economy was experiencing a mild inflation during the 1959-60 to 1967 period. The consumer price index, computed by the Bureau of Labor Statistics, increased on the average by 1.87 percent per year (22). Also, Craft and Kaldor found that the secular increase in per capita real income averaged about 1.68 percent per year during the 1956-57 to 1965 period (5). Because of the similarity of the time periods involved, it seems safe to assume that the individuals in this study were subject to a similar increase in per capita real income. Thus, even after adjusting for inflation, the average annual rate of increase in real income of the beginning entrants was roughly 9.9 percent per year, or about 8.2 percentage points in excess of the average annual secular increase in per capita real income.

It is likely that part of this "excess" income gain for these beginning entrants is explained by the historical age-experience patterns which affect the profile of earnings by individuals within occupations. Typically, young workers experience large percentage increases in income during their earlier years of employment. However, as the individual grows older and has been working longer, income tends to increase at a slower rate. Although a majority of the beginning entrants had entered the labor force prior to entering farming, a majority (nearly 54 percent)

were also under the age of 25 and their mean age was only 27.5 at the time of entry into farming. Thus, since it is quite clear that most of the beginning entrants were in their earlier years of employment, one might have expected them to have experienced above average gains in income.

Although no attempt was made to determine how increases in earnings for other occupations engaged in by the beginning entrants during the period compared with the average secular increase in per capita real income, it is likely that part of the "excess" increase in earnings is explained by a deviation from the average secular increase for the occupation of farming. As will be shown later, it was found that over half of the income earned by the beginning entrants in both the entry year and 1967 was derived from farming. Conditions which help determine net farm income were highly favorable during the 1959-60 to 1967 period. Data for Iowa indicate an average annual increase in net farm income per farm of over 11.3 percent during the period (24). Adjusting for inflation reduces the figure slightly to 9.4 percent. However, this still reflects a substantial deviation from the average annual secular increase in per capita real income and probably helps to explain the "excess" increase in income experienced by the group.

3. Beginning entrants' income progress relative to other groups

How did the increases in income for the beginning entrants compare with those for other groups during the period? The previous comparison with the average annual secular increase in per capita real income partly answered the question. However, in an attempt to put the increase in income for beginning entrants in a more meaningful perspective, several

more detailed comparisons are made here.

Table 39 displays the relative frequency distributions by family income of 1967 farm and nonfarm beginning entrant families and all U.S. families for the entry year (1959-60) and 1967. The distributions of beginning entrant families are based on total family income including gifts because this estimate of family income was more in accordance with the U.S. Census Bureau's definition of family income than the estimate excluding gifts. Although there were still some differences in the components included in the estimates of beginning entrants family income and those included in the U.S. Census Bureau's estimates of family income, it is believed that the differences do not seriously alter the outcome of the comparison.

Looking first at all beginning entrant families, it can be seen in Table 39 that in the entry year there was a slight tendency for the proportion of beginning entrant families in the two lower income classes to be larger and the proportion in the middle income class to be smaller in comparison to all U.S. families. However, in 1967 there appeared to be a definite tendency for the proportion of beginning entrant families in the two lower income classes, especially the lowest, to be smaller and for the proportion in the middle income class to be larger when compared to all U.S. families. The proportions of all beginning entrant families and all U.S. families in the two upper income classes appeared to be about equal in both years. Thus, the comparison of these distributions suggest that on the average beginning entrant families experienced larger increases in income during the period than U.S. families in general.

Table 39. Relative frequency distributions by family income of 1967 farm and nonfarm beginning entrant families and all U.S. families, for the year of entry and 1967[a]

Family income (current dollars)	Entry year[b] Farm n=116	Nonfarm n=49	Total n=165	U.S.[c]	1967 Farm n=118	Nonfarm n=49	Total n=167	U.S.[c]
Under 3000	21.6	28.6	23.6	22.0	4.2	2.0	3.6	12.3
3000 - 5999	40.5	36.9	39.4	34.1	16.1	20.4	17.4	20.6
6000 - 9999	25.0	18.4	23.1	30.6	34.7	53.1	41.3	32.7
10,000 - 14,999	11.2	10.2	10.9	9.9	29.7	14.3	23.9	22.4
15,000 and above	1.7	6.1	3.0	3.4	15.3	10.2	13.8	12.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Median	5130	4220	4750	5530	9370	8122	8510	7983

[a]See text for an explanation of the measures of income used and the comparability of the data.

[b]Since respondents entered in both 1959 and 1960, the U.S. distribution is the average for these two years.

[c]U.S. Bureau of the Census (20).

The same conclusion is suggested by the comparison of the median family incomes of the two groups. The median family income of the beginning entrants increased from $4750 in the entry year to $8510 in 1967, or by $3760 over the period. In contrast, the median income of all U.S. families increased by only $2453 during the period, from $5530 in the entry year to $7983 in 1967 (Table 39). Furthermore, after making the proper computations and adjusting for inflation, these data suggest that the median family income of beginning entrants increased on the average by nearly 9.0 percent per year during the period while that of all U.S. families increased by approximately 3.6 percent per year.

The breakdown of the beginning entrant families by 1967 employment status in Table 39 indicates that while the nonfarm families appear to have experienced somewhat smaller increases in income than the farm families, their increases were still above those of U.S. families in general. It is also significant to note that 45 percent of the beginning entrant farm families were in the two upper income brackets in 1967 compared to only 24.5 percent of the beginning entrant nonfarm families and 34.4 percent of all U.S. families. In view of the entry year distributions, the variation in the proportion of beginning entrant farm families and the proportion of beginning entrant nonfarm families in the upper income brackets may be due in part to entry year differences in the level of family income and partly to differences in the increase in income over the period. However, the variation between beginning entrant farm families and all U.S. families is clearly a reflection of differences in income gains during the period. In turn, it is likely that the differences

in income gains are a reflection of the previously implied association of the "excess" gains in income experienced by beginning entrants with (a) the age-experience pattern which affects the rate of gain in income for individuals, and (b) the deviation from the average secular increase for the occupation of farming during the period.

It was previously pointed out that the inflation adjusted increase in net farm income per farm in Iowa averaged about 9.4 percent per year during the 1959-60 to 1967 period. In comparison, based on the rate of change in net farm income excluding gifts (Table 38), it was estimated that the beginning entrant farm group increased their net farm incomes by approximately 12.6 percent per year, after adjusting for inflation. Again taking into consideration the age-experience factor, it might have been expected that the beginning entrants would have had larger increases in net farm income than the typical Iowa farmer. Thus, in light of the average increase in net farm income for all Iowa farmers during the period, the increase in net farm income for beginning entrants does not appear to be unreasonably high.

4. Sources of income and income change

Except for a decline in the role of gifts, there appears to have been little difference between the entry year and 1967 with regard to the proportions of total income which the group derived from various sources. Of total earned income, about 55 percent came from farming and about 45 percent came from nonfarm sources in both the entry year and 1967. Of the individual nonfarm sources, entrant's nonfarm labor income accounted for nearly 33 percent of total earned income in both the entry year and

1967; wife's nonfarm labor income made up about 7.5 percent of total earned income in the entry year and about 9.0 percent in 1967; and, earned income from other nonfarm sources amounted to about 4 percent of total earned income in both years (Table 40).

That the proportions of total earned income coming from farming and nonfarm sources remained constant, in spite of the fact that 30 percent of the group left farming, indicates that the loss in farm income and the gain in nonfarm income for nonfarm respondents were offset by the gain in farm income of the farm group. In view of the difference in the proportions, it also indicates that increases in earned farm income accounted for a larger proportion of the total increase in earned income than increases in nonfarm income. And, as shown in Table 40, earned farm income increased on the average by $2564 while earned nonfarm increased on the average by $2262. While the data show that the farm group experienced a slight increase in nonfarm income, the overall increase in nonfarm income is largely a reflection of the increases made by the nonfarm group (Table 40).

Disregarding the expected differences in the role of farm and nonfarm sources in 1967, there appeared to be only two noteworthy differences between the farm and nonfarm groups in relation to the sources from which their incomes were derived in the two years. One is simply that in both years the average value of gifts received by the farm group was larger than the average value of gifts received by the nonfarm group. The other concerns the proportion of total earned income accounted for by the wife's nonfarm labor income. In the entry year, wife's nonfarm labor income accounted for about 7 percent of the total income earned by the farm group

Table 40. Total income per entrant from farm and nonfarm sources for the entry year and 1967, by 1967 employment status

Income item	Farm (n=112)			Nonfarm (n=46)			Total (n=158)		
	Entry year	1967	Change	Entry year	1967	Change	Entry year	1967	Change
Farm									
Net farm income, excluding gifts	$2589	$7240	$4651	$2526	$ 0	$-2526	$2568	$5132	$2564
Gifts of farm items	569	166	-403	489	0	-489	545	118	-427
Net farm income, including gifts	3158	7406	4248	3015	0	-3015	3113	5250	2137
Nonfarm									
Entrant's nonfarm labor income	1529	1771	242	1488	6241	4753	1517	3072	1555
Wife's nonfarm labor income	330	575	245	408	1536	1128	353	855	502
Other nonfarm income	175	352	177	217	489	272	187	371	184
Total nonfarm income, excluding gifts	2034	2698	664	2113	8266	6153	2057	4319	2262
Gifts of nonfarm items	372	164	-208	137	49	-88	304	130	-174
Nonfarm income, including gifts	2406	2862	456	2240	8315	6075	2361	4449	2088
Total family income									
Total family income, excluding gifts	4623	9938	5315	4629	8266	3637	4625	9451	4826
Total gifts	941	330	-611	626	49	-577	849	248	-601
Total family income, including gifts	5564	10268	4704	5255	8315	3060	5474	9699	4225

and about 9 percent of that earned by the nonfarm group. Thus, when both groups were farming, there was little difference between them with respect to the proportion of total earned income accounted for by wife's nonfarm labor income. In 1967, wife's nonfarm labor income still accounted for only a small proportion, about 6 percent, of the total income earned by the farm group. However, for the nonfarm group, wife's nonfarm labor income accounted for nearly 19 percent, or about one-fifth of the total earned income in 1967 (Table 40). This difference is probably partly a reflection of location-associated differences in the nonfarm employment opportunities available to wives as well as an indication that time spent by farm wives at income-earning activities was most likely spent on the home farm.

As might be expected, there were large differences among the employment status classes (the four classes resulting from the classification of 1967 farm operators by both entry year and 1967 employment status) in relation to the proportion of total earned income coming from farming and the proportion coming from nonfarm sources. Given the proportion coming from farming, the proportion coming from nonfarm sources is obvious. Therefore, only the differences in the proportion coming from farming will be pointed out here. Net farm income, nonfarm income, total family income and gifts per entrant are shown in Table 61 (Appendix A) for both the entry year and 1967, by entry year and 1967 employment status.

These data shown that those who were full-time farmers in both years derived 89 percent of their total earned income from farming in the entry year, and that they increased this proportion to nearly 97 percent in

1967. In contrast, those who were part-time farmers in both years obtained only 21 percent of their total entry year earnings from farming, and only about 37 percent of their 1967 earnings came from farming. For the group which shifted from part-time farming in the entry year to full-time farming in 1967, the proportion coming from farming increased from 69 percent in the entry year to over 93 percent in 1967. On the other hand, the group which shifted from full-time farming in the entry year to part-time farming in 1967 experienced a decline in the proportion coming from farming. For this group, the proportion was nearly 77 percent in the entry year, but only about 66 percent in 1967.

Viewed individually, probably the most noteworthy of the above findings is that on the average income from farming accounted for only about 37 percent of the total 1967 earnings of those who were part-time farmers in both years. In light of the fact that 7 to 8 years had passed since entry into farming and the fact that this group continued about one-third of the 1967 farm operators, the smallness of this proportion might suggest either that the process of getting established as a full-time farmer is quite a lengthy one for a rather large proportion of the beginning entrants or that a rather large proportion of the beginning entrants became established as part-time farmers. Of course it is also possible that part of the group fits into one category and part into the other. Since it was found that some of the entrants in this group were heavily dependent on farming for income in 1967 while others were heavily dependent on nonfarm sources, it is likely that both possibilities are partially true.

B. Net Worth Progress

1. Annual absolute changes and annual rates of change

Although a number of different net worth progress indicators were computed, the following discussion is primarily based on only two. These two are (a) the average annual absolute change in net worth, including the entry year and gifts and (b) the average annual rate of change in net worth, including the entry year and gifts. While data relating to the other progress indicators are also displayed in Tables 41, 42 and 43, only general comments will be made in regard to these data. All means, medians and distributions referred to in the following discussions are based on the two progress indicators designated above.

As with income progress, there was also wide variation in the net worth progress experienced by the beginning entrants (Tables 41 and 42). Again, a rough indication of the variation is the range in the progress indicators. The average annual absolute change in net worth ranged from a decrease of $3020 per year to an increase of $30,610 per year while the average annual rate of change ranged from a decrease of 21.5 percent per year to an increase of 89.3 percent per year.

For the group as a whole, the mean average annual absolute change in net worth was $3150 per year. However, the median was only $2320 per year, indicating a positively skewed distribution as can be seen in Table 41. The mean average annual rate of change was 22.2 percent, while the median was 20.5 percent, also indicating a positively skewed distribution (Table 42).

As might have been expected, there were extremely large differences

Table 41. Distribution of beginning entrants, by average annual absolute change in net worth including gifts and 1967 employment status

Net worth change (dollars/year)	Farm				Nonfarm				Total			
	Including entry year		Excluding entry year		Including entry year		Excluding entry year		Including entry year		Excluding entry year	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
-1000 or below	1	.9	1	.9	0	0.0	3	6.5	1	.6	4	2.5
-999 to -1	3	2.7	4	3.6	10	21.7	11	23.9	13	8.2	15	9.3
0 to 1999	29	25.9	30	26.8	31	67.4	27	58.7	60	38.1	57	36.1
2000 to 3999	39	34.8	36	32.2	1	2.2	1	2.2	40	25.3	37	23.5
4000 to 5999	15	13.4	14	12.5	2	4.3	2	4.3	17	10.8	16	10.2
6000 to 7999	12	10.7	11	9.8	1	2.2	1	2.2	13	8.2	12	7.6
8000 to 9999	7	6.2	7	6.2	0	0.0	0	0.0	7	4.4	7	4.4
10,000 or above	6	5.4	9	8.0	1	2.2	1	2.2	7	4.4	10	6.3
Total	112	100.0	112	100.0	46	100.0	46	100.0	158	100.0	158	100.0
Mean	4040		4230		990		960		3150		3280	
Median	2830		2990		630		550		2320		2170	

Table 42. Distribution of beginning entrants, by annual rate of change in net worth including gifts and 1967 employment status

Annual rate of change (percent/year)	Farm				Nonfarm				Total			
	Including entry year		Excluding entry year		Including entry year		Excluding entry year		Including entry year		Excluding entry year	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
-10.0 or below	0	0.0	1	1.0	5	11.4	3	7.0	5	3.2	4	2.6
-9.9 to -0.1	3	2.7	3	2.7	3	6.8	9	20.9	6	3.9	12	7.8
0.0 to 9.9	9	8.2	15	13.5	16	36.4	16	37.2	25	16.2	31	20.1
10.0 to 19.9	30	27.3	32	28.8	8	18.2	10	23.2	38	24.7	42	27.3
20.0 to 29.9	29	26.4	37	33.3	7	15.9	2	4.7	36	23.4	39	25.3
30.0 to 39.9	15	13.6	11	9.9	3	6.8	3	7.0	18	11.7	14	9.1
40.0 to 49.9	15	13.6	5	4.5	2	4.5	0	0.0	17	11.0	5	3.2
50.0 or above	9	8.2	7	6.3	0	0.0	0	0.0	9	5.9	7	4.6
Total[a]	110	100.0	111	100.0	44	100.0	43	100.0	154	100.0	154	100.0
Arithmetic mean	26.7		22.2		10.9		5.8		22.2		17.6	
Median	23.2		21.0		7.6		5.1		20.5		16.4	

[a]Difference in total observations for rate of change and absolute change, Table 41, is due to negative net worths which did not permit calculation of rate of change.

between the farm and nonfarm groups in relation to net worth progress. For the farm group the mean average annual absolute change in net worth was $4040 per year. In contrast, that of the nonfarm group was only $990 per year. A similar difference is indicated by the mean average annual rate of change in net worth. While the farm group increased their net worth on the average by 26.7 percent per year, the nonfarm group increased theirs on the average by only 10.9 percent per year. While both groups were characterized by a wide variation in net worth progress, the variation in the farm group appeared to be greater than that in the nonfarm group.

What explains this large difference in net worth gains for farm and nonfarm respondents? Firstly, much of the difference is undoubtedly a reflection of occupation-associated differences in the quantity of financial resources required for the generation of income. In contrast to many nonfarm occupations where only labor is required to generate income, farming usually requires a large quantity of financial resources in addition to labor. Thus, farm respondents were very likely under much greater pressure to accumulate capital than nonfarm respondents. Secondly, the previous findings indicating that the farm group had larger absolute increases in income during the period than the nonfarm group might also explain part of the difference. Thirdly, there was also some evidence which indicated that occupation-associated differences in the quantity of capital required for income generation may not have been the only factor contributing to the apparent difference in the propensity of the two groups to save. In the entry year, both groups were farm operators, and both groups were about equally dependent on farming for

income. Therefore, occupational-differences in the quantity of capital required for income generation should not have been among the factors contributing to differences in the proportion of total income saved by the two groups. Yet, in spite of the fact that the mean entry year incomes of the two groups were approximately equal, there was evidence that the farm group saved a larger proportion of their income than the nonfarm group (page 52).

In connection with the implied association between the proportion of income saved and occupational differences in the quantity of financial resources required for income generation, it is interesting to note the differences in the mean average annual absolute change in net worth including the entry year and the mean excluding the entry year. In view of the large increases in income experienced by both the farm and nonfarm groups, it seems safe to assume that both groups had lower incomes in the entry year than they had on the average in the remaining years of the period. Inasmuch as the level of savings is associated with the level of income, it might be expected that increases in net worth would have been smaller in the entry year than they were on the average in the remaining years of the period. For the farm group the difference between the mean average annual absolute change in net worth including the entry year and the mean excluding the entry year (Table 41) is consistent with the above reasoning. However, for the nonfarm group, the difference suggests larger increases in net worth in the entry year than on the average in the remaining years of the period. Since the entry year was the only year in which all of the nonfarm respondents were farming, it seems likely that the larger increases in net worth in the entry year are an indication of

the pressure they were under to accumulate capital for investment in their farming operations.

Large differences in net worth progress were found among the four employment status classes within the farm group. Those who were full-time farmers in both years had the largest gain in net worth with a mean average annual absolute increase of $5550 per year. In contrast, the smallest increases in net worth were made by those who were part-time farmers in both years. Their mean average annual absolute increase was only $2990 per year. Those who shifted from part-time in the entry year to full-time in 1967 had the second highest gains in net worth with a mean average annual increase of $4170 per year, while the mean for the group which shifted from full-time to part-time was $3920 per year (Table 43). It is interesting to note that ranking these four classes of farm operator's by their mean annual absolute change in net worth produces the same order as ranking them by their mean annual absolute change in net farm income, which again serves to emphasize the association between capital accumulation and income generation in farming.

With one exception, similar differences in net worth progress were found among the four classes when rate of change was used as the progress indicator. The one exception was that the group which shifted from full-time to part-time farming had about the same mean annual rate of change in net worth as the group which shifted from part-time to full-time farming (Table 43); whereas, the former group had a substantially larger mean absolute gain in net worth than the latter. This difference is attributable to the fact that, on the average, the entry net worth of those in the full-time to part-time group was considerably larger than the entry net worth of

Table 43. Net worth progress of 1967 farm operators by entry year and 1967 employment status

Measures of progress	Full-time entry			Part-time entry			Total		
	Full-time 1967	Part-time 1967	Total	Full-time 1967	Part-time 1967	Total	Full-time 1967	Part-time 1967	Total
n[a]...	24	5	29	43	40	83	67	45	112
Mean annual absolute change in net worth:[b]									
Including entry year and gifts	5550	3920	5270	4170	2990	3600	4670	3090	4040
Excluding entry year and including gifts	5860	3840	5510	4410	3100	3780	4930	3180	4230
Excluding entry year and gifts	5940	4090	5620	4360	3090	3750	4930	3200	4240
Mean annual rate of change in net worth:[c]									
Including entry year and gifts	35.1	20.0	32.4	28.6	20.8	24.9	30.8	20.7	26.8
Excluding entry year and including gifts	30.9	16.4	28.4	23.1	16.5	20.0	25.9	16.5	22.2
Excluding entry year and gifts	31.5	18.2	29.1	23.7	17.0	20.5	26.4	17.1	22.7

[a]The n's for the measures of rate of change differed slightly due to two cases of negative net worth which did not permit computation of rates of change.

[b]Dollars per year.

[c]Percent per year.

those in the part-time to full-time group.

The comparison of the measures of net worth progress which excluded both the entry and gifts with the measures which excluded the entry year but included gifts indicates that in general the direct effect of gifts on the net worth progress of the 1967 farm operators was relatively insignificant (Table 43).

2. Selected characteristics of net worth and net worth change

For the beginning entrant group as a whole, the mean net worth was $9,498 on Dec. 31 of the entry year and $33,680 on Dec. 31, 1967, indicating a $24,182 increase over the period. This increase resulted from a $30,596 increase in total assets and a $6,414 increase in liabilities (Table 44).

As would be expected in view of the large differences found in the net worth progress of the farm and nonfarm groups, there was an extremely large difference in the 1967 ending net worth of the two groups. The mean 1967 ending net worth of the farm group was $41,392 while that of the nonfarm group was only $14,900. The mean for the farm group represented a $31,200 increase over the mean of $10,192 on Dec. 31 of the entry year; and, the mean for the nonfarm group reflected a $7,091 increase over their mean net worth on Dec. 31 of the entry year (Table 44).

Looking first at the net worth summary of the nonfarm group, it is seen that nonfarm real estate made up 68 percent and other nonfarm assets (largely household goods, cash, and automobiles) made up 32 percent of all assets owned by the nonfarm group in 1967. Real estate debt was the main liability, accounting for about 85 percent of the total liabilities of the group. However, the net equity value of nonfarm real estate still

Table 44. Summary of the ending net worth of beginning entrants for the year of entry and 1967, by 1967 employment status

Net worth item	Farm			Nonfarm			Total		
	Entry year	1967	Change	Entry year	1967	Change	Entry year	1967	Change
Farm operating assets	8,211	26,441	18,230	6,346	XXX	-6,346	7,668	18,743	11,075
Farm land and buildings	4,839	20,474	15,635	2,813	XXX	-2,813	4,249	14,513	10,264
Total farm assets	13,050	46,915	33,865	9,159	XXX	-9,159	11,917	33,256	21,339
Nonfarm real estate	878	2,846	1,968	1,513	15,674	14,161	1,063	6,582	5,519
Other nonfarm assets	3,581	7,176	3,595	3,289	7,376	4,087	3,496	7,234	3,738
Total nonfarm assets	4,459	10,022	5,563	4,802	23,050	18,248	4,559	13,816	9,257
Total assets	17,509	56,937	39,428	13,961	23,050	9,089	16,476	47,072	30,596
Real estate mortgage	2,532	8,650	6,118	2,565	6,904	4,339	2,542	8,142	5,600
Other liabilities	4,785	6,895	2,110	3,587	1,246	-2,341	4,436	5,250	814
Total liabilities	7,317	15,545	8,228	6,152	8,150	1,998	6,978	13,392	6,414
Net worth	10,192	41,392	31,200	7,809	14,900	7,091	9,498	33,680	24,182

accounted for about 58 percent of the 1967 net worth of the group. Most nonfarm real estate owned by the group in 1967 was owned for residential purposes.

As a result of the shift from farming to nonfarm employment, there were of course large differences in the composition of entry year and 1967 net worth. Also, in association with the shift there was apparently a conversion of net equity in farm assets into net equity in nonfarm assets, since the difference in the increase in nonfarm assets and the increase in liabilities would indicate a much larger increase in net worth than actually occurred.

Turning now to the farm group, it is seen that farm assets made up about 83 percent and nonfarm assets made up 17 percent of all assets owned by the group in 1967. Farm operating assets (livestock, crops, inventories, machinery and equipment) accounted for 56 percent and farm land and buildings accounted for 44 percent of total farm assets. Nonfarm real estate composed about 28 percent and other nonfarm assets (largely household goods and cash) composed 72 percent of total nonfarm assets (Table 44).

The data also indicate that the increase in net worth for the farm group was largely a result of the increase in the net equity value of farm assets. Even under the assumption that all increases in liabilities reflected increases in the debt against farm assets, the change in the net equity value of farm operating assets accounts for over 51 percent and the change in the net equity value of farm land and buildings accounts for over 30 percent of the total increase in net worth (Table 44). Therefore, at a

minimum, 81 percent of the increase in net worth of the farm group was a result of increases in the net equity value of farm assets.

Because of the large proportion of net worth increase accounted for by the increase in the value of farm land and buildings, and because the average value per acre of Iowa farm land and buildings rose by slightly over 48 percent during the 1959-60 to 1967 period (16), it was felt that capital gains associated with the ownership of land could have had a significant effect on the gains in net worth for the farm group. In an attempt to obtain an estimate of this effect, estimates of the capital gains on land owned at the time of entry into farming and land purchased during the period were made. The estimate of capital gains on land owned at the time of entry into farming was made under the assumption that the value of land owned at the time of entry increased at the same rate as the average value per acre of all Iowa farm land during the 1959-60 to 1967 period. However, two additional assumptions were necessary to make an estimate of the capital gains on land purchased during the period. Since only the total number of acres purchased during the period was obtained from the respondents, it was first assumed that an equal proportion of the total acres purchased was purchased in each year of the period. Secondly, it was assumed that the value per acre of the land purchased was the same as the average for the state during the year purchased. Under these assumptions and using estimates of the average value per acre of all Iowa farm land found in Murray and Magill (16), an estimate was made of the capital gains on land purchased during the period.

The results indicated that capital gains during the period on land

owned at the time of entry and land purchased during the period amounted to approximately $5100 per entrant. This suggests that capital gains on farm land and buildings contributed about $680 per year to the net worth of the farm respondents, which would account for nearly 17 percent of the mean average annual absolute change in net worth (including gifts and the entry year) experienced by the group. However, only about 44 percent of the group were land owners in 1967. Therefore, the effect for those who benefitted from the capital gains was actually much greater. Dividing by .44 indicates that, on the average, capital gains on farm land and buildings contributed about $1550 per year to the net worth of the land owners. While it must be admitted that these are rough estimates, they do strongly suggest that capital gains on farm land and buildings had a substantial effect on the increases in net worth shown for the farm group as a whole, and an even greater effect on the gains in net worth of land owners.

X. MULTIPLE REGRESSION ANALYSIS

The primary objective of the multiple regression analysis was to aid in explaining variation in financial progress within the farm and nonfarm groups by detecting any significant relationship between the dependent variables, income change and net worth change, and the selected independent variables. The selection of independent variables was mainly based upon a priori considerations. Also, as was pointed out earlier, the farm and nonfarm groups differed with regard to the sources of their income and, therefore, the pressure which they were under to accumulate assets for income-generation. Thus, it was expected that some of the variables which might be important in explaining variation in financial progress for the farm group would not be important in explaining the variation in progress within the nonfarm group, and vice versa. For this reason the two groups were treated separately in the regression analysis.

A. Farm Group: Income Progress

1. Explanation of variables and expected relationships

The variables used in the multiple regression analysis of income progress for the farm group and their means are displayed in Table 45. The absolute difference between entry year and 1967 net farm income excluding gifts, Y_1, and the absolute difference between entry year and 1967 total family income excluding gifts, Y_2, were selected as the dependent variables or measures of income progress. The independent variables X_1 through X_{14} were regressed on the change in net farm income, and all 17 independent variables were regressed on the change in total family income.

Table 45. Descriptions and means of variables used in the regression analysis of the income progress experienced by the farm group (112 farm operators)

Designation		Means of variables
Y_1	Change in net farm income, excluding gifts ($)	4680
Y_2	Change in total family income, excluding gifts ($)	5357
X_1	Change in value of owned land employed ($)	15087
X_2	Change in value of rented land employed ($)	52128
X_3	Change in value of owned operating capital employed ($)	18010
X_4	Change in value of short-term capital input ($)	1681
X_5	Change in family labor used on the farm (days)	23.84
X_6	Investment in postentry training (hours)	67.05
X_7	Index of investment in information gathering activities (number of sources used regularly)	6.04
X_8	Semesters of formal agricultural training before entry	2.33
X_9	Total value of gifts received during the period ($)	2421
X_{10}	Entry age (years)	27.03
X_{11}	Years of formal schooling completed at the time of entry	11.21
X_{12}	Entry year total family income including gifts ($)	5565
X_{13}	Total value of land operated in the entry year ($)	39430
X_{14}	1967 employment status (0 = full-time farmer and 1 = part-time farmer)	.4018
X_{15}	Change in respondent's off-farm labor input (days)	-50.44
X_{16}	Change in wife's off-farm labor input (days)	4.91
X_{17}	Change in the value of nonfarm income-earning assets ($)	1229

The independent variables X_1 to X_5 were used as measures of the changes between the entry year and 1967 in the land, labor, and capital inputs into the farming operation.[11] A priori it was expected that the addition of a unit of owned land would result in a larger increase in the operator's income than the addition of a unit of rented land. The reason being that the operator receives the earnings (economic rent or profits) that accrue to owned land as a factor of production; whereas, the earnings that accrue to rented land are presumably transferred to the land owner via a rental payment. Therefore, the change in the input of owned land, X_1, and the change in the input of rented land, X_2, were entered into the regressions as separate variables. The change in the value of land employed was used in each case in an attempt to incorporate into one variable a measure of both the change in quality and the change in quantity of the land input. The entry year and 1967 ending inventories of livestock, crops and machinery and equipment were used to determine X_3, change in owned operating capital employed. The estimate of change in the short-term capital input, X_4, was based on half of the entry year and 1967 expenditures for fertilizer, herbicides, pesticides and commercial feed. The estimate was based on only half of these expenses to

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[11] In estimating the entry year and 1967 levels of these inputs for respondents who operated in partnership, the proportion of the total of each input into the partnership operation which was allocated to the respondent was based on the proportion of the total income from the partnership operation received by the respondent. For example, if the respondent received one-half of the income from the partnership operation, one-half of the land, labor and capital inputs into the operation were allocated to the respondent.

adjust for the fact that investments in these forms typically tie up capital for only about half of the year while during the other half of the year the capital could be used for other purposes. Change in the number of days of family labor used on the farm, X_5, is self explanatory.

In the resurvey of the group, each respondent was asked, "Since entering farming, have you taken or participated in any organized training or educational program?" If the response was positive, information regarding the kinds of programs in which the respondent participated, the types of training taken and an estimate of the amount of time spent at each type of training was obtained. Adult education classes and extension short courses were the two most frequently reported kinds of programs participated in and, agricultural training (training related to farm practices or farm management) was the most frequently reported type of training taken. However, there was wide variation in both the kinds of programs reported and the types of training taken. Because of these variations, it is likely that the estimate of time spent getting training is a rather poor indicator of the investment in post-entry training, especially in connection with its employment in the change in farm income regression equation since some of the training was for non-farm occupations. However, lacking a sound basis from which to make adjustments for variation in the kind of program participated in and the type of training taken, the number of hours spent getting training was used as a measure of the investment in post-entry training and was entered into the regressions as independent variable X_6.

Independent variable X_7, index of investment in information gathering activities, is simply the sum of the number of sources which

the respondent reported he used regularly to obtain information on farming practices and the number of sources he reported he used regularly to obtain information on farm prices and markets (page 122). As with investment in post-entry training, it must be admitted that the method of measurement lacks refinement and results in only a rough indicator of the factor being measured.

Semesters of formal agricultural training before entry, X_8, includes any semester in which the respondent was in school and in which one or more courses in agriculture were taken.

The remaining independent variables, X_9 to X_{17}, are adequately defined by the descriptions provided in Table 45 and elsewhere in the text.

Most of the independent variables were thought to be positively related to change in income. Certainly, increasing the physical inputs into the farming operation would be expected to positively affect change in income, especially increases in X_1, X_3, X_4 and X_5. However, in theory only if the contract rent were less than the return to rented land as a factor of production (economic rent) would the operator receive a return on rented land. Therefore, the effect of X_2 on change in net farm income was considered uncertain.

Under the assumption that X_6, X_7, X_8 and X_{11} were positively related to the level of management ability (actually change in the level in the case of X_6, investment in post-entry training), these variables were expected to be positively related to change in income.

Findings of past studies indicate that for many entrants family assistance has played an important role in the process of getting started

in farming. Furthermore, this study found some evidence that it may help determine who stays in farming. In light of these findings, it seems probable that family assistance would also help to determine financial progress. As measured here, total value of gifts received during the period, X_9, only takes into consideration those forms of family assistance to which a monetary value could be assigned. Since much of this family assistance was in the forms of gifts or inheritances of land, operating assets, and cash, it is very likely that family assistance had an effect on the change in income through increases in capital inputs. However, measures of the change in capital inputs were among the independent variables already included in the equation. Therefore, the significance of the addition of X_9 to the equation was considered questionable since it would add to the regression only if it had an effect on the change in income in another manner besides through increasing capital inputs.

Entry age, X_{10}, was expected to be negatively associated with change in income in light of the historical age-experience pattern which indicates that the rate of gain in income for individuals decreases with age.

Entry year total family income, X_{12}, was expected to be positively associated with change in income for two reasons. Firstly, it was thought that the level of income in the first year of farming might be an indicator of the success of the entrant in his first year of farming. Therefore, it was expected that those with the higher incomes in the entry year, i.e., "the more successful entrants," would have also made larger gains in income over the period. Secondly, other things equal, those with the higher incomes should have been in a better position

financially to save more for investment in farming assets which could be used to generate income in the future. However, again the fact that measures of the change in capital inputs have already been taken into account must be considered.

In some of the past studies of beginning farmers, the acquisition of land has been reported as one of the major problems faced by beginning farmers (1, 18 and 19). In others, size of farm has been found to be directly related to either the level of income or to financial progress (6 and 26). Therefore, one might expect that those who started on larger farms and/or with higher quality land would have had an advantage over those starting on smaller farms and/or with lower quality land. For this reason, total value of land operated in the entry year, X_{13}, was expected to be positively related to change in income.

As was shown earlier, the sample means indicated a large difference in the absolute change in net farm income for 1967 full-time farmers and that for 1967 part-time farmers. This difference might only reflect employment status-associated differences in the change in inputs. However, in an attempt to determine whether or not there may have been other factors (apart from those included in the regression) associated with employment status which contributed to the difference, 1967 employment status, X_{14}, was included among the independent variables.

Under the persisting condition of underemployment of labor in agriculture, a unit of nonfarm labor has generally earned a higher wage than a unit of farm labor. Furthermore, these beginning farmers generally started with a much lower capital to labor ratio than the average farmer.

Therefore, it was suspected that, even with allowing for additions to their capital stock during the period, many of them could have shifted labor from their farming operation to nonfarm employment without having encountered a problem of overemployment of labor in their farming operations. Thus, it was expected that both the change in the respondent's and the wife's off-farm labor input (X_{15} and X_{16}, respectively) would be positively related to change in total family income.

It might be expected that the change in the value of nonfarm income-earning assets, X_{17}, would have a positive effect on change in total family income.

This completes the explanation of the variables and their expected relationships for the regression analysis of income progress for the farm group. However, before presenting and analyzing the results of the income regressions for the group, it needs to be emphasized that all of the above hypothesized relationships as well as those for the remaining regressions were made under the "ceteris paribus" assumption and, therefore, are subject to the limitations which accompany this unrealistic assumption. Furthermore, it should be recognized that regardless of the relationships indicated by the regression equation, the regression analysis itself can only indicate the characteristics of each relationship when the other independent variables are taken into consideration. Thus, if an independent variable effects the dependent variable indirectly through its effect on one of the other independent variables, it is possible for the regression analysis to suggest that no relationship exists when, in actuality, one does exist.

2. Change in net farm income

The beta values and t-values of the independent variables for three multiple regression equations constructed to explain variation in the change in net farm income of 112 of the 1967 farm operators are displayed in Table 46. The independent variables X_1 through X_{13} were selected for the first regression equation, R.1. In the second, R.2, the variables X_8, X_9, X_{10}, X_{11} and X_{13} were dropped from the equation and X_{14} was added. In the third, R.3, only the independent variables which were measures of differences between the entry year and 1967 (X_1 through X_6) were included in the regression equation. This was done with the hope that it might give some indication as to whether differences at the time of entry or changes which occurred during the period were more important in explaining variation in net farm income.

Based on the results of these three regressions, it appears that only X_1, X_3, X_4, X_{11} and X_{12} were significantly related (statistically significant at $\alpha = .10$ or lower) to the change in net farm income.

In all three regressions, the beta values for change in the value of owned land employed, X_1, and the change in the value of operating capital, X_3, were found to be significant at $\alpha = .01$. As hypothesized, these two variables were positively related to change in net farm income. The beta values for these two variables indicate that net farm income increased by about 7 cents for each dollar increase in the value of owned land employed and by approximately 12.5 or 13 cents for each dollar increase in the value of owned operating capital employed. The change in the short-term capital input, X_4, was found to be significant at $\alpha = .05$ in all three

Table 46. Beta values and t-values of the independent variables for three multiple regression equations explaining variation in the change in net farm income of the 1967 farm operators

Independent variable	Beta values R.1	Beta values R.2	Beta values R.3	t-values R.1	t-values R.2	t-values R.3
X_1	.0732	.0723	.0665	4.766[a]	5.073[a]	4.694[a]
X_2	.0043	.0051	.0058	0.689	0.855	0.973
X_3	.1228	.1361	.1289	3.849[a]	4.338[a]	4.164[a]
X_4	.5255	.4689	.4667	2.342[b]	2.161[b]	2.141[b]
X_5	-.5029	-.8695	-.5310	-0.167	-0.292	-0.183
X_6	.3690	.5002	.4234	0.263	0.354	0.305
X_7	-227.1987	-157.3962		-1.506	-1.083	
X_8	-82.3676			-0.675		
X_9	-.0148			-0.274		
X_{10}	18.5487			0.410		
X_{11}	322.9225			1.778[c]		
X_{12}	-.2753	-.2061		-2.285[b]	-1.781[c]	
X_{13}	.0204			1.369		
X_{14}		107.8334			0.134	
Intercept (b_o)	-1553.9081	2125.0587	249.8569			

[a]Significant at $\alpha = .01$.

[b]Significant at $\alpha = .05$.

[c]Significant at $\alpha = .10$.

regressions. Again, the independent variable was indicated to be positively related to the change in net farm income as expected. These beta values indicate that with each dollar increase in short-term capital, net farm income increased by roughly 50 cents.

Based on the results of regression R.1, the beta value for years of formal education, X_{11}, was significant at $\alpha = .10$. Again, the direction of the relationship was consistent with that which was expected. The beta value indicated that an additional increase in net farm income of $323 was associated with each additional year of formal education completed by the operator at the time of entry.

The results of regression R.1 indicate the beta value for X_{12}, entry year total family income, to be negative and significant at $\alpha = .05$. Since this negative association is opposite of that which was expected, there must have been other factors leading to the association besides those on which the original hypothesis was based. If so, what were these other factors?

As pointed out earlier, those who were part-time farmers in 1967 had much smaller changes in net farm income, on the average, than those who were full-time farmers in 1967. Thus, if the part-time farmers had had the higher total family incomes in the entry year, it might partly explain the negative association between level of total family income in the entry year and change in net farm income. It was previously stated that the average total family income for the two groups was approximately equal. However, the distribution of the 1967 full-time farmers by entry year total family income was more positively skewed than the distribution

of 1967 part-time farmers. In other words, although the average income for the two groups was approximately equal, a larger proportion of the 1967 part-time farmers than of the 1967 full-time farmers had above average incomes in the entry year. Thus, this may partly explain the negative association between entry year total family income and change in net farm income.

Consistent with this hypothesis is the fact that in regression R.1 the beta value for X_{12} was -.2753 and significant at $\alpha = .05$; however, when 1967 employment status was included among the independent variables in regression R.2, the beta value for X_{12} dropped (in absolute value) to -.2061 and was significant at $\alpha = .10$, not at $\alpha = .05$ as in regression R.1 (Table 46).

While this may partly explain the negative association between total family income and change in net farm income, the fact that X_{12} was still significant in regression R.2 when employment status was included among the independent variables suggests that there must have been additional factors contributing to the negative association. However, no attempt was made to identify these additional factors.

Of the insignificant variables (insignificant at $\alpha = .10$), variables X_2, X_6, and X_{13} had beta values which suggested that if any association existed between these variables and the dependent variable, they were consistent with those which were hypothesized. However, of these three only the t-value for X_{13} (Regression R.1, Table 46) was high enough to suggest more than a 50 percent probability that the indicated relationship was not just a random happening. On the other hand, variables X_5, X_7, X_8,

X_9 and X_{10} had beta values which suggested that if associations existed between these variables and the independent variable, they were opposite those which were hypothesized. However, again only one, X_7, had a t-value which was high enough to suggest more than a 50 percent probability that the indicated relationship was not due to pure chance.

Independent variable X_{14}, 1967 employment status, was also among the insignificant variables. Therefore, it seems justifiable to conclude that the apparent differences in the change in net farm income for 1967 full-time farmers and 1967 part-time farmers was a reflection of employment status-associated differences in the variables included in regression R.2 (most likely differences in the change in inputs as measured by X_1, X_3 and X_4) rather than differences in other factors which may have been associated with employment status.

While much could be said about the insignificant variables, especially in regard to the direction of their indicated associations with change in net farm income, the most important factor is that they were insigificant in these regressions. In other words, when those variables which were significant are taken into consideration, the insignificant variables apparently add very little to the explanation of the variation in change in net farm income.

This point is further emphasized by the comparison of the overall results of the three regressions (Table 47). For example, the comparison of the multiple R^2's for regressions R.1 and R.3 indicates that when the variables X_1 through X_6 are taken into consideration, the variables X_7 through X_{13} only explain an additional 3.4 percent of the total variation

in the change in net farm income. While it is possible that some of these variables could have had an effect on the change in net farm income indirectly through effects on changes in X_1, X_3 and X_4, a more refined analysis would be necessary to determine whether or not this was the case.

This comparison also demonstrates that although variables X_{11} and X_{12} were significant, they apparently contributed only slightly to the overall R^2 of regression R.1.

In summary, it appears that the following are the most important inferences which can be drawn from the results of the three regressions: (1) changes in the inputs of owned land (X_1), owned operating capital (X_3) and short-term capital (X_4) were quite important in explaining variation in the change in net farm income. Considering that the other three variables which were included in regression R.1 were insignificant, it appears that these three variables could explain nearly 65 percent of the total variation in the change in net farm income (Tables 46 and 47). (2) While the t-values indicate that both years of formal schooling (X_{11}) and entry year total family income (X_{12}) were significant, they appeared to explain only a very small proportion of the total variation in the change in net farm income. Perhaps for this reason one should not attach a great deal of importance to the negative association of X_{12}. (3) Except for variables X_7 and X_{13}, there appeared to be little probability of a "direct" association between any of the other independent variables and the change in net farm income. (4) If inferences 1, 2, and 3 are valid, taken together, they seem to indicate that unless the variables measuring differences at the time of entry (X_8, X_{10}, X_{11}, X_{12}

Table 47. Comparison of the overall results of the three regression equations explaining variation in the change in net farm income of 112 farm operators

Item of comparison	Regression equation R.1	R.2	R.3
Multiple R^2	.681	.665	.647
Computed F	16.08	22.44	32.08
Tabular $F_{.001}$	3.31	3.69	4.37

and X_{13}) had some effect on the change in net farm income indirectly through effects on variables X_1, X_3 and X_4, they were of only minor importance in explaining variation in the change in net farm income. (5) The fact that in all three regressions roughly one-third of the variation in the dependent variable is left unexplained indicates there were additional factors which attributed to the variation in the change in net farm income.

3. Change in total family income

The beta values and t-values for the independent variables of two multiple regression equations constructed to explain variation in the change in total family income for the farm group are shown in Table 48. In the first regression, R.1, all 17 of the independent variables were used. In the second regression, R.2, only those variables which were measures of differences between the entry year and 1967 (variables X_1 through X_6 and X_{15} through X_{17}) were included.

Table 48. Beta values and t-values of the independent variables for two multiple regression equations explaining variation in the change in total family income of the 1967 farm operators

Independent variable	Beta values R.1	Beta values R.2	t-values R.1	t-values R.2
X_1	.0611	.0536	3.923[a]	3.616[a]
X_2	.0014	.0044	0.231	0.675
X_3	.1550	.1334	4.650[a]	4.020[a]
X_4	.4219	.4092	1.847[b]	1.790[b]
X_5	.8006	1.6274	0.240	0.502
X_6	.9065	2.1091	0.621	1.451
X_7	-197.6578		-1.269	
X_8	118.2962		0.947	
X_9	-.0074		-0.141	
X_{10}	-42.5988		-0.868	
X_{11}	168.8237		0.897	
X_{12}	-.2422		-1.929[b]	
X_{13}	.0044		0.300	
X_{14}	2831.4752		3.120[a]	
X_{15}	6.1580	11.5601	1.414	3.002[a]
X_{16}	8.0092	9.9886	2.204[c]	2.691[a]
X_{17}	.1953	.1662	3.700[a]	3.772[a]
Intercept (b_o)	1042.8473	1377.2175		

[a]Significant at $\alpha = .01$.

[b]Significant at $\alpha = .10$.

[c]Significant at $\alpha = .05$.

As pointed out in Chapter IX, the change in net farm income, on the average, accounted for slightly over half of the change in total family income for the farm group. Therefore, it was expected that those variables which were important in explaining variation in net farm income

would also be important in explaining variation in total family income. For the most part, the results of the two regressions on total family income support this expectation.

Of the variables which were significant in the regressions on change in net farm income (X_1, X_3, X_4, X_{11} and X_{12}, only X_{11}, years of formal schooling, was not significant at $\alpha = .10$ or lower in the regressions on change in total family income (Table 48). Thus, it appears that inasmuch as variables X_1, X_3 and X_4 were very important in explaining variation in the change in net farm income, they were also important in explaining variation in the change in total family income. Since X_{11} was significantly related to the change in net farm income, the fact that it was not significantly related to the change in total family income appears to have two implications. Firstly, this seems to indicate that X_{11} had either no association or a negative association with the change in off-farm income; and, secondly, it appears to support the previous implication that X_{11} was of little value in explaining variation in the change in net farm income when the other variables were taken into consideration. Also, while it is important to note that X_{12} was significantly and negatively associated with the change in total family income, whether this was solely a result of its negative association with change in net farm income or whether it was also negatively associated with change in off-farm income cannot be determined with certainty from the results of this analysis. However, in either case, no satisfactory explanation can be given for the negative association.

The results of regression R.1 showed X_{14}, 1967 employment status, to be significantly related to change in total family income. Since X_{14} was assigned a value of zero for 1967 full-time farmers and one for 1967 part-time farmers, the beta value for X_{14} indicates that after the "effects" of the other 16 variables and b_o are accounted for (in equation R.1), an additional $2,831 is added to the estimate in the case of 1967 part-time farmers (Table 48). Since previous findings indicated that these two employment status groups had experienced nearly equal changes in total family income, this difference cannot be a result of the part-time farmers having experienced larger gains in total family income. Furthermore, the regressions on the change in net farm income indicated that any association between employment status and change in net farm income could be explained by other variables in this equation. Therefore, the association between employment status and change in total family income is obviously due to an association between employment status and the change in off-farm income, which apparently cannot be totally explained by the other variables in regression R.1. This then would suggest that there were other employment status-associated factors which should have been included in the regressions to explain the additional employment status-associated variation in off-farm income.

However, since employment status and the change in the entrant's off-farm labor input, X_{15}, were positively correlated (as one would have expected them to have been), it is possible that at least part of the variation in the dependent variable attributed to employment status in equation R.1 was actually due to variation in X_{15}. Although it does not

prove the above hypothesis, the fact that a considerably greater proportion of the variation in the dependent variable is attributed to variation in X_{15} when employment status is excluded from the equation than when it is included (as indicated by the comparison of the beta values for X_{15} in regressions R.1 and R.2) is at least consistent with this hypothesis. Thus, it seems best to conclude that the evidence here is insufficient and further analysis would be required to determine how important other employment status-associated factors may have been in explaining variation in the change in off-farm income.

All three of the variables which were not regressed on the change in net farm income (X_{15}, X_{16} and X_{17}) were found to be significantly related to the change in total family income. However, X_{15} was significant in only one of the regressions, R.2, while the change in the wife's off-farm labor input, X_{16}, and the change in the value of nonfarm income-earning assets, X_{17}, were significant in both regressions (Table 48). As suggested above, the insignificance of X_{15} in regression R.1 may have been due to its correlation with X_{14}. As hypothesized, these three variables were positively associated with change in total family income.

As in the regressions on the change in net farm income, the remaining variables (X_2, X_5, X_6, X_7, X_8, X_9, X_{10} and X_{13}) were all insignificant. Thus, apparently these variables were not important in explaining either variation in the change in net farm income or the change in total family income, at least when the other variables in the regressions are considered.

The overall results of the two regressions are displayed in Table 49. The multiple R^2's indicate that all 17 variables could explain 69.8 percent of the variation in the change in total family income (R.1) and that the nine variables which were measures of differences between the entry year and 1967 could explain 64.0 percent (R.2). As with the regressions on the change in net farm income, the fact that the variables measuring differences at the time of entry (X_{12} included) add very little to R^2 seems to indicate that unless these variables had some effect on the change in total family income indirectly through effects on variables X_1, X_3, X_4, X_{15}, X_{16} and X_{17}, they were of only minor importance in explaining variation in the change in total family income. On the other hand, considering the insignificance of X_2, X_5 and X_6 in regression R.2, the large proportion of the variation explained by this regression suggests the above six variables were quite important in explaining variations in the change in total family income.

Table 49. Over-all results of the two regression equations explaining variation in the change in total family income of 112 farm operators

Item	Regression equation R.1	R.2
Multiple R^2	.698	.640
Computed F	12.80	20.18
Tabular $F_{.001}$	3.08	3.69

B. Farm Group: Net Worth Progress

1. Selection and explanation of variables

The absolute difference between net worth, excluding gifts, on Dec. 31, of the entry year and Dec. 31, 1967 was selected as the dependent variable (Y) or measure of net worth progress. This estimate was selected over the estimate of change in net worth between Jan. 1 of the entry year and Dec. 31, 1967 because it was thought to be based on a more accurate set of data. The reason being that since the data used to prepare the two estimates of entry year net worth were collected at the same time, it was thought that the data for the most recent date would have been recalled with the greater degree of accuracy.

In simple terms, the change in net worth (savings) that accrues over a particular time period should be equal to the income for this period minus consumption. Therefore, variables which were thought to account for variation in these factors were selected as independent variables for the regression equation.

While income might be broken down into a number of different components, for purposes here it was considered to be composed of the following four: (a) profits or economic rent arising from the employment of capital (including owned land) in an income-generating activity, (b) wages or labor earnings, (c) gifts (including inheritance) and (d) capital gains arising from the increase in value of items held in the capital stock.

Since the entry year and 1967 estimates of total family income, excluding gifts, were based only on profits and wages, the average of

these two estimates was used as an estimate of the average annual income from these two sources during the period. The main limitation of estimating the average in this manner is that it gives no consideration to fluctuations which may have occurred in the other years of the period. Thus the accuracy of the estimate is dependent on the extent and direction of any such fluctuations. However, being the best available estimate of the average annual income from profits and wages during the period, it was entered into the regression as independent variable X_1.

Since an estimate of the value of gifts received during the period was obtained from each respondent, it was possible to enter this component of income into the regression equation directly. It appears in the regression equation as independent variable X_4.

As demonstrated in Chapter IX, it is very likely that capital gains associated with the ownership of farm land and buildings had a considerable effect on the change in net worth of some of the farm respondents. Since there were only several instances in which a farm respondent sold farm land and/or buildings during the period, practically all of the effect of capital gains arising from these assets on change in net worth came directly through an increase in the inventory value of the assets and not through a realization of the income from these gains. However, because neither the purchase price nor the date of purchase of land and buildings purchased during the period were obtained, the increase in value could not be estimated and used to determine the effect of capital gains of this type on the change in net worth. While there was little evidence

assets were of major importance, it is likely that some did exist, particularly in association with the ownership of nonfarm real estate. However, again because of the lack of sufficient data, it was not possible to determine the effect of any such capital gains on the change in net worth. Thus it must be acknowledged that capital gains are one component of income which very likely contributed substantially to the variation in the change in net worth, but one which is not considered in the regression analysis.

As with income, the consumption component of the change in net worth or savings function might be broken down into a number of different factors. However, for purposes of the discussion here let us consider it to be composed of (a) consumption necessary to provide a certain standard (standard for all respondents) level of living for the respondents and their dependents, (b) voluntary consumption in "excess" of that necessary to provide this level of living and (c) involuntary consumption such as uninsured losses or expenses due to the weather, fire, accidents, illnesses or crop and livestock diseases.

In general, variation in the amount of consumption necessary to provide a certain standard level of living for the respondents and their dependents would be largely a function of location-associated differences in the cost of living and the number, age and sex of the dependents. Since all of the respondents in the farm group lived in Iowa and, for the most part, in predominately rural areas, it seemed justifiable to assume that location-associated differences in the cost of living were not of major importance. Therefore, it was thought that only one variable was

needed to account for the major part of the variation in the amount of consumption necessary to provide this certain standard level of living, i.e., a variable which would account for variation in consumption due to variation in the number, age and sex of the dependents. The average size of the dependent family for the entry year and 1967, measured in terms of adult male equivalents,[12] was used for this purpose and was entered into the regression equation as independent variable X_2. However, again the limitations associated with basing the variable on only two years of the period should be recognized.

In the selection of variables to account for variation in voluntary consumption in "excess" of that necessary to provide the aforementioned certain standard level of living, basically two factors were taken into consideration: (1) consumption or saving habits and (2) the pressure that the respondents were under to save. However, four variables were used to account for variation in these two factors. They were as follows: the operator's months of nonfarm work prior to entry (X_3), the value of farm operating assets owned by the operator on Dec. 31 of the entry year (X_5), total family debt on Dec. 31 of the entry year (X_6), and 1967 employment status (X_7).

In the past it has generally been accepted that a basic difference existed between the consumption or saving habits of farmers and those of

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[12] In determining the number of adult male equivalents in a respondent's dependent family, each adult male dependent was considered as one adult male equivalent, and each of the other dependents were counted as some proportion of an adult male equivalent depending on their age and sex. These proportions were taken directly from the set found in Willsie and Ottoson (26).

the nonfarm population. The difference being that, given the same level of income, the nonfarmer would tend to consume a larger proportion (or save a smaller proportion) than the farmer. Therefore, under the assumption that operators who had spent more time at nonfarm work prior to entry were more likely to have had developed consumption habits more similar to nonfarmers than operators who had spent less time, operator's months of nonfarm work prior to entry was expected to be positively associated with "excess" consumption during the period.

Both X_5 and X_6 were used as indicators of the pressure the respondents were under to save during the period. It was hypothesized that operators who owned larger quantities of operating assets at the beginning of the period were under less pressure to save for the purpose of accumulating operating assets during the period than operators who owned smaller quantities. For this reason, X_5 was considered to be negatively associated with the pressure to save and, therefore, positively associated with "excess" consumption during the period. On the other hand, it was postulated that the operators with the larger debts at the beginning of the period were under greater pressure to save than those with the smaller debts. Thus, X_6 was considered to be positively associated with the pressure to save or negatively associated with "excess" consumption during the period.

Taking the respondents' 1967 employment status to be indicative of their employment status during the period,[13] it seems likely that this

[13]While the data in Table 5, page 39, suggests that this assumption does not hold in every case due to shifts in employment status that occurred during the period, it also suggests that the assumption could be true on a general basis since no shift was indicated for well over half of the respondents in the 1967 farm group.

variable could help account for variation in both consumption habits and the pressure to save. That is, inasmuch as the 1967 parttime farmers were more closely associated with the nonfarm way of living during the period than the 1967 full-time farmers, one would expect that, in terms of consumption habits, they were more like nonfarmers than were the 1967 full-time farmers; and, inasmuch as the part-time farmers were less dependent on income from farming during the period, one would expect they were under less pressure to save than were the full-time farmers since they would have had less need to accumulate assets for income-generation. Thus, since X_7 was assigned a value of zero for 1967 full-time farmers and a value of one for 1967 part-time farmers, it was expected that this variable would be positively associated with "excess" consumption during the period.

With regard to involuntary consumption in the form of uninsured losses or expenses, sufficient data were obtained to indicate that consumption of this type could have had a substantial effect on the change in net worth for a number of the respondents. However, the data obtained was judged to be inadequate for the purpose of constructing a variable which could be used to determine the importance of such losses or expenses in explaining variation in the change in net worth. Therefore, as with capital gains, while it must be recognized as a factor which probably contributed to the variation in net worth change, it is not considered in the regression equation.

Under the ceteris paribus assumption one would expect the level of income to be positively associated with savings or change in net worth.

Therefore, since independent variables X_1 and X_4 were considered estimates of income received during the period, they were expected to be positively associated with net worth change. Under the same assumption, one would expect consumption to be negatively associated with net worth change. Therefore, those variables which were thought to be positively associated with consumption (X_2, X_3, X_5 and X_7) were expected to be negatively associated with change in net worth. On the other hand, because X_6 was thought to be negatively associated with consumption, it was expected to be positively associated with net worth change.

The variables used in the regression analysis of net worth progress for the farm group are displayed in Table 50 along with the results of the analysis.

2. Results of the regression analysis

As expected, the results leave little doubt that the level of income during the period was important in explaining variation in net worth change over the period. The beta value for X_1, profits and wages or earned income, indicates that for each dollar increase in the average annual earned income for the entry year and 1967, net worth over the period increased by approximately $5.45. Taking into consideration that this increase occurred, on the average, over a 7.5 year period, this indicates an average annual increase in net worth of $.74 for each dollar increase in average annual earned income. The beta value for X_4, gifts, suggests that for each dollar of income received as a gift

Table 50. Description, means, beta values, and t-values of variables used and the over all results of the multiple regression analysis of the change in net worth experienced by 112 farm operators

Variable and description		Mean	Beta value	t-value
Y	Change in net worth from Dec. 31 of the year of entry to Dec. 31, 1967 ($)	31,200		
X_1	Average of entry year and 1967 total family income, excluding gifts ($)	7,281	5.448	8.786[a]
X_2	Average size of dependent family for the entry year and 1967 (adult male equivalents)	2.92	-3244.494	-1.952[b]
X_3	Operator's months of nonfarm work prior to entry	66.29	-40.884	-1.916[b]
X_4	Total value of gifts received during the period ($)	2,421	0.869	3.372[a]
X_5	Value of farm operating assets owned on Dec. 31 of the year of entry ($)	8,321	-1.128	-3.200[a]
X_6	Total family debt on Dec. 31 of the year of entry	7,317	1.257	4.802[a]
X_7	1967 employment status (0 = full-time farmer, 1 = part-time farmer)	.4018	-10225.756	3.372[a]
Intercept (b_o) = 6238.8930				
Computed F = 29.37				
Tabular $F_{.001}$ = 4.09				
Multiple R^2 = .664				

[a]Significant at $\alpha = .01$.

[b]Significant at $\alpha = .10$.

during the period net worth increased by approximately $.87 over the period.

These figures, however, indicate ratios of savings to income which appear to be much too high to be realistic, especially in regard to earned income. One possible explanation for the high ratios could be that while the income approximations used here are highly correlated with the actual income figures for the period, they consistently underestimate the actual figures. In regard to earned income, this would be the case if the group had typically experienced increases in earned income which were very high in the early years but tapered off significantly in the latter years of the period, a supposition for which considerable justification could be given. However there were no data available to verify whether or not this was actually the case. It is merely mentioned here as one possible explanation for the very high ratio of savings indicated and as an example as to why one should be very careful in taking the results of the analysis at face value, especially where figures are concerned. With regard to income received as a gift, there is reason to expect a rather high ratio of savings to income since several respondents received rather large inheritances of land and buildings during the period. In these cases one would at least expect a ratio of savings to income of one to one; and, considering capital gains, it is likely that the ratio was even higher. In light of this, perhaps the high ratio of savings to income received as gifts indicated by the beta value for X_4 is not altogether unrealistic.

Apparently the average size of family, X_2, had a substantial effect on the ability of the respondents to save during the period. The beta value for this variable suggests that as average family size increased by one adult male equivalent the total savings or change in net worth over the period decreased by approximately $3244. Therefore, even with only a slight variation in this variable, it could account for a considerable portion of the variation in net worth change. In view of this, it seems reasonable to conclude that family size very likely played an important role in determining net worth change over the period.

The results, also, demonstrate a rather high probability ($\alpha = .10$) of an association between X_3, operator's months of nonfarm work prior to entry and net worth change. While this variable may not account for a great deal of the variation in net worth change, the results at least support the hypothesis set forth earlier. The beta value for X_3 indicates that for each additional month spent at nonfarm work prior to entry, net worth change over the period decreased by approximately $41, consistent with the earlier supposition that those who had spent more time at nonfarm work prior to entry would tend to consume a larger portion of their incomes than those who had spent less time.

In regard to independent variables X_5 and X_6, the results of the analysis again lend support to hypotheses set forth earlier. For x_5 it was hypothesized that operators who owned larger quantities of operating assets at the beginning of the period would be under less pressure to save for the purpose of accumulating assets for income-generation; and, the results indicate that as X_5 increased by $1, total

change in net worth over the period decreased by $1.128. For X_6 it was hypothesized that the higher the family debt at the beginning of the period, the greater the pressure the operator would be under to save. Again the results lend support to the supposition as they show that for each dollar increase in X_6, net worth change increased by $1.257. In addition, the t-values indicate a low probability ($\alpha = .01$) that the suggested associations could be attributed to a chance event (Table 50).

Also as expected, the results indicate a rather strong association (significant at $\alpha = .01$) between X_7, 1967 employment status, and net worth change. The beta value for X_7 shows that after b_o and the effects of the other independent variables are accounted for in the regression equation approximately $10,226 is taken from the estimate in the case of 1967 part-time farmers. In other words, the results suggest that, other things being equal, the 1967 part-time farmers experienced a change in net worth over the period of about $10,226 less than did the 1967 full-time farmers. The reasons offered here for expecting such an association between X_7 and net worth change were hypothesized differences between the two employment status groups in regard to consumption or savings habits and the pressure which they were under to save. Whether or not these were in fact reasons for the association or, if so, were the only reasons cannot be determined here. However, the most important thing is that it is quite apparent that differences which contributed to variation in net worth change did exist between the two groups in addition to those accounted for by the remaining

independent variables in the equation.

The overall results of the regression are displayed at the bottom of Table 50. The multiple R^2 indicates that taken together these seven variables could explain about 66.4 percent of the variation in the change in net worth over the period. Thus roughly one-third of the variation is left unexplained indicating there were additional factors which contributed to the variation in net worth change. It is felt that variation in capital gains, uninsured losses and unusual expenses were among these factors. As stated earlier, there was evidence indicating that these variables could have had a substantial effect on the change in net worth of some of the respondents. However, without being able to include these variables in the regression equation it is not possible to say to what extent they might contribute to explaining the remaining variation.

In summary, each of the hypothesized relationships between the independent variables and net worth change is supported by the results of the regression analysis. The results indicated a positive association between X_1, X_4 and X_6 and net worth change and a negative association between X_2, X_3, X_5 and X_7 and net worth change. Furthermore, the t-values indicate that the associations between net worth change and X_1, X_4, X_5, X_6 and X_7 were significant at $\alpha = .01$ and those between X_2 and X_3 and net worth change were significant at $\alpha = .10$. Thus, while the reasons given for the hypothesized relationships may be questioned, the results of the analysis strongly indicate that an association did exist between each of the independent variables and net worth change

and that these associations were at least consistent with those which were hypothesized.

C. Nonfarm Group: Income Progress

1. Discussion of variables and expected relationships

The variables employed in the regression analysis of income progress for the nonfarm groups are displayed in Table 51 along with the statistical results of the analysis.

The absolute difference between entry year and 1967 total family income excluding gifts, Y, was selected as the dependent variable or measure of income progress.

Basically the independent variables selected to explain variation in income progress can be divided into two groups: (a) those which were used as measures of differences in labor or capital inputs into income generating activities in the entry year and 1967, X_1, X_2 and X_6, and (b) those which were used as measures of differences in experience or training for nonfarm work, X_3, X_4 and X_5.

Variables X_1 and X_2 were used as measures of the change in the labor input of the respondent and his wife, respectively, into income-generating activities and were determined by taking the difference between the number of days spent at nonfarm income-generating activities in the entry year and that spent in 1967. It needs to be emphasized that these measures do not account for time spent at income generating activities on the farm in the entry year and, therefore, are not measures of the change in the total labor input into income-generating

Table 51. Description, means, beta values and t-values of variables used and the over-all results of the regression analysis of the change in total family income of 45 nonfarm respondents

Variable and description		Mean	Beta value	t-value
Y	Change in total family income excluding gifts ($)	3824.93		
X_1	Change in respondent's nonfarm labor input (days)	214.44	13.292	2.459[a]
X_2	Change in wife's nonfarm labor input (days)	68.22	10.238	1.978[b]
X_3	Number of months respondent worked at nonfarm jobs prior to entry	58.87	-3.668	-0.359
X_4	Number of months respondent worked at nonfarm jobs since leaving farming	55.49	32.517	1.050
X_5	Respondent's post entry training (hours)	1098.11[c]	.302	1.442
X_6	Change in net worth including gifts from Jan. 1 of the year of entry to Dec. 31, 1967 ($)	8342.22	.209	4.892[a]
X_7	Total value of gifts received during the period ($)	991.78	.517	1.192

Intercept (b_o) = -3900.3872

Computed F = 5.94

Tabular $F_{.001}$ = 4.39

Multiple R^2 = .529

[a]Significant at $\alpha = .01$.

[b]Significant at $\alpha = .05$.

[c]The size of the mean is due to several cases in which a respondent attended college and is not representative of the time spent by the typical respondent.

activities. Since indications were that the vast majority of the respondents were fully employed in both the entry and 1967, it is probably most accurate to interpret variable X_1 as a measure of the extent to which the respondent shifted his labor input from income-generating activities on the farm to nonfarm income-generating activities. While this could also apply to the wives, it is quite possible that the variable also indicates change in total labor input into income-generating activities since the vast majority of the wives were not fully employed at income-generating activities, whether farm or nonfarm, in either the entry year or 1967.

Because a unit of nonfarm labor has typically earned a higher wage than a unit of farm labor, one would expect the change in income to increase as the amount of labor shifted from farm to nonfarm income-earning activities increased. Certainly one would expect the change in income to increase as total labor input increased. Thus, whether X_1 and X_2 indicate the extent of the shift in labor input from farm to nonfarm employment or the change in total labor input, a positive association between these two variables and change in income would be expected.

Because the data collected were not sufficient to actually measure the change in the capital input into income-generating activities, it was necessary to select a variable which was thought to be an indicator of this change. Independent variable X_6, the change in net worth between Jan. 1 of the year of entry and Dec. 31, 1967 was selected for this purpose. It is recognized that a number of reasons can be given as to

why this is probably not a very good indicator of the change in the capital used for income-generation, starting with the fact that there is no way of knowing whether all or any of this increase in net worth was actually connected in any way with capital used for income-generation. While the change in total assets could have been used for this purpose, the vast majority of these assets in 1967 were in the form of household goods and nonfarm real estate which was owned for residential purposes. For this reason, it was felt that change in total assets would not be a very good indicator of the change in capital used for income-generation. It is likely that this is also true for in the case of net worth change since a large portion of the change probably involved increases in the net equity value of these types of assets. However, it was felt that the greater the respondents net equity value in these types of assets or any others, the more capable and likely he would be to make investments of capital into income-earning activities.

Generally a person with more experience at a particular job receives a higher salary than a person with less experience. Therefore, in the shift from farming to nonfarm employment, it was felt that those with more nonfarm work experience would have acquired higher-paying positions than those with less experience. Similarly as nonfarm work experience increased over time, those having gained the most experience should have experienced the larger increases in income. Variables X_3 (the number of months the respondent worked at nonfarm jobs prior to entry) and X_4 (the number of months the respondent worked at nonfarm jobs after leaving farming) were used as measures of the experience the respondents

had had with nonfarm work. Because of lack of information, nonfarm work during the period the respondents were in farming could not be included among the measures of nonfarm work experience. Because many of the respondents held nonfarm jobs during the entry year, experience prior to entry could have affected the level of income in both the entry year and 1967, but experience after leaving farming could have only affected the level of income in 1967. For this reason they were considered separately in the analysis.

Following the same line of reasoning, one would also expect that as training for nonfarm work increased over time, those having received more training would have experienced the larger gains in income. As with the farm group information pertaining to post entry participation in training or education programs was gathered for the nonfarm group. Again, the respondent's estimate of the number of hours spent getting training was used as the measure of post entry training; and, for the same reasons as those given for the farm group, it must be admitted that this is probably a rather poor way of measuring the additional training received. However, it was still thought that it might help to explain variation in income progress because there was a great deal of variation in training time. Except for the measure of change in capital inputs used, the conditions under which the total value of gifts received, X_7, was entered into the regression equation were the same as for the farm group. Therefore, the significance of its addition to the regression equation here was also considered questionable.

2. Results of the regression analysis

Evidently, variation in the change in the labor input of both respondents and their wives as measured by X_2 and X_3, does help to explain variation in income progress as expected. A high probability of a direct association between each of these variables and income change was indicated by the statistical results of the analysis (Table 51). Whether in either case, the association is due to an increase in total labor input, a shift in labor input from farm to nonfarm employment, or both, cannot be determined from the evidence available here.

The results also indicate a high probability of a direct association between net worth change as measured by X_6 and income change. The reason given earlier for expecting this relationship was a hypothesized correlation between net worth change and the change in capital inputs into income generating activities. However, it is quite possible that variation in the change in net worth was due in part to variation in the change in income. In this case, one would also expect a positive correlation between income progress and net worth change. Therefore, whether or not variation in net worth change actually contributed to the variation in income progress must still be considered questionable.

Apparently, the respondent's nonfarm work experience and post-entry training, as measured here, were not important in explaining the variation in income progress. Based on the evidence found here, it is highly probable that the indicated relationships between X_3 and X_4 and income change were the result of random events. Thus, if past work experiences did have an effect on the level of income, it was either

relatively minor or else occurred in a manner such that it did not contribute to the variation in income progress. Similarly, while the results demonstrate a positive correlation between post-entry training and income progress, the t-value for this variable indicates there is about one chance in five that this association could be due to pure chance.

It also appears that family assistance was of little or no value in explaining variation in income progress. Although the results show a positive association between the value of gifts received and income change, the association was evidently quite weak and did not add significantly to the regression equation.

According to the multiple R^2 for the regression, all of the independent variables taken together could explain about 52.9 percent of the total variation in the change in income between the entry year and 1967, leaving roughly half of the variation in income progress unaccounted for. Thus, considering the complexities involved in the relationship between net worth change and income change and that this variable probably accounts for a large portion of the multiple R^2 for the equation it must be admitted that this effort to explain variation in income progress for the group met with only minor success. Furthermore, although the results are not included in the text, in an attempt to explain part of the remaining variation, entry age and years of formal schooling at the time of entry were added to the regression equation. However, their inclusion did not add significantly to the multiple R^2; and, they evidently were not very important in explaining the variation in income progress for this group.

In conclusion then, the results of this analysis leave the question as to what explains the variation in income progress for this group largely unanswered.

D. Nonfarm Group: Net Worth Progress

1. Selection of variables

As with the farm group, the selection of variables to explain variation in net worth progress was based on the definition of savings as a function of income and consumption. Furthermore, with the exceptions of the manner in which the variables were selected and the measures of earned income and net worth progress used, the reasoning behind their selection, methods of measurement and expected relationships for the variables included in the regression equation presented here were exactly the same as for the farm group. (See sections B.1 and B 2 of this chapter.) For this reason, only the above exceptions and the reasons for the exclusion of certain variables from the regression presented here will be discussed.

Up to this point the selection of variables for the regression equations was based on a priori considerations. This was also done in the first attempt at formulating an equation to explain variation in net worth progress for this group. However, while the results of this first effort certainly shed additional light on the problem at hand, the equation itself could account for only a very small portion of the total variation. Based on the results of this first attempt, a new set of variables was selected in an effort to better explain variation in

progress. This set of variables is the one presented in Table 52.

In the first attempt, the same equation was used as was used for the farm group except that total value of farm operating assets owned on Dec. 31 of the year of entry and 1967 employment status were excluded from the set of independent variables and the number of months the respondent worked at nonfarm jobs after leaving farming was included (see Table 50). Employment status in 1967 was excluded for the obvious reason that all respondents in this group had the same employment status in 1967. The total value of farm assets owned on Dec. 31 of the year of entry was excluded in view of the shift to nonfarm employment in which there would be no pressure to accumulate farm operating assets. In reflecting back, it is felt that perhaps this decision was reached before it was given sufficient thought. However, the reasons for this will be discussed later. The rational for including months of nonfarm work after leaving farming is basically the same as that given for including months of nonfarm work before entry.

Based on the results of this first regression, only the size of the dependent family for the entry year and 1967 and total family debt on Dec. 31 of the year of entry were found to have significant relationships with the change in net worth between Dec. 31 of the year of entry and Dec. 31, 1967. However, it was strongly felt that the level of income in the form of both earned income and gifts, should have been related to the change in net worth. Therefore, reasons as to why this regression did not indicate the existence of these relationships were sought.

Table 52. Description, means, beta values and t-values of variables used and the over-all results of the regression analysis of the change in net worth of 45 nonfarm respondents

Variable and description		Mean	Beta value	t-value
Y	Change in net worth including gifts from Jan. 1 of the year of entry to Dec. 31, 1967 ($)	8342		
X_1	Average earned income for the period[a]	6086	.6699	0.966
X_2	Average size of respondent's dependent family for the entry year and 1967 (adult male equivalents)	3.25	-1778.0400	-1.686[b]
X_3	Family debt on Dec. 31 of the year of entry ($)	6111	1.1604	4.304[c]
X_4	Total value of gifts received during the period ($)	992	2.6904	2.280[d]
Intercept (b_o) = -629.244				
Computed F = 9.72				
Tabular $F_{.001}$ = 5.70				
Multiple R^2 = .493				

[a] See text for a definition of this variable.

[b] Significant at $\alpha = .10$.

[c] Significant at $\alpha = .01$.

[d] Significant at $\alpha = .05$.

It was thought that one possible explanation could have been the exclusion of the entry year from the measure of net worth progress. For the nonfarm groups, net worth change occurring during the entry year was larger than the average annual change during the remaining years of the period; whereas, the opposite was true for the farm group. In other words, it appeared that in relative terms the entry year was more important than the remaining years of the period in determining net worth progress for the nonfarm group and, therefore, should have been included in the analysis. Furthermore, in regard to income in the form of gifts, more than half of the total value of gifts received during the period by this group were received during the entry year (Table 10). Therefore, it was felt that much of the contribution of gifts to net worth change over the period had been excluded from the measure of net worth progress when the change in net worth during the entry year was excluded. For these reasons, the absolute difference between net worth including gifts on Jan. 1 of the entry year and Dec. 31, 1967 was selected as the measure of net worth progress or dependent variable (Y) to be used in the second effort to explain variation in progress.

In addition, it was thought that perhaps another explanation for the insignificance of average earned income may have been that the method used in estimating the variable resulted in a poor estimate. Earlier the weakness of using the average of the entry year and 1967 were pointed out. In an attempt to avoid some of these weaknesses, the following method of estimating average earned annual income for the period was tried for the second regression equation. Unlike the farm group, an

estimate of total earned income during another year of the period (the last year of farming) was obtained for the nonfarm group (page 78). This estimate was based on the respondent's estimate of his and his wife's nonfarm income and net farm income during that year. However, it should be pointed out that while the estimates of nonfarm income were obtained directly in the form of a definite figure, the respondent's estimate of net farm income was obtained through his selection of an income interval which he judged to best describe his net farm income during the last year of farming. The mid-point of this interval was then summed with the estimate of nonfarm income to obtain an estimate of total earned income during the last year of farming. This estimate was then averaged first with the total earned income in the entry year and then with that for 1967 to obtain estimates of the average earned income during the period he farmed and the average earned income for the remainder of the period. Using as weights the number of years in each period, a weighted average of these two figures was obtained and used as the average earned income for the period, X_1.

Other than the possibility that no association existed between months of nonfarm work either prior to entry or after leaving farming and the net worth progress of this group, no good reason for their insignificance in the first regression was found. Therefore, they were not included in the second regression.

2. Discussion of the results

Just as with the farm group, it appears that the average size of family, the size of family debt at the beginning of the period and income received as gifts also help to explain variation in the net worth progress made by the nonfarm group. The results indicate a negative association (significant at $\alpha = .10$) between size of family and net worth change and positive association between size of family debt and gifts (significant at $\alpha = .01$ and $\alpha = .05$, respectively) and net worth change. Apparently, the majority of the contribution of gifts to variation in net worth progress came during the entry year as the first regression equation did not indicate a significant relationship between gifts and net worth change when the change occurring in the entry year was excluded.

Just as in the first regression, the results presented here for the second regression do not indicate a significant association between the average level of earned income for the period and net worth progress. Therefore, if the lack of a significant association was due to an inaccurate estimate of the average level of income during the period, apparently neither of the methods used provided an accurate measure. But, since it is not known whether or not this was the case it must be admitted that all of the evidence here indicates that no significant association existed between the averaged level of earned income during the period and net worth progress. However, it is interesting to note that according to the results of the regression on change in earned income, there was a highly significant association between the change in earned income and net worth change over the period (Table 51). Together these

two pieces of evidence indicate that, while the level of income over the period was not important in determining net worth progress, the change in the level was important. This being the case, evidently factors affecting consumption and/or savings habits which were associated with a change in the level of income were more important in determining variation in net worth progress for this group of individuals than were those associated with the level of income. However, no attempt was made to identify these factors.

It was pointed out earlier that no significant relationship was found for either the number of months the respondent worked at nonfarm jobs prior to entry or the number of months he worked at nonfarm jobs after leaving farming when these factors were regressed on the change in net worth. Apparently, the amount of time the respondent spent at nonfarm work prior to entry and after leaving farming had little effect on his consumption and savings habits during the period and were unimportant in explaining variation in net worth progress for this group.

The multiple R^2 for the regression shown in Table 52 was .493, indicating that the four independent variables included in this regression could account for only about half of the total variation in net worth progress. While this is somewhat better than the first attempt in which roughly 35 percent of the variation was accounted for, it still leaves largely unanswered the question as to what explains the variation in net worth progress within the nonfarm group.

As with the farm group, it is likely that part of the unexplained variation is due to variation in income from capital gains, uninsured

losses and unusual expenses during the period. Also, it was indicated earlier that perhaps the level of farm operating assets owned at the beginning of the period should have been included among the independent variables as an indicator of the pressure the respondents were under to save in order to accumulate assets for income-generation, in spite of the fact that all of the respondents had quit farming at some time during the period. For those respondents who did not quit farming until near the end of the period, the pressure to save in order to accumulate assets needed to generate farm income could have had a considerable effect on their net worth progress. As shown in Table 14, over one-third of the respondents were in farming for more than half of the period. Thus, this indicator of the pressure respondents were under to save while they were in farming could explain part of the residual variation. Finally, there also was some evidence that variation in the change in income could help to explain part of the remaining variation.

XI. SUMMARY

The primary objectives of this study of beginning entrants into Iowa farming were (1) to determine adjustments made over time and (2) to determine the major factors associated with variations in financial progress (wealth and income). To accomplish these broad objectives and to determine to some extent the interrelationship between progress and adjustments, a set of more specific objectives were identified: (1) to determine shifts in employment during the period studied; (2) to explain why some entrants left farming and others remained; (3) to determine the changes in the farming operations of those who remained and to examine other characteristics of this group; (4) to describe the financial progress of beginning operators during the period and compare the progress of those who remained in farming and those who left; (5) to determine the major factors associated with variations in financial progress of those who remained; and (6) to determine the major factors associated with variations in financial progress of those who quit.

Two types of financial data were used as measures of progress. These were: (1) change in income based on the difference between entry year net income and 1967 net income and (2) change in net worth based on the difference between entry year net worth and 1967 net worth. Both the absolute change and the rate of change in income and net worth were utilized.

The sample for the study was originally selected in 1961 and benchmark data were gathered at that time. Additional data for determining postentry adjustments, income during 1967 and net worth in 1967 were collected in 1968 by resurveying the original sample.

A. Shifts in Employment Status

The majority of the beginning entrants (nearly 60 percent) changed employment status between the entry year and 1967. Just under one-fourth (24 percent) started as full-time farmers with the remainder beginning as part-time farmers. By 1967 the proportion of full-time farmers had risen to 40 percent and the proportion of part-time farmers had declined to nearly 30 percent while approximately 30 percent were found to be exclusively employed as nonfarm workers.

An association was found between entry year employment status and 1967 employment status. Those who started as full-time farmers were more likely to have been full-time farmers in 1967 and less likely to have left farming when compared to those who started as part-time farmers. However, only about 15 percent of the group as a whole were full-time farmers in both the entry year and 1967, demonstrating that the beginning entrant who began as and continued as a full-time farmer was the exception rather than the rule.

B. Differences Between Those Who Quit Farming and Those Who Continued to Farm

In an attempt to shed some light on the question as to why some beginning entrants left farming while others remained in farming, the

1967 farm and nonfarm groups were compared in relation to the following: (1) personal and background characteristics at the time of entry (size of household, age, education, etc.); (2) the beginning farm operation; (3) financial position at the time of entry and the financial results of the first year of farming; (4) the amount of family assistance received; (5) success in acquiring additional land for expansion and; (6) occupational preference and other personal views. Of the personal and background characteristics compared, the two groups were found to be significantly different with respect to only one, size of household (dependent family). The households at the time of entry of the farm group were found to be significantly smaller than those of the nonfarm group. Limited capital was a serious problem for many of the beginning entrants and in as much as those with smaller households were able to save a larger portion of their income for investment in their farming operations, size of household could be one factor that helped determine who stayed in farming. The two groups were not found to be significantly different with respect to age, marital status, years of formal education, semesters of formal agricultural education, years lived on a farm or nonfarm work experience.

A number of differences were found in the characteristics of the beginning farm operations of the two groups. The average size of the beginning operation for those who continued to farm was found to be significantly larger than those who quit (181 acres as compared with 140 acres). Furthermore, there was substantial evidence indicating that those who continued to farm were relatively more successful in increasing

the size of their farms. While there was little evidence of an association between entry year land tenure and 1967 employment status, entry year business form was associated with 1967 employment status. Nearly 94 percent of those who started farming in partnership continued to farm compared to only 64 percent of those who started as single-proprietors. Also, the entrants who remained in farming tended to start with a larger stock of farm operating capital and increase it more during the entry year than those who quit. Similarly, those who continued to farm were in a somewhat better financial position (as measured by net worth) at the time of entry. In addition they tended to increase net worth more during the entry year by investing a larger portion of their income in farming assets than those who quit, in spite of the fact that the average entry income for the two groups was nearly equal. The farm group also received a significantly larger amount of family assistance in the form of gifts and inheritances during the period.

The two groups also differed in regard to job preference (farming vs. nonfarm job) at equal incomes. A larger proportion of those who quit attached a higher value to the nonincome attributes associated with nonfarm employment; i.e., preferred nonfarm work at equal incomes. No significant differences between the two groups with respect to the reasons for entering farming were found.

C. The Shift to Nonfarm Employment

The shift to nonfarm employment was analyzed with emphasis on the last year of farming, the decision to leave farming, expectations at the time of the decision, postfarming work experience, and satisfaction with nonfarm employment.

The nonfarm group farmed an average of 3.7 years before shifting to nonfarm employment with the amount of time spent in farming being independent of entry age. There was apparently no association between the rate of withdrawal and time elapsed after entry.

The units operated during the last year of farming were found to have a mean land base which was smaller than the average Iowa farm with over three-fourths of the group operating farms with a land base substantially smaller than the state average. The degree to which the group dependent on rented land during the last year of farming was also found to be considerably larger than the state average.

Tenure, business form and farm size during the last year of farming were associated with age. While older respondents were more frequently owners or part-owners, the younger respondents more frequently operated in partnership and tended to operate larger units.

A comparison of the farm assets owned by the group at the time of leaving farming and those owned on Dec. 31 of the year of entry indicated that, excluding the entry year, the group made little progress towards accumulating the farm assets necessary to become established in farming, especially in relation to farm operating assets (machinery, equipment, etc.).

Income estimates for the last year of farming when compared to that of the entry year indicated that the group was not successful in increasing their farm incomes during the farming period. While there was an increase in nonfarm income, the increase was small. During the last year of farming farm income was inversely correlated with age and nonfarm income was directly correlated with age. One-half of the group reported they had worked at nonfarm jobs during the last year of farming with older respondents more frequently reporting nonfarm work than younger respondents.

Most respondents made a firm decision to leave farming only a short time before leaving (on the average about 3 months) and made the decision independently as only 20 percent reported they had consulted with someone in regard to the decision. Younger respondents more frequently sought advice than did older respondents. A large proportion (approximately 65 percent) of the group indicated either the level or the stability of income to be the most important factor considered in their decision whereas considerations relating to working and living conditions were reported as most important by only 28 percent of the group. Although older respondents more frequently reported income related factors than younger respondents, this was not found to be statistically significant. Nearly one-fifth of the respondents did not have security of land tenure at the time they decided to quit, however, they did not consider this as the most important factor in their decision.

At the time the decision was made, 46 percent of the respondents had made definite plans for nonfarm employment and 8 percent had made other definite plans while the remaining 46 percent had apparently not made any definite plans. Of the first group, over half were already holding the nonfarm job they planned to work at after leaving farming. Of the latter group, most did not expect difficulty in finding an acceptable nonfarm job even though the majority had not made an investigation into the possibilities. It could not be determined whether older or younger respondents more frequently expected difficulty in finding an acceptable nonfarm job, but older respondents more frequently had definite plans (they more frequently held a nonfarm job).

Of the replies in response to five questions designed to determine the respondents' expectations (at the time they decided to leave farming) the majority indicated the respondents expected conditions to be different in nonfarm work. Replies indicating optimism (conditions better in nonfarm work than in farming) were over four times as numerous as pessimistic replies. While older respondents appeared to be somewhat more optimistic only small differences appeared between the two age groups in their expectations concerning individual attributes.

In an attempt to shed some light on the postfarming work experience of the group, information concerning the first job held after leaving farming, the last job held (the job held by the respondent at the time he was interviewed for this study) and additional attributes of post-farming work experience were examined. While it appears that most occupations engaged in after leaving farming required some type of

skill, there was no pronounced trend towards any particular type of work. The most noteworthy age-related differences were that older respondents more frequently reported first jobs in the professional-technical and manager-official categories than younger respondents; and, younger respondents more frequently reported first jobs in the craftsman and operative categories. This tendency did not show up in the last job held and is probably a reflection of the younger respondent's gains in maturity and experience with nonfarm work over the period.

While older respondents more frequently reported they had had previous experience for both the first and last jobs held, this age-associated difference was statistically significant only for the first job. Older respondents also reported higher average monthly net incomes for the first and last job held. Again the age-related difference was statistically significant for the first job held but not for the last job. This is thought to be a reflection of the gains in experience by younger respondents.

Over two-thirds of the respondents changed jobs at least once between the time they quit farming and the time of the interview. While about one-third reported they had held the same job during the entire period nearly an equal proportion had changed jobs four or more times. The tendency to change jobs was inversely correlated with age: younger respondents changed jobs much more frequently than older respondents.

The shift to nonfarm employment required relocation for 88 percent of the respondents. However, most remained in Iowa and apparently

moved only a short distance. Older respondents tended to take jobs in smaller towns and closer to the land last farmed as compared to younger respondents.

The group, on the average, increased their satisfaction by shifting to nonfarm employment. In evaluating the change, 49 percent believed, all things considered, they were more satisfied with their nonfarm situation while only 16 percent believed they were less satisfied. Also, when asked to appraise the change according to six selected factors (level of income, level of living, level of savings, financial position, type of work and the neighborhood in which they lived) the overall response favored the nonfarm employment experience. Of the 282 appraisals made in regard to the six factors, only 12 percent indicated a worse experience in nonfarm work while 50 percent indicated a better experience. Of the individual factors, the respondents had the most favorable experiences with the financial aspects and the least favorable with the type of work and the neighborhood. When asked if they had given any thought to entering farming again, slightly over half indicated they had; but only three, or about six percent, indicated definite plans to return to farming. Age was not a significant factor in these responses.

D. Post-Entry Adjustments Made By The Farm Group

To determine post-entry adjustments, changes in business form, land tenure, and farm size were investigated. In addition, investments, labor utilization and personal views of the operators were examined.

The most significant adjustment in the farming operations was made in farm size. Average farm size went from 181 acres to 271 acres, an increase of 90 acres. While the farms on which the group started averaged about 9 acres smaller than the state average for 1959-60, the average size of their 1967 farms was about 37 acres larger than the state average in 1967. The difference in 1967 was largely a reflection of acreage differences associated with business form. On the average, units operated in partnership in 1967 were nearly 200 acres larger than the state average while single-proprietor units were only seven acres larger. Farm size was closely associated with age. Younger entrants started on larger farms and increased the size of their farms more during the period. The acreage difference between the age groups was largely a reflection of acreage differences associated with tenure, business form and dependence on farming for income, with the heavier concentration of ownership among older entrants and partnership and full-time farmers among younger entrants.

Comparison of entry year and 1967 business form indicated a tendency for the groups to shift away from the partnership form of business and toward single-proprietorship. Considering the trend toward larger and more capital intensive farming units, one would have expected the opposite in regard to post-entry adjustments in business form. While the partnership arrangement may have been used by some of the group to help overcome the problem of limited resources at the time of entry, apparently the vast majority of the group either preferred the independence associated with being a single-proprietor or they did not have an opportunity to

enter into a partnership arrangement. The decline over the period in the use of the partnership form of business is possibly explained in part by the preference for independence. However, it is also possible some beginning entrant partners became single-proprietors through the death or retirement of their partners. As in the entry year, business form in 1967 was found to be age-associated with younger respondents operating in partnership more frequently than older respondents. Since most of 1967 partnerships evolved from original partnership arrangements, it is likely that the same factors explain the association in both years, i.e., younger entrants having a greater need and more opportunities for family tied partnerships.

While there was substantial increase in the proportion of the group who were land owners, the group as a whole was still heavily dependent on rented land in 1967. The proportion owning all or part of the land farmed increased from 23 percent in the entry year to nearly 44 percent in 1967. On the other hand, taking into account land owned by partners, the proportion entirely dependent on rented land decreased from slightly over 65 percent to approximately 50 percent. In acreage terms, however, nearly 73 percent of all land in 1967 farming operations was rented. Only about 19 percent was owned by the respondents themselves and 8 percent was owned by partners of the respondents. In contrast, comparable data indicate that the typical Iowa farm was composed of nearly equal proportions of owned and rented land. This difference in land tenure is believed to be largely a reflection of the fact that these beginning farmers were, on the average, considerably younger and had been farming

only a short time when compared with the typical Iowa farmer.

There were differences, in tenure associated with age. Older entrants owned land they farmed more frequently than younger entrants; but, younger owners tended to own larger acreages. Older entrants were probably more concerned about satisfying an innate desire to own land as opposed to acquiring sufficient land for full-time farming.

One-third of the farm group purchased an average of 184 acres of farm land during the period, but only nine percent of the group purchased as much as 180 acres. The land purchased was of average quality (based on the per acre value) and was purchased primarily with borrowed funds. Although older respondents were more likely to have purchased land and to have purchased smaller acreages than younger respondents, the differences were not statistically significant.

Nearly 44 percent of the farm group reported they had made some type of land improvement during the period. The costs and forms of improvements varied widely, but costs and frequency were closely associated with land tenure. While about one-fifth of those who made land improvements were not land owners, the improvements made by nonowners were generally of low cost. As with land purchases, beginning entrants depended heavily on borrowed funds to finance land improvements. Older respondents made land improvements more frequently than younger respondents, but younger respondents made more expensive improvements. These differences are largely reflections of age-associated differences in land tenure and the degree of dependence on farming for income.

Of the total time spent by the farm operators at income-generating activities in 1967, 78 percent was spent at work on the home farm, 20 percent at nonfarm jobs and two percent at work for wages on other farms, a labor allocation pattern very similar to that of the beginning entrant group as a whole in the entry year. However, while 72 percent of 1967 farm operators spent 25 days or more at income-generating activities not directly related to their farming operations in the entry year, only 43 percent did so in 1967. Older entrants spent more time at nonfarm work than younger entrants, reflecting age-associated differences in farm size and motives for farming.

The majority of the group was apparently relatively satisfied with their farming situation but a significant number had experienced dissatisfaction with farming. Thirty-six percent stated that the rewards of farming had been less than what they had expected; 39 percent indicated they had given thought to quitting farming at some time during the period; and, 20 percent indicated "if they had known at the time of entry what they know today" they would not have entered farming. Reasons relating to working and living conditions were most frequently offered as the reason for not quitting by those respondents who had given thought to quitting. The pattern of response for factors regarding satisfaction with farming showed no consistent relationship with entrant age.

E. Financial Progress

The beginning entrant group had an average annual increase in earned family income of $643 per year, but there was wide variation within the

group. While the majority (approximately 62 percent) had average annual increases between zero and one thousand dollars per year, the average annual increase for eight percent of the group ranged from $1500 to $6000. Thirteen percent had a smaller family income in 1967 than in the entry year. The average rate of change was 11.8 percent per year but again there was wide variation within the group. For about 69 percent of the group the rate of change was between zero and 20 percent per year; nearly six percent experienced rates of change between 25 and 35 percent per year. Those who had decreases in family income showed negative rates of change. The level of entry year income did not appear to have a large effect on the rates of change experienced by the group.

There were considerable differences in the income progress experienced by the various employment groups. The various measures of income change consistently indicated that on the average the farm group had larger increases in income than the nonfarm group. Within the farm group those who were full-time farmers in both years were characterized by the highest mean increases in both total family income and net farm income. On the other hand, those who farmed full-time in the entry year but only part-time in 1967 experienced the lowest gains in total family income.

Although some of the differences among the various employment status groups in the mean absolute change in total family income were quite large, none of the differences were statistically significant at the five percent level of probability due to extremely wide variation in income

progress. For the group as a whole there was little difference in sources of income in the entry year and 1967 except that gifts obviously played a larger role in income in the entry year. Of earned income, about 55 percent came from farming and 45 percent came from nonfarm sources in both years. This difference in the percentages indicates increases in farm income undoubtedly accounted for a larger proportion of the total increase in earned income of the group than increases in nonfarm income.

The various employment status groups differed considerably in regard to the sources of income in both the entry year and 1967, changes in these sources and, therefore, the importance of the various sources in contributing to the overall change in income between the two years. In addition to the obvious differences between the farm and nonfarm groups, nonfarm income of wives also played a significant role. For the nonfarm group the wife's income share rose from about nine percent in the entry year to nearly one-fifth in 1967 while the wife's share for the farm group remained constant at approximately seven percent. This difference is believed to be a reflection of location-associated differences in the availability of nonfarm employment opportunities for wives as well as an indication that available time of farm wives for income-earning activities was used on the home farm.

Within the farm group, those who were full-time farmers in both years derived 89 percent of their total earned income from farming in the entry year and 97 percent in 1967. In contrast, for consistent part-time farmers the proportions from farming were only 21 percent in the entry

year and 37 percent in 1967. Farm income for those who shifted from part-time to full-time farming increased from 69 percent to 93 percent over the period while those shifting from full-time to part-time had a decrease in income from 77 percent to 66 percent. The 1967 full-time farmers experienced a decrease in income from nonfarm sources. On the other hand, 1967 part-time farmers experienced nearly equal increases in farm income and income from other sources.

In comparison to U.S. Census Bureau data for U.S. families in general, beginning entrant families experienced larger increases in income during the period.

After adjusting for inflation, the median family income of beginning entrants increased on the average by nearly nine percent per year while that of all U.S. families increased by approximately four percent. Also the farm group experienced a higher rate of increase in farm income than Iowa farmers in general. The inflation adjusted increase in net farm income for the farm group increased by approximately 12.4 percent as compared to an Iowa average of 9.4 percent per year during the period. Much of the difference in the income gains of the beginning entrants and those of U.S. families in general is probably due to the larger increase in real income during the period which characterized the occupation of farming as compared to the average increase in real income for occupations in general, as well over half of the increase in income experienced by the group was attributable to increases in farm income. It is also likely that part of the difference is a reflection of the age-experience pattern which affects the rate of gain in income for individuals, as the majority

of the beginning entrants were in their earlier years of employment in which workers typically experience large percentage increases in income. The slightly larger rate of increase in net farm income of the farm group as compared to Iowa farmers in general is probably also largely a reflection of the age-experience pattern.

Net worth of most of the beginning entrants increased substantially during the period. The beginning entrant group as a whole experienced an average annual increase in net worth of $3150 per year or 22.2 percent. As with income, there was wide variation in change in net worth. About 17 percent of the group had increases in net worth averaging $6000 or more per year; nearly nine percent ended the period with a reduction in net worth.

Very large differences in net worth were found between the farm and nonfarm groups. The mean annual absolute change in net worth of the farm group was over four times as large as that of the nonfarm group (slightly over $4000 per year versus slightly less than $1000 per year an increase of 27 percent per year as opposed to 11 percent). Much of the difference is undoubtedly a reflection of occupation-associated differences in the quantity of financial resources required for the generation of income and, therefore, the farm group being under much greater pressure to accumulate capital than the nonfarm group. The findings indicating that the farm group had larger absolute changes in income during the period could also explain part of the difference. Furthermore, evidence was found indicating that under similar conditions in regard to level of income and the pressure to save, the farm group demonstrated a greater propensity to save.

Within the farm group, there were also large differences in the net worth progress of the different employment status classes. Those who were full-time farmers in both years experienced the greatest gains in net worth while those who were part-time farmers in both years experienced the least progress. There was a direct association between the gains in net worth of the four classes of farm operators and their gains in net farm income. This serves to emphasize the strong association between capital accumulation and income generation in farming and undoubtedly explains a large portion of the variation in net worth progress of the different classes.

There was an extremely large difference between the mean 1967 net worth of the farm and nonfarm groups ($41.400 and $14.900, respectively). For the nonfarm group, nonfarm real estate played the principal role in determining 1967 ending net worth. It made up 68 percent of all assets and accounted for 85 percent of total liabilities. And, equity value accounted for 58 percent of 1967 net worth.

For the farm group, farm assets made up about 83 percent of all assets (farm operating assets accounted for 46 percent and farm land and buildings nearly 37 percent). Of particular significance, a minimum of 81 percent of the increase in net worth over the period resulted from increases in the equity value of farm assets. Capital gains on farm land buildings undoubtedly had a substantial effect on increases in net worth and rough estimates indicate that it could have accounted for nearly 17 percent of their total increase in net worth.

F. Factors Associated With Variation in Financial Progress

To aid in explaining the variation in financial progress within the farm and nonfarm groups multiple regression analysis was used to determine the relationship, if any, between selected variables and financial progress. For both the farm and nonfarm groups, models were constructed to explain variation in the absolute change in total family earned income and net worth. In addition, income models were constructed to explain variation in the absolute change in earned net farm income for the farm group.

In the model for net farm income the following independent variables were included: owned land, rented land, owned operating capital, short-term capital, and family labor used on the farm, post-entry training, investment in information gathering activities, formal agricultural training before entry, total value of gifts received during the period, entry age, years of formal schooling, entry year total family income, total value of land operated in the entry year, and 1967 employment status (full-time or part-time farmer). The analysis indicated that of these variables, changes in the inputs of owned land, owned operating capital and short-term capital were the most important in explaining variation in the change in net farm income. It appeared that these three factors taken together could explain roughly 65 percent of the total variation in the change in net farm income within the farm group. Significant relationships were detected also between the change in net farm income and both years of formal schooling and entry year total family income, but they accounted for only a very small portion of the total variation.

No significant relationships were found between the other independent variables and the change in net farm income. Since 1967 employment status was among the insignificant variables, the apparent difference in the changes in net farm income experienced by 1967 full-time and 1967 part-time farmers was evidently a reflection of employment status-associated differences in variables included in the regression (most likely changes in inputs) rather than differences in any other factors which may have been associated with employment status. Part of the reason why changes in the input of rented land were not indicated to be important in explaining variation in the change in net farm income while changes in the input of owned land were, could be that whereas entrants received the earnings which accrued to owned land as a factor of production, those that accrued to rented land were transferred to the land owner via rental payments. In addition, it is possible that the cause and effect relationship ran both ways in the case of owned land. In some cases increases in owned land may have contributed to increases in net farm income, while in other increases in net farm income may have led to the decision to purchase land. That no significant relationship was found between the change in the family labor input and the change in net farm income is probably a reflection of the declining role of labor in the generation of farm income. Factors measuring differences at the time of entry were apparently of only minor importance in explaining variation in the change in net farm income whereas changes which occurred between the years were found to be very important. There were undoubtedly other factors which contributed to the variation in net farm income as only

two-thirds of the variation could be accounted for by the factors included in the analysis. It is believed that a substantial proportion of this residual variation is due to variation in management ability not accounted for in the regression.

For the regressions on the change in total family income changes in the respondent's off-farm labor input, the wife's off-farm labor input and the value of nonfarm income-earning assets were added to the set of independent variables used in the regressions on the change in net farm income. Of the variables which were significant in the regressions on change in net farm income, only formal schooling was not significant in the regressions on the change in total family income. Evidently there was either no association or an inverse association between formal schooling and the change in off-farm income which offset its direct association with the change in farm income.

The change in the off-farm labor inputs of the respondent and wife and the change in the value of nonfarm income-earning assets were also found to have significant associations with the change in total family income. The significance of these three variables is attributable to their accounting for variation in the change in off-farm income. However, these variables did not account for all of the variation in the off-farm income as 1967 employment status was found to be associated with the change in total family income as a result of its association with the change in off-farm income. Evidently there were other employment status-associated factors in addition to those included in the regression which contributed to the variation in the change in off-farm income.

The over-all results indicated that all seventeen independent variables together could explain about 70 percent of the variation in the change in total family income and that the nine variables which were measures of differences between the entry year and 1967 could explain 64 percent. As with the change in net farm income, apparently the variables measuring differences at the time of entry accounted for only a very minor proportion of the variation in the change in total family income. On the other hand, changes which occurred between the entry year and 1967 (especially as measured by changes in the inputs of owned land, farm operating capital, short-term capital, respondent's and wife's nonfarm labor and nonfarm income earning assets) evidently accounted for a large proportion of the variation in the change in total family income.

In the attempt to explain the variation in net worth progress among the 1967 farm operators, variables which were believed to account for variation in income and consumption were regressed on the absolute change in net worth. The average earned income (income from profits and wages) for the entry year and 1967 and the total value of gifts and inheritances received during the period were entered into the regression to account for variation in income. The average size of the respondent's dependent family measured in terms of adult male equivalents was used to account for variation in the consumption necessary to provide a certain level of living for the respondent and his dependents. In addition, four variables which were thought to be related to either consumption and savings habits or the pressure the respondents were under to save were used to account for variation in voluntary consumption in "excess" of that necessary to

provide the aforementioned certain level of living. These four variables were the operator's months of nonfarm work prior to entry, the value of farm operating assets on December 31 of the year of entry, total liabilities on December 31 of the year of entry and 1967 employment status.

The results of the analysis left little doubt as to the importance of the level of income during the period in explaining variation in net worth progress. Very strong and direct associations were found between both earned income and income in the form of gifts and inheritances and net worth progress. Indications were that variation in these two types of income could explain a substantial proportion of the total variation in net worth progress.

Apparently variation in family size also contributed substantially to the variation in net worth progress within the group. As average family size increased by one adult male equivalent the total savings or change in net worth over the period decreased by roughly $3200. Thus even a slight variation in this variable could account for a considerable proportion of the variation in net worth progress.

The analysis also indicated significant associations between net worth change and the four variables hypothesized to be associated with savings habits and/or the pressure the respondents were under to save. The amount of time spent at nonfarm work prior to entry was found to be inversely associated with net worth change, indicating that those who had spent more time at nonfarm work prior to entry tended to save relatively smaller portion of their income than those who had spent less time. The value of

operating assets owned at the beginning of the period was also inversely associated with net worth change while the size of debt at the beginning of the period was directly associated with net worth change. These relationships are believed to have resulted from the influence which these two variables had on the pressure the respondents were under to save, with the pressure to save among operators decreasing as the value of owned operating assets increased and increasing as debt increased. The results demonstrated a very strong association between 1967 employment status and net worth change over the period with 1967 full-time farmers experiencing much larger increases than 1967 part-time farmers. Because differences in income and normal consumption were considered in the regression, it is very likely that the close relationship indicated here is largely due to differences between the two groups regarding savings habits and/or the pressure to save associated with life style and the capital intensiveness of the income generating activity engaged in.

The multiple R^2 for the regression indicated that taken together the seven variables considered could account for two-thirds of the variation in the change in net worth over the period leaving one-third of the variation unaccounted for. However, evidence was found indicating that variation in capital gains, uninsured losses and unusual expenses very likely accounted for a substantial portion of the unexplained variation.

In an attempt to explain variation in income progress within the nonfarm group, variables reflecting or believed to reflect differences in labor or capital inputs into income-generating activities and variables indicating differences in the respondent's nonfarm work experience or

training were regressed on the change in total family income. The difference between the number of days spent at nonfarm income-generating activities in the entry year and that spent in 1967 for both the respondent and his wife were selected as indicators of change in labor inputs. Change in net worth between the entry year and 1967 and the value of gifts received during the period were selected as indicators of changes in capital inputs. The number of months the respondent worked at nonfarm jobs prior to entry and the number worked after leaving farming were selected as measures of nonfarm work experience. As with the farm group, an estimate of the number of hours spent getting training during the period was selected as a measure of postentry training.

The results of the regression indicated a high probability of a direct association between income progress and the changes in labor inputs of both the respondents and their wives. Since the measure of change in labor inputs did not directly account for time spent at income-generating activities on the farm in the entry year, it is not known whether in either case the association is a reflection of a net increase in labor inputs, the shift in labor input from farm to nonfarm activities or both. However, the results did indicate that variation in the change in the labor inputs of both the respondents and their wives could explain some of the variation in income progress.

The results also demonstrated a significant and direct association between net worth change and income progress. While this relationship was hypothesized on the basis of an assumed direct association between net worth change and the change in capital inputs into income-generating

activities, it is also quite possible that variation in the change in net worth was due in part to variation in the change in income. Therefore, even if variation in net worth change does reflect variation in capital inputs, it is still questionable as to whether or not this is the reason for the direct association between change in net worth and income progress indicated by the regression.

The amount of family assistance received during the period, the respondent's nonfarm work experience and his postentry training were of little or no value in explaining variation in income progress. Although the results indicated a direct association between value of gifts received and income progress, the association was quite weak and did not add significantly to the regression equation. Similarly, the results demonstrated a direct association between postentry training and income progress, but there was about one change in five that it was a random event. There was little evidence of any association between the respondent's nonfarm work experience (either before entry or after quitting) and income progress. Thus, if past work experience did have an affect on the level of income, the effect was distributed in a manner such that it did not contribute to variation in income progress.

According to the multiple R^2, the regression equation could account for only about 53 percent of the total variation in income progress. Thus, considering the complexities involved in the hypothesized relationships between the variables (particularly net worth change and income change), it must be admitted that the effort to explain variation in income progress for the nonfarm group was rather unsuccessful and leaves

the question largely unanswered.

In the attempt to explain variation in net worth progress within the nonfarm group, the same regression equation was used as was used for the farm group except that total value of farm operating assets owned on December 31 of the entry year and 1967 employment status were excluded (since all were nonfarm workers in 1967) from the set of independent variables; and, the number of months the respondent worked at nonfarm jobs after leaving farming was added. However, based on the results of this regression only the average size of family and the total family debt on December 31 of the year of entry were significantly associated with the change in net worth. Also, only a very small portion of the total variation in net worth change was explained by the regression. Therefore reasons as to why this regression did not indicate the existence of relationships between either the level of earned income or income in the form of gifts were sought. It was thought that part of the explanation may have been the exclusion of the entry year from the measure of change in net worth since the change during the entry year was larger than the average annual change during the remaining years of the period. Also, more than half of the total value of gifts received by this group during the period were received during the entry year. Therefore, the measure of net worth change including the entry year was selected as the independent variable for a second effort to explain variation in progress. It was thought that perhaps another explanation for insignificance of average earned income may have been that the method used to estimate the variable (averaging entry year and 1967 earned income) resulted in a poor estimate.

Therefore another method which also gave consideration to the level of earned income during the last year of farming was used to estimate the average level of earned income for the second regression.

The results of the second regression again indicated that there was no significant association between average earned income and net worth change. However, it did indicate a significant association between income in the form of gifts and net worth progress. Thus, as with the farm group, it appears that variation in average family size, level of family debt at the beginning of the period and income in the form of gifts help to explain variation in net worth progress of the nonfarm group. But unlike the farm group, time spent at nonfarm work (either before entry or after leaving) was not important in explaining variation in net worth progress within the nonfarm group.

In regard to the insignificance of the level of earned income in the regressions here, it is interesting to note the highly significant association between change in earned income and net worth change over the period found in the attempt to explain variations in income progress. This would indicate that while the level of earned income over the period was not important in determining net worth progress, the change in the level was important. This being the case, evidently factors affecting consumption and/or savings habits which were associated with a change in the level of income were more important in determining variation in net worth progress for this group of individuals than were those associated with the level of income.

The R^2 for the second regression indicated that the independent variables included in this regression could account for only about 50 percent of the total variation in net worth progress. Thus, the question as to what explains variation in net worth progress with the nonfarm group is left largely unanswered. As with the farm group, it is likely that part of the variation is due to variation in income from capital gains, uninsured losses and unusual expenses during the period. Also, since there was considerable variation in the amount of time spent in farming within the group, it is felt that part of the variation could be attributable to differences among the respondents regarding the pressure they were under to save in order to accumulate assets needed to generate farm income during the time they were in farming.

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XIII. ACKNOWLEDGMENTS

In preparing this thesis and making the study on which it is based, I received help from numerous people. I am especially indebted to Professor Donald R. Kaldor for the technical guidance and support, the encouragement and above all, the patience and understanding he altruistically extended on my behalf. Special thanks also go to the staff of the Iowa State University Statistical Laboratory (particularly Ann Woodrow) for the estimable job they did in the collection and compilation of the data. I also wish to express my appreciation to the Iowa State University Graduate College and Graduate School of Economics for granting me financial aid and research assistance and making my graduate studies possible. Finally, I am of course most grateful to my wife for typing assistance, financial support and the tribulations she endured to make completion of the work possible.

XIV. APPENDIX

Table 53. Gross and net cash income from farm sources last year of farming for 1967 nonfarm respondent, by entry age

Type of income	Entry age					
	Under 25		25 and over		Total	
	No.	%	No.	%	No.	%
Gross income (dollars)						
Under 3000	3	14.3	8	28.6	11	22.4
3000-7499	7	33.3	14	50.0	21	42.8
7500 and above	11	52.4	6	21.4	17	34.8
Total	21	100.0	28	100.0	49	100.0
Median	$8000		$5375		$6153	
Net income (dollars)						
Under 1000	5	23.8	10	35.7	15	30.6
1000-2999	7	33.3	11	39.3	18	36.7
3000 and above	9	42.9	7	25.0	16	32.7
Total	21	100.0	28	100.0	49	100.0
Median	$2750		$1500		$2000	

Table 54. Nonfarm labor income last year of farming of 1967 nonfarm respondents and their wives, by entry age of respondent

Labor income	Entry age: Under 25		25 and over		Total	
	No.	%	No.	%	No.	%
Respondents (dollars)						
Under 3000	2	40.0	7	43.8	9	42.9
3000-4999	2	40.0	3	18.7	5	23.8
5000 and over	1	10.0	6	37.5	7	33.3
Total	5	100.0	16	100.0	21	100.0
Mean	$3051		$4398		$4077	
No nonfarm job	16		9		25	
Wives (dollars)						
Under 1000	1	25.0	1	11.1	2	15.4
1000-2999	2	50.0	6	66.7	8	61.4
3000 and over	1	25.0	2	22.2	3	23.2
Total	4	100.0	9	100.0	13	100.0
Mean	$2385		$2415		$2405	
Wife did not work	11		17		28	
Not married	5		2		7	
Mean nonfarm labor income[a]	$1239		$3199		$2329	
	n=20		n=25		n=45	

[a]This mean is based on the summation of respondent's and wife's labor incomes and on the number of cases for which there was complete information for both respondent and wife.

Table 55. Months after entering farming 1967 nonfarm respondents made a firm decision to leave farming, by entry age

Months	Entry age					
	Under 25		25 and over		Total	
	No.	%	No.	%	No.	%
Less than 12	5	23.8	2	7.1	7	14.3
12-29	2	9.5	7	25.0	9	18.4
30-47	5	23.8	9	32.1	14	28.6
48-65	7	33.3	5	17.9	12	24.5
66-83	2	9.5	1	3.6	3	6.1
84 and above	0	0.0	4	14.3	4	8.2
Total	21	100.0	28	100.0	49	100.0
Mean	39		43		41	

Table 56. Number of primary jobs held, average number of months each job was held and average monthly net income from nonfarm work for 1967 nonfarm respondents, by entry age[a]

Item	Entry age: Under 25		25 and over		Total	
	No.	%	No.	%	No.	%
Number of primary jobs held[b]						
1	4	19.0	12	42.6	16	32.6
2 to 3	7	33.3	12	42.8	19	38.8
4 or more	10	47.7	4	14.4	14	28.6
Total	21	100.0	28	100.0	49	100.0
Mean	3.3		2.1		2.7	
Average number of months each job held[b]						
Less than 18	9	42.8	11	39.3	20	40.8
18 to 47	11	52.4	9	32.1	20	40.8
48 or more	1	4.8	8	28.6	9	18.4
Total	21	100.0	28	100.0	49	100.0
Mean	21		32		28	
Average monthly net income[c] (dollars)						
Less than 350	5	25.0	5	17.8	10	20.8
350-549	11	55.0	15	53.6	26	54.2
550 or more	4	20.0	8	28.6	12	25.0
Total	20	100.0	28	100.0	48	100.0
Mean	441		508		480	

[a]Primary job is the job at which the respondent earned the most income in those cases where more than one job was held at a time.

[b]Difference by age significant at the 5 percent level.

[c]Net income means net of any expense incurred in earning the income, but before payroll and tax deductions.

Table 57. Business form used during the 1959-60 to 1967 period by 1967 farm operators, by entry age

Item	Entry age: Under 25 No.	Under 25 %	25 and over No.	25 and over %	Total No.	Total %
Business form used during period[a]						
Single proprietorship only	41	57.7	40	83.3	81	68.0
Partnership only	11	15.5	2	4.2	13	10.9
Both (individually or combined)	19	26.8	6	12.5	25	21.1
Total	71	100.0	48	100.0	119	100.0
Mean years operated as single proprietor	5.94		7.54		6.59	
Mean years operated in partnership	2.46		.73		1.76	
Mean years operated a farm	8.30		8.27		8.29	

[a]Difference by age significant at the five percent level.

Table 58. Land attributes of 1967 units operated by 1967 farm operators, by entry age and 1967 business form

Attribute	Under 25 — 1967 business form: Single operator	Under 25 — 1967 business form: Partnership	Under 25 — 1967 business form: Total	25 and over — 1967 business form: Single operator	25 and over — 1967 business form: Partnership	25 and over — 1967 business form: Total	Total — 1967 business form: Single operator	Total — 1967 business form: Partnership	Total — 1967 business form: Total
n	55	16	71	45	3	48	100	19	119
Owned land (acres)									
Respondent owned	57.7	26.8	50.8	50.3	116.7	54.5	54.4	41.1	52.3
Partner owned	xxx	161.6	36.4	xxx	10.0	.6	xxx	137.6	22.0
Total	57.7	188.4	87.2	50.3	126.7	55.1	54.4	178.7	74.3
Rented land[a] (acres)									
Crop share and cash	61.8	87.5	67.7	61.3	46.7	60.4	61.7	81.1	64.7
Crop share only	37.2	175.1	68.2	9.1	0.0	8.5	24.5	147.4	44.2
Cash only	71.2	25.6	60.8	35.5	8.3	33.8	55.0	22.9	49.9
Crop-livestock share	57.9	0.0	44.9	29.8	0.0	27.9	45.3	0.0	38.0
Total rented	228.1	288.2	241.6	135.7	55.0	130.6	186.5	251.4	196.8
Total acres operated	275.8	476.6	328.8	186.0	181.7	185.7	240.9	430.1	271.1
Total acres in harvested crops			326.5			134.6			195.4
Total value of land and buildings		$141,000			$80,900			$116,000	
Mean value/acre of land and buildings		$445			$474			$457	
Mean value/acre of bare land		$431			$412			$423	

[a]In partnerships, rented land includes land rented by partner and farmed in partnership with the respondent.

Table 59. Total acres and total number of tracts of land purchased by 1967 farm operators since entry into farming, by type of seller

Seller	Acres		Tracts	
	No.	%	No.	%
Farmer who retired	1388	25.8	12	27.8
Farmer who quit for a nonfarm job	1165	21.7	5	11.6
Widow of farm operator	760	14.1	6	14.0
Urban resident landlord	680	12.7	6	14.0
Estate of farm operator	490	9.1	6	14.0
Other (includes 3 unspecified)	893	16.6	8	18.6
Total	5376	100.0	43	100.0
Mean acres purchased for those who purchased land	(n=40) 134.4			
Mean acres purchased for all 1967 farm operators	(n=119) 45.2			

Table 60. Response of 1968 farm operators to the questions, "Under what conditions, if any, would you advise a young man to start farming in 1962?" And, "Under ....in 1968?", by entry age[a]

Condition	Response for 1962 Entry age Under 25 No.	%	25 and over No.	%	Total No.	%	Response for 1968 Entry age Under 25 No.	%	25 and over No.	%	Total No.	%
Financial backing - good credit rating	24	34.3	15	33.3	39	33.9	19	26.8	11	23.4	30	25.4
Someone to help - can farm on halves	14	20.0	1	2.2	15	13.0	9	12.7	6	12.8	15	12.7
Money or own assets	6	8.6	5	11.1	11	9.6	5	7.0	5	10.6	10	8.5
Willing to sacrifice - likes to farm	4	5.7	3	6.7	7	6.1	7	9.9	5	10.6	12	10.2
Avoid debt - own minimum machinery	4	5.7	9	20.0	13	11.3	3	4.2	1	2.1	4	3.4
Can rent good land - have good size farm	4	5.7	4	8.9	8	7.0	2	2.8	3	6.4	5	4.2
Can buy own land - owns or will inherit land	3	4.3	0	0.0	3	2.6	3	4.2	3	6.4	6	5.1
Have experience in farming	2	2.9	0	0.0	2	1.7	2	2.8	0	0.0	2	1.7
Miscellaneous	1	1.4	1	2.2	2	1.7	2	2.8	3	6.4	5	4.2
Would not advise it	8	11.4	7	15.6	15	13.0	19	26.8	10	21.3	29	24.6
Total	70	100.0	45	100.0	115	100.0	71	100.0	47	100.0	118	100.0

[a]The data for the question pertaining to 1962 was collected in 1961 along with the other data for the entry year. The data for the question pertaining to 1968 was collected in 1968. Both sets of data are comprised of only the first condition given by each respondent.