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By-Perkins, Brian; Hathaway, Dale E.

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Drawing upon information provided by a continuous sample of social security records for the 1955-59 period, this study traced year-by-year employment experience of workers who left agriculture, and described their age, race, income, and job status. Estimates of backflow to farms were also studied. The gross out-movement from farm employment was 142 percent, but the net reduction in farm employment was only 35 percent because of a large back-movement into farming. The net reduction was associated with the level of unemployment in the nonfarm economy. Off-farm mobility was higher for younger persons, multiple job holders, and those who had previous nonfarm work experience. Off-farm mobility was not related to previous income or race, and persons with the same characteristics had about the same mobility in different areas of the country. Back-movement was related to income gains or losses experienced in nonfarm employment. The 1957-58 recession retarded out-movement from farm employment, with the greatest impact on younger persons. (JM)

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Movement of Labor Between Farm and Nonfarm Jobs

an

Interregional Publication for the

State Agricultural Experiment Stations

MICHIGAN STATE UNIVERSITY
Agricultural Experiment Station
Department of Agricultural Economics
East Lansing, Michigan

TABLE OF CONTENTS

	Page
Summary	4
Introduction	6
The Mobility Concept	8
The Rate of Adjustment and the Size of the Farm Labor Force	9
Who Leaves Agriculture?	12
Farm Operators and Farm Laborers	13
Multiple and Single Jobholders	14
Age	16
Negroes and Non-Negroes	17
Farm Sector Income	18
Regional Variation in Off-Farm Mobility	19
In What Industries Do Off-Farm Movers Work?	19
Farm Operators and Farm Laborers	20
By Age Groups	22
By Farm Income Class	23
The Regional Variation	25
Mobility as a Response to Income Incentives	26
The Gains to Off-Farm Mobility	26
More Unemployment or Lower Rates of Pay?	30
Who Are the In-Farm Movers?	32
The Income Gains of In-Farm Movers	34
The Impact of Recession	36
The Effect on Overall Mobility Rates	37
How Different Groups of Farm Workers Were Affected	38
Regional Variation in the Impact of the Recession	39
The Prospects for Farm Labor Mobility	41

PAGE

Appendix A: The Social Security Sample Data 44

Employment Data 44

Income Data 44

The Demographic Data 45

Location and Industry Data 45

Quarters of Coverage 45

Appendix B: The Estimates of Differences in Off-Farm Mobility Rates .. 46

All the Farm Employed 46

Farm Wage Workers 47

Appendix C: The Error in the Estimates of Average Change in the Income Experienced by Off-Farm Movers 49

FOREWORD

THIS IS THE SECOND REPORT of research on agricultural labor mobility characteristics conducted under the Interregional Project IR-3, Impacts of Present and Proposed Agricultural Price and Income Programs. The first report published in 1964 deals with multiple job holding by farm operators and was published as Research Bulletin No. 5, Michigan Agricultural Experiment Station.

Substantial interest has been focused over the years on the potentials of movement of farm labor from labor surplus agricultural areas into nonfarm employment as one means of improving returns to labor and management in agriculture. This study, drawing upon the unique information provided by a continuous sample of social security records over a five year period, permits the actual tracing of employment experience year by year of a large number of workers who left agriculture, as well as the determining of such characteristics as age, race, income and job status of persons changing from farm to non-farm employment. Also provided by these data are useful estimates of the backflow of farm workers returning to farming from nonfarm jobs. The results of the study presented here will prove useful to all who are concerned with means of improving agricultural incomes and upgrading employment skills to increase out-mobility of excess labor in agriculture.

William A. Seay,
Interregional Administrative Advisor

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SUMMARY

THIS RESEARCH reports upon various aspects of mobility between farm and nonfarm employment. It is unique in that it is based on a continuous register sample of Social Security records which makes it possible to follow individuals from one year to the next.

The gross outmovement from farm employment (as defined in this research) was extremely high, averaging 14.2 percent per year for the five years studied. However, the net reduction in farm employment averaged only 3.5 percent because there was a large back-movement into farming. The net rate of reduction was closely associated with the level of unemployment in the nonfarm economy.

Off-farm mobility was much higher for younger persons and for persons who were multiple jobholders or had previous nonfarm work experience. There was no significant relationship between income and off-farm mobility, and the mobility rate for Negroes was not higher than for whites.

Off-farm mobility rates varied substantially among geographical regions. It turns out, however, that this variation is largely a function of different population characteristics. Persons with the same characteristics had about the same mobility in different areas of the country.

An examination of the income experience of off-farm movers indicates that their actions are highly consistent with predictions from a simple model of expected income gains. Persons who left farming and realized gains in income from the change stayed in nonfarm employment. Those who left farming and experienced lower incomes in their nonfarm employment returned to farming. It also appears that mobility rates are highly consistent with the income experience of groups leaving farming. That is, older farmers have low mobility because they rarely increase their incomes by moving to nonfarm employment.

The 1957-58 recession significantly retarded out-movement from farm employment. It both reduced the gross out-movement and increased the back-movement of persons who had previously left farming. The greatest impact was to reduce the mobility of younger persons. Its regional impact appeared to be greatest in the South although the unemployment was not highest in that region.

Much has been written about the difficulties of increasing the rate of outmovement from farming. Increasing the gross outmovement would not appear necessary. Policies are needed which will enable a higher proportion of those who do leave farming to be retained in the nonfarm economy. Part of this could be achieved by a better performance of the economy in terms of reduced unemployment. In addition, better training and skills would increase the chances of many who leave agriculture for nonfarm employment to find jobs which provide incomes appreciably above their previous earnings in farming.

THE MOVEMENT OF LABOR BETWEEN FARM AND NONFARM JOBS

BY BRIAN PERKINS* AND DALE HATHAWAY**

INTRODUCTION

THE MOVEMENT OF FARM LABOR to nonfarm jobs has received increasing attention in recent years, both by those who are concerned with the depopulation of rural areas, and by those who view it as a solution to "the farm problem." Yet relatively little has been known about the rate of this movement, or about its causes.

The movement from farm to nonfarm employment has been viewed as a response to higher earnings in nonfarm employment. But, though the farm labor force has been halved since 1930, the average income in 1960 of agricultural laborers was $2,100 less than that of other laborers, and the average income of farmers and farm managers was nearly $3,200 less than that of nonfarm self-employed proprietors and managers. Since off-farm labor mobility, by adding to the nonfarm and reducing the farm supply of labor, tends to diminish such income differences, questions arise: Should farm labor be encouraged to move out even more rapidly? If so, how can this be done?

This in turn leads to considerations as to why the rapid outmovement of labor has not been enough to raise farm incomes to nonfarm levels in the post-war years. Part of the answer is that the slow expansion in the demand for farm products and the large gains in productivity of farm labor have resulted in a decline, from year to year, in the number of workers required in agriculture. The situation may be likened to the difficulty of proceeding up an escalator which is moving downwards. If farm-nonfarm income differences are to diminish, labor must move out of agriculture fast enough to more than offset the tendency for rapidly rising agricultural productivity to widen the income gap.

Why, then, hasn't the adjustment in the size of the farm labor force been more rapid? Four explanations have been proposed in recent years: (a) imperfections in the labor market, so that farm workers are not well informed about nonfarm job opportunities, thus holding

*Assistant Professor of Agricultural Economics, University of Guelph.
**Professor of Agricultural Economics, Michigan State University.

down the rate of off-farm movement; (b) the existence of fixed farm investments which farmers can sell only at a considerable loss, thereby reducing the outmovement of farm operators; (c) unemployment in the nonfarm sector which sharply limits the jobs available to farm people seeking off-farm employment; and (d) an insufficient retention rate of those taking off-farm employment because they don't achieve expected gains in income. One of the purposes of this study was to test these explanations.

These impediments to free off-farm mobility have a different effect on individuals of different characteristics. The skills required for nonfarm employment vary by type of employment, and the ability to acquire such skills varies among different groups of workers. Generally, the higher the level of nonfarm skills, the higher the nonfarm income, and, therefore, the greater the probability of income gain large enough to induce off-farm mobility. Investigation of variation in off-farm mobility among workers with different characteristics is essential to understanding the nature of this movement.

Very little has been known about the movement from nonfarm jobs into agriculture. Evidence of an important in-farm movement has led to speculation that it mainly comprises individuals who have previously moved out of agriculture but who have failed to establish themselves in nonfarm employment. If this is correct, it is extremely important to learn the reason for this failure.

Largely, it is the lack of suitable data which has hindered the advancement of knowledge about the mobility of farm labor. From data based on the Census of Population it has been possible to measure migration from farms, and to examine the relationship of this movement to such factors as age, race, distance moved, and unemployment. But this information is about changes in residence, not changes in employment; and though many farm workers live on farms, many do not, and an increasing proportion of those who live on farms have nonfarm employment.

Changes in the Census definition of farms and hence of those persons who live on farms, and the fact that the Census of Population is taken only every 10 years, add to the disadvantages of this source for data on job mobility. Finally, the 1950 Census was the last in which information on the movement of farm people was gathered directly; the 1960 Census can provide information only on the *net* change in the farm population due to migration, not on the number

moving from nonfarm to farm residences and the number moving from farm to nonfarm residences.

This study was based on a new source of agricultural income and employment statistics. The data, made available to Michigan State University by the United States Social Security Administration, were obtained from a special sample of Social Security records; it comprised a sample of employment records for the period 1955-59 of individuals with Social Security coverage from agricultural employment in any of the years of this period. Unlike the Census statistics, these data provided information on jobs and earnings of the same individuals throughout a five-year period. This made it possible to examine job mobility directly, and, of even greater significance, to trace the fortunes of movers after their change in employment.

The Mobility Concepts

Since this study focused on employment changes between the farm sector and all other industries, which are referred to as the nonfarm sector, clarity about these terms is crucial to the discussion.

The farm labor force in a given calendar year was defined to include all persons in the Social Security sample who had coverage from farm employment in that year. Persons whose coverage in the given year was exclusively in nonfarm employment were classified as being in the nonfarm sector. Finally, those who had no covered employment in the given year were excluded from the labor force of both sectors in that year. Thus, employment changes from the farm sector in one year to the nonfarm sector in the next were referred to as off-farm mobility, and the reverse movement as in-farm mobility.

For most of the analyses of inter-sectoral mobility, four categories of farm employment were distinguished. Persons employed in agriculture were classified as either farm operators or farm laborers, and each of these occupations was subdivided into single and multiple jobholders. With the exception of individuals who were both farm operators and farm laborers, multiple jobholders were persons with jobs in *both sectors* in the given year. Farm operators whose only other coverage was from farm wage employment were also classified as multiple-job farm operators.

Because there are certain rules regarding Social Security coverage, the persons included in the farm labor force in this study are not exactly comparable to any of the several other definitions of the farm

labor force used in official statistics. No attempt at comparability was made in this study. A discussion of the comparability can be found in an earlier publication on multiple jobholding by farm operators.[1]

The Rate of Adustment in the Size of the Farm Labor Force[2]

Changes in the size of the farm labor force between one year and the next are the result of four different kinds of employment changes. Increases in farm employment can occur either through the entry into agriculture of persons not in the labor force, or through the movement of persons in nonfarm employment to farm jobs; while the withdrawal of agricultural workers from the labor force, or their movement to nonfarm jobs, reduces the size of the farm labor force.

Estimates of the average annual number of persons making such employment changes for the period 1955-59 are shown in Chart 1. It must be remembered, of course, that it was changes in job status which were investigated, so that many of these changes did not involve a change in residence. These data show clearly that the total number of persons changing employment status was much greater than the net change in farm employment numbers. For each reduction in the farm labor force, there were about 10 persons who either ceased to be employed in agriculture or took on a farm job.

The relative importance of these changes into or out of farm employment can be shown by expressing the number of workers making each of the changes as a percentage of the initial total of farm employed persons. These percentages indicate the *rate of movement* into or out of farm employment. Over the period 1955-59, the estimated annual mobility rate from farm to nonfarm employment was 14.1 percent; nonfarm to farm mobility was 12.5 percent, while the average entrance and retirement rates were 3.0 and 4.8 percent, respectively. It should be emphasized that the estimated off-farm mobility rate is extremely high. The low *net* rate of reduction in the farm labor force is due to the fact that the rate of movement into agriculture was also very high. Thus, job changes reduced the size of the farm labor force by an average 1.6 percent per annum, while the excess of retirements over entrants reduced it by 1.8 percent annually for the years covered in the study.

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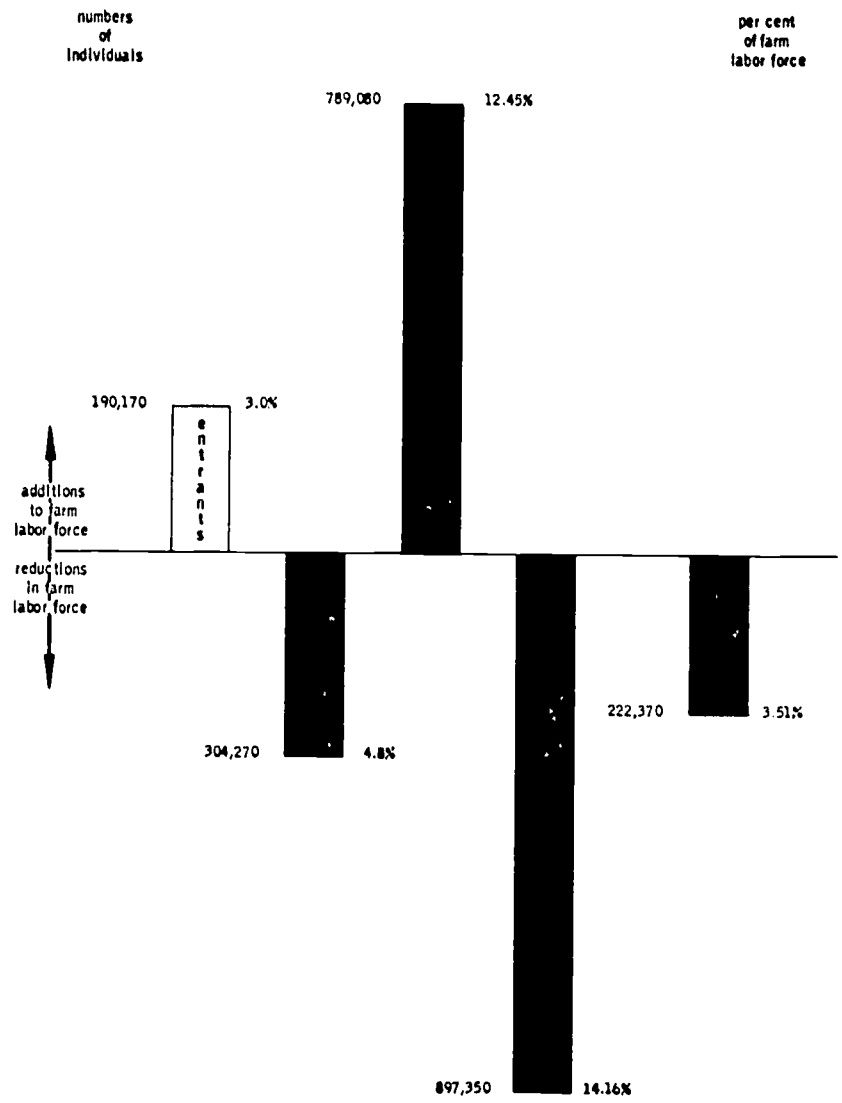
[1]Waldo, Arley D., and Dale E. Hathaway (1964). Multiple jobholding by farm operators, Mich. Agr. Expt. Sta. Res. Bul. 5. Also see Appendix A, page 44.

[2]There is a tendency to assume that job mobility and geographic migration are synonymous, and thus to try to compare these data with official statistics on net migration from the rural-farm population. This study is concerned only with job mobility and measures only changes made by persons in the *covered* labor force. Migration may involve family members who are not in the labor force.

Chart 1. Components of change in the size of the farm labor force; annual averages for the period 1955-59.



Source: Estimated from Social Security sample data.

There is a tendency for readers to compare these estimates with official statistics on out-migration from the rural-farm population and find them difficult to judge these estimates to be in error. The official estimates of out-migration are stated to not be accurate for year-to-year changes. Official estimates of the farm labor force include unpaid family workers as well as farm operators and hired laborers, so that the differences in concept make comparisons with these series irrelevant also.

In addition to entrants and retirements were those who, mainly because of very low incomes, failed to participate in the Social Security program in some years of the 1955-59 period, even though they were in the labor force. To determine whether mobility rates between agri-

culture and the non-farm sector were magnified by instability in the employment of these individuals, mobility rates were also estimated for those in the sample who had Social Security coverage in all years of the period. In fact, the movement both out of and into the farm sector was higher for those who had continuous coverage than for those with intermittent coverage.

Among those with continuous participation in the Social Security program, the average annual off-farm mobility rate was 15.6 percent and the average in-farm mobility rate was 13.4 percent. Not only were persons with continuous coverage more mobile, they clearly had better access to the non-farm labor markets in that the rate of decline in farm employment of such persons averaged 2.2 percent annually, a considerably higher rate than for the farm labor force as a whole.

Closely related to the rate of labor mobility between the farm and the non-farm sector is the permanence of such employment changes. Estimates of the proportion of movers who stayed two years or more in the sector to which they had moved revealed a low degree of permanence in such changes. Of the off-farm movers, only 71 percent remained in the nonfarm sector for at least two years, and among in-farm movers only 49 percent continued in farm employment for two or more years.

The difference between the stability of employment of the in-farm and off-farm movers is, of course, due to factors similar to those which have induced a declining farm labor force. But the relatively low degree of permanence in the job changes of both groups of movers raises the interesting question as to whether the high mobility rates estimated from the Social Security data resulted from the extremely high mobility of a small part of the sample.

A simple way to answer this question is to examine the proportion of all moves between the sectors accounted for by persons who moved once, twice, three and four times in the years 1955 through 1959. These proportions are shown in Table 1 for those persons in the sample with continuous participation in the Social Security program. Since those who moved three or four times accounted for only 15 percent of all moves, it is clear that the mobility rates were high primarily because of the number of movers, rather than because of the importance of persons with highly unstable employment patterns.

TABLE 1—Proportion of all changes between farm and nonfarm employment made by persons who moved once, twice, three and four times, 1955-59.

Persons Who Moved:	Percentage of all farm-nonfarm moves (%)
Once	40.4
Twice	44.3
Three Times	12.8
Four Times	2.5
All Movers	100.0

Source: Estimated from records of persons in the Social Security sample who had coverage in all the years 1955 through 1959.

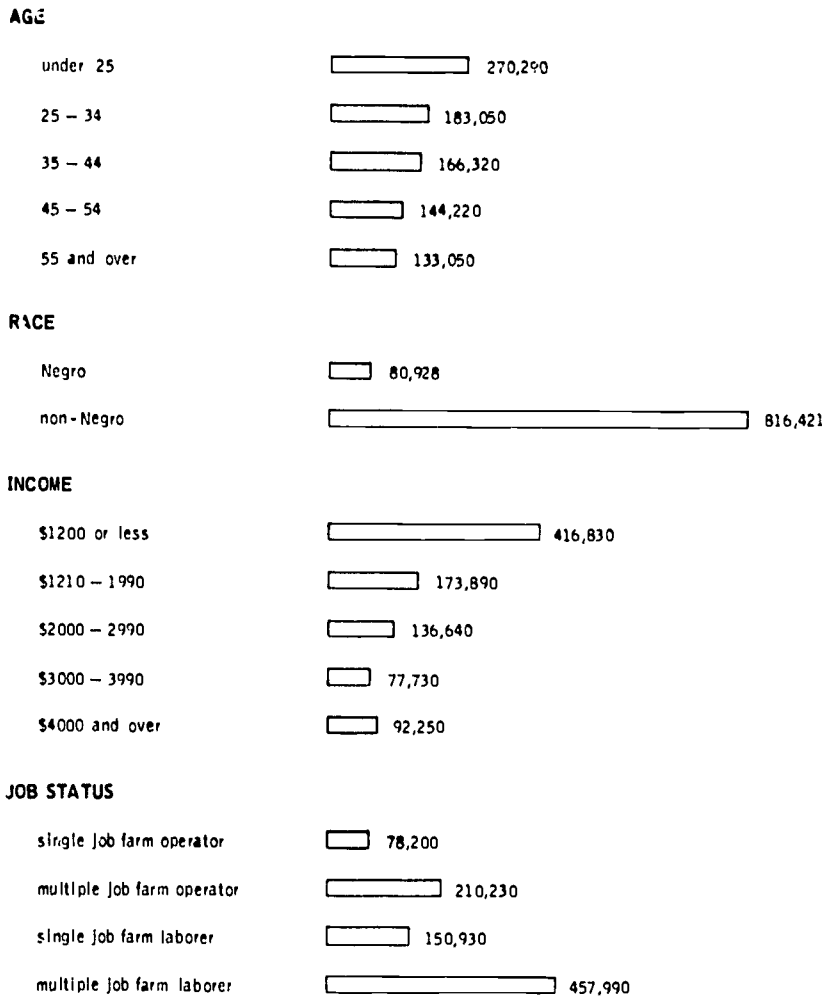
Who Leaves Agriculture?

One way of answering this question is to determine the dominant characteristics of off-farm movers. In Chart 2 the estimated number of off-farm movers in different age, race, income and farm job status groups are compared. These estimates show that the number of movers out of agriculture was higher in the younger age groups and in the lower income classes, that most of these movers were not Negroes, that a majority were farm laborers and multiple jobholders. But the predominance of these characteristics among movers could be due solely to the predominance of young persons, low income persons, non-Negroes, laborers, and multiple jobholders in the farm labor force.

To understand the nature of the off-farm mobility process, to determine the effect of age, race, income or employment status on mobility, it is necessary to interpret the question as, what is the probability of a worker of such-and-such characteristics leaving agriculture? Who is more likely to move to the nonfarm sector, the farm operator or the farm laborer, the young worker or the older one, the Negro or the non-Negro?

The probability of off-farm mobility is, of course, the same as the rate of off-farm mobility as defined in the previous section. That is, the probability is indicated by the proportion of farm workers of the given characteristics who moved out of agriculture. Thus, the estimated rate of off-farm mobility for the whole farm labor force of 14.1 percent indicates that the probability of a farm worker moving to the nonfarm sector was 141 in 1,000.

Chart 2. Average annual numbers of off-farm movers by age, race, income and job status, 1955-59.



Source: Estimated from the Social Security sample data.

It might appear that to find out which farm occupation, for example, has the highest rate of off-farm mobility it is enough to compare the mobility rates of farm operators and of farm laborers. However, such a comparison would ignore differences between these occupations with respect to other characteristics. If the probability of a laborer leaving agriculture is greater than the probability of a farm operator leaving the industry, is this because of occupational differences, or because of age, income or race differences? Consequently, in the comparisons of off-farm mobility rates in this study, adjustment was made for such differences between groups.[3]

(a) Farm Operators and Farm Laborers

The notion that fixed investments in farms have slowed down the movement out of agriculture implies that the off-farm mobility rate

[3]See Appendix B for the method whereby these rates were computed.

of farm operators is less than that of farm laborers, all other factors held constant. Estimates of the difference in off-farm mobility rates between farm laborers and farm operators for each of the periods 1955-56, 1956-57, 1957-58 and 1958-59 are presented in Table 2.

TABLE 2—Differences in off-farm mobility rates between farm laborers and farm operators, 1955 to 1959.

Off-farm mobility period	Amount by which the mobility rate for farm laborers exceeded that of farm operators	
	Single jobholders	Multiple jobholders
1955-56	2.2°	22.5°°
1956-57	0.8	18.8°°
1957-58	1.5	20.2°°
1958-59	1.4	22.8°°

Source: Estimated from Social Security sample data. The estimates were derived from regressions of off-farm mobility rates on farm employment status, age and income.
°Statistically different from zero at the .05 level as measured by a one tailed t test.
°°Statistically different from zero at the .01 level as measured by a one tailed t test.

Among multiple jobholders the off-farm mobility rate of laborers was close to 20 percentage points higher than for farm operators in all periods. But, among single jobholders there was no significant difference in mobility between laborers and operators. Consequently, there is a possibility that the differences observed between the multiple jobholders were due to factors other than fixed asset ownership. Such factors could have included differences in the nature of multiple jobholding among farm operators and laborers. This point is discussed in more detail in the next subsection.

(b) Multiple and Single Jobholders

Whether multiple jobholders can be expected to move out of agriculture more or less rapidly than single jobholders, depends on the hypothesis held about the nature of multiple jobholding. If it is typically an alternative to off-farm mobility—a compromise which provides insurance against the instability of non-farm employment—multiple jobholders would be expected to be less mobile than single jobholders, once they attain this best of two worlds. However, in this study it was presumed that multiple jobholding was usually a stage in the process of leaving the farm. In this stage individuals obtain training in, and information about, nonfarm jobs, and consequently multiple jobholders would exhibit higher mobility rates.

Estimated differences in the off-farm mobility rates of multiple and single jobholders were large in all instances, and particularly so

among farm laborers (see Table 3). Thus, these data provided strong support for the notion that multiple jobholding is a means of moving to exclusively nonfarm employment. Since this hypothesis was based on the idea that nonfarm job experience facilitates off-farm mobility, an alternative test was to examine the off-farm movement of persons classified by the number of years of nonfarm job experience. Such a classification is presented in Chart 3 for the period 1958-59, for each farm employment status.

Again, the evidence strongly supported the notion that the rate of off-farm mobility was closely associated with the extent of nonfarm job experience. With the exception of those who were multiple-job laborers in 1958, the rate rose by about 10 percentage points from persons who had no nonfarm job experience in the three preceding years 1955-56-57, to those who had nonfarm jobs in all three years. In the case of multiple-job laborers, the increase in the mobility rate with nonfarm experience was less marked, but since the mobility rate for all these workers was well over 40 percent, this is not surprising.

Multiple jobholding among farm laborers often takes the form of successive short-term jobs in farm and nonfarm employment, rather than concurrent employment in both sectors. To quote a Department of Labor publication,

> "wage workers in agriculture do not, for the most part, have stable year-round attachment to their jobs. A considerable proportion of them shift back and forth between farm and nonfarm work . . ." (*Farm Labor Fact Book*, U.S. Department of Labor, 1959)

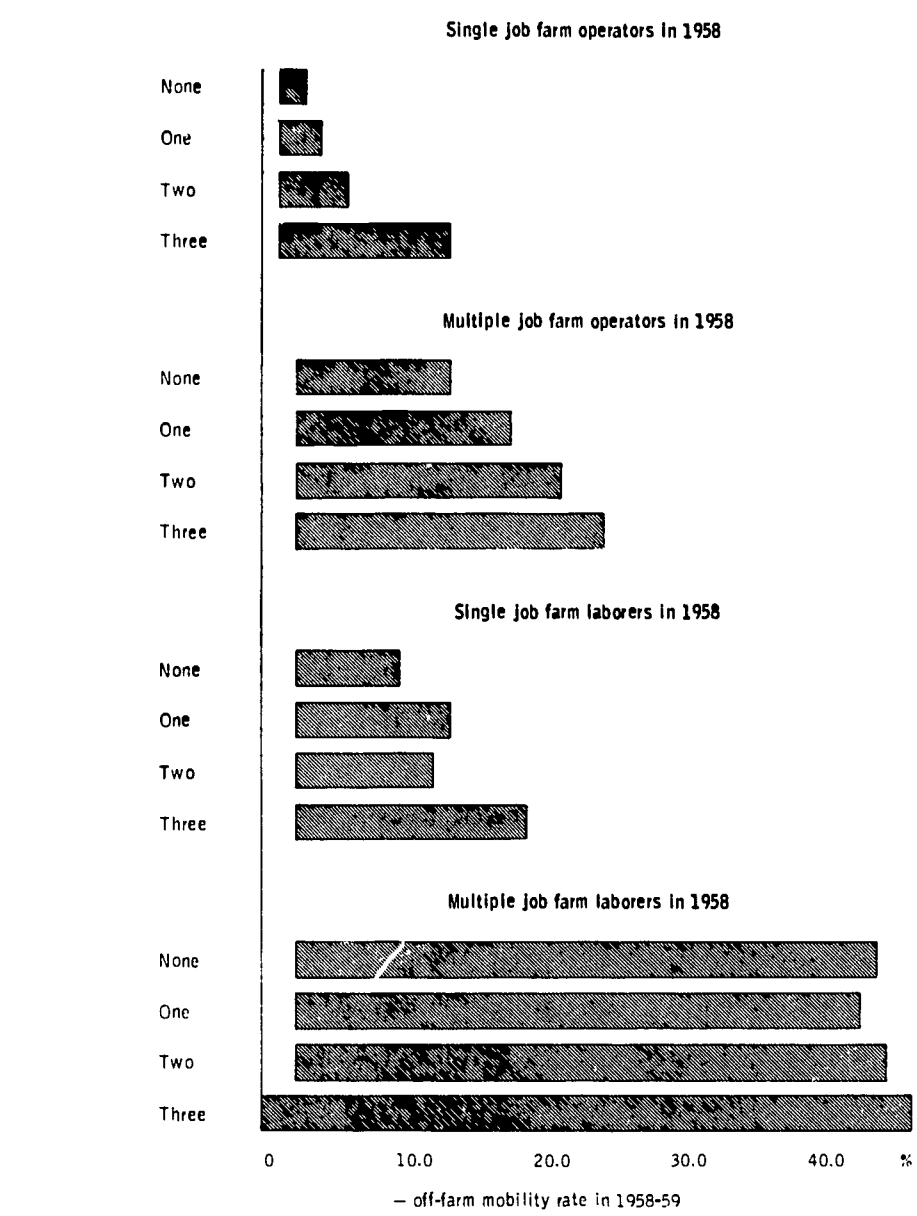
The very instability of employment which characterizes such workers probably accounts for their off-farm mobility rate exceeding that of

TABLE 3—Differences in off-farm mobility rates between multiple and single jobholders in agriculture, 1955-59.

Off-farm mobility period:	Amount by which the mobility rate of multiple jobholders exceeded that of single jobholders among: Farm operators	Farm laborers
1955-56	15.9**	36.2**
1956-57	20.1**	38.1**
1957-58	16.3**	35.1**
1958-59	15.7**	37.0**

Source: Estimated from Social Security sample data. The estimates were derived from regressions of off-farm mobility rates on farm employment status, age and income.
**Statistically different from zero at the .01 level as measured by a one tailed t test.

Chart 3. The effect of nonfarm job experience on the rate of off-farm mobility in 1958-59.



Source: Estimated from Social Security sample data.

multiple-job farm operators. It undoubtedly contributed to their mobility rate being so much higher than that of other farm laborers.

(c) Age

Many studies have shown that changes in residence or employment decline with age. In the context of off-farm mobility, there are many reasons for anticipating a negative relationship with age. Years of school completed tend to decline with age, and the quality of the

education attained by older persons is often less suited to current nonfarm job requirements. Skills acquired in farm employment are not readily marketable in the nonfarm sector, and consequently younger farm workers are not disadvantaged by their limited experience in nonfarm work; on the contrary, nonfarm employers are more willing to invest in the training of young persons than of older ones. Moreover, young persons enjoy the prospect of more working years in which to benefit from the change in employment, and also tend to have fewer economic and social ties with their farm jobs. Finally, the difficulty of gaining admittance to jobs with fringe benefits, such as pension programs, increases with advancing age, and tends to be particularly great for persons over 40 years old.

The results of this study were entirely consistent with this reasoning (see Table 4). The off-farm mobility rate of each age group was uniformly higher than the rate of the next oldest group, and these differences were most marked between the youngest age groups. The difference in mobility rates between persons aged 35 to 44 and those in the 45 to 54 age group was not significant, and again, this was consistent with the expectation that the off-farm mobility rate for persons 40 years or over is uniformly low.

TABLE 4—Differences in off-farm mobility rates among age groups, 1955-59.

Off-farm mobility period	Amount by which the mobility rate of an age group exceeded that of older age group: Under 25 over 25-34	25-34 over 35-44	35-44 over 45-54	45-54 over 55 and older
1955-56	2.9*	2.4*	1.0	3.7**
1956-57	8.5**	4.2**	0.6	2.1
1957-58	3.5**	3.4**	0.4	0.1
1958-59	5.4**	1.9	1.4	1.9

Source: Estimated from Social Security sample data. The estimates were derived from regressions of off-farm mobility rates on farm employment status, age and income.
*Statistically different from zero at the .05 level as measured by a one tailed t test.
**Statistically different from zero at the .01 level as measured by a one tailed t test.

(d) Negroes and Non-Negroes

On the assumption that Negro farm workers have attained fewer skills, one would predict that their opportunities in the nonfarm labor market were not as good as those of non-Negroes. In spite of this, Census off-farm migration estimates for the 1940-50 decade were considerably higher for non-whites than for whites, and on the basis of this evidence, a similar relationship was hypothesized in this study.

TABLE 5—Differences in off-farm mobility of farm laborers, by race, 1955-59.

Off-farm mobility period	Amount by which the mobility rate of non-Negroes exceeded that of Negroes
1955-56	2.5*
1956-57	2.7
1957-58	0.7
1958-59	6.1*

*Statistically different from zero at the .05 level as measured by a one tailed t test.
Source: Estimated from Social Security data.

Unfortunately, insufficient records of Negro farm operators (more than four-fifths of Negro farm workers in the sample were laborers), made it necessary to examine the effect of race on mobility with data exclusively on farm laborers.

The estimated differences in off-farm mobility rates between Negroes and non-Negroes are shown in Table 5. Contrary to expectations, the mobility rate of Negroes was less than that of non-Negroes in all periods. Thus these results provided further support for the notion that off-farm mobility is related to education and labor skills.

These results suggest the importance of measuring net relationships which take differences in other population characteristics into account. A simple mobility rate for Negroes would be higher than for whites. But, the Negro farm population has a much higher proportion of its total in the young age groups where mobility is much higher. Thus, what is generally assumed to be high mobility among Negroes probably is a function of age rather than race.

(e) Farm Sector Income

Based on Census data, net off-farm migration rates have been shown to be highest for low farm income areas, and lowest for high farm income areas. However, *no evidence of a decline in off-farm mobility rates with rising income levels was found in this study.* Differences in mobility rates between income classes were negligible, and the rates did not change consistently with income. But it should be noted that there is no necessary connection between community migration rates and the mobility rates of individuals. The lack of relationship between off-farm mobility and income suggests that those with high incomes in the farm sector had potentially high nonfarm incomes, and vice versa.

The lack of relationship between beginning income level and mobility raises additional questions regarding the role of assets in

employment mobility. Presumably, farmers with substantial assets should have had higher earnings in agriculture than farmers whose earnings were largely the product of their labor input. Therefore, one would expect higher income farmers to have lower mobility rates. Since this was not the case, the depressing effect of owning farm assets upon mobility does not appear significant.

(f) Regional Variation in Off-Farm Mobility

The relationships between off-farm mobility and farm employment status, age, race and income were also examined at the regional level, primarily as a check on conclusions derived from national data. For this purpose, the conterminous U.S. was divided into six regions.[4] Overall off-farm mobility rates, shown in Table 6 for the periods 1957-58 and 1958-59, varied considerably among the regions, ranging from 8-10 percent in the West North Central region to 18-20 percent in the Pacific. By comparison, regional variation in the off-farm mobil-

TABLE 6—Regional off-farm mobility rates by employment status, 1957-58 and 1958-59(a)

Farm employment status	North East	East North Central	West North Central	South Atlantic and East South Central	West South Central and Mountain	Pacific	Conterminous U.S.
1957-58							
Single job operator	2.1	2.2	1.7	2.2	2.4	3.7	2.1
Multiple job operator	20.1	20.3	17.7	19.2	18.3	22.6	19.2
Single job laborer	8.7	7.5	8.4	5.9	6.9	6.4	7.0
Multiple job laborer	42.9	42.9	42.0	39.5	40.4	38.5	40.6
All employment categories	16.2	10.8	8.8	11.3	13.9	18.2	12.4
1958-59							
Single job operator	2.7	2.6	2.1	2.8	3.0	2.8	2.5
Multiple job operator	16.9	21.0	18.7	20.4	19.0	18.4	19.4
Single job laborer	10.3	10.9	12.1	7.1	7.1	9.2	8.8
Multiple job laborer	47.1	53.1	46.8	39.8	43.7	43.4	45.0
All employment categories	17.8	13.0	9.9	12.3	14.6	19.7	13.6

(a) Based on Social Security sample data for those individuals employed in the conterminous U.S. for whom state of employment was reported.

[4] I *North East:* Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland; II *East South Central:* Ohio, Indiana, Illinois, Michigan, Wisconsin; III *West North Central:* Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas; IV *South Atlantic and East South Central:* Florida, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Kentucky, Tennessee, Alabama, Mississippi; V *West South Central and Mountain:* Arkansas, Louisiana, Oklahoma, Texas, Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada; VI *Pacific:* Washington, Oregon, California.

ity rates of each farm employment category was small. Regional differences in the rate of movement out of agriculture were due mainly to differences in the composition of the farm labor force, not to variation between regions.

In general, this conclusion was also supported by the estimates of differences in mobility rates between groups differing in employment status, age, race and income. However, the number of records per region for some age and income classes was too small for reliable results. Nearly two-thirds of Negro farm workers were concentrated into the South Atlantic and East South Central region. The usefulness of the regional analysis was limited by the necessary reduction in the number of income and age class and the fact that mobility rate differences between race groups could only be estimated reliably in one region.

In What Industries Do Off-Farm Movers Work?

Assuming off-farm movers have fewer nonfarm employment skills than others in the nonfarm labor force, one would predict that they would find employment mainly in industries which employ a high proportion of unskilled labor. In general, this prediction was confirmed. The industrial distribution of movers' wage jobs in their first year in the nonfarm sector was used as the measure of the industry of employment of the movers. It should be emphasized that these distributions do not exactly correspond to distributions of movers among industries, because some movers held more than one wage job, and others were self-employed. Unfortunately, reporting on the industry of self-employment was too incomplete to be included in this study.

(a) Farm Operators and Farm Laborers

A preliminary analysis revealed little difference in the nonfarm industry of employment of single and by multiple jobholders, so this classification was omitted. In contrast, pronounced differences in the distribution of wage jobs taken by farm operator movers and by farm laborer movers were apparent (see Table 7). The distributions differed mainly with respect to four industries. Agriculture,[5] forestry and fisheries, construction, and wholesale and retail trade were important sources of employment for farm laborers. Government accounted for a much larger proportion of the jobs taken by farm operators.

[5]Excluding farm employment.

TABLE 7—The industrial distributions of wage jobs taken by movers in the 1956-57 and the 1957-58 mobility periods, by farm occupation of movers, and of all unskilled nonfarm occupations in 1960(a)

Industry	Farm operators 1957 %	Farm operators 1958 %	Farm wage workers 1957 %	Farm wage workers 1958 %	Operatives and kindred workers, service workers, and nonfarm laborers 1960 %
Agriculture(b), forestry and fisheries	2.7	2.4	8.9	6.1	2.1
Mining	4.2	2.6	2.8	2.2	2.5
Construction	15.2	14.8	16.1	19.2	6.9
Manufacturing	22.3	21.3	23.4	21.5	42.4
Utilities	4.5	4.9	4.7	5.3	11.8
Wholesale and retail trade	18.1	21.9	24.6	26.3	15.5
Finance, insurance and real estate	2.3	2.4	1.7	1.7	1.0
Services	8.2	10.3	10.9	10.8	12.3
Government	21.1	17.9	4.8	5.3	4.9
Other(c)	1.3	1.5	2.1	1.4	0.5
All industries	100.0	100.0	100.0	100.0	100.0

(a) Distributions of movers' jobs based on Social Security sample data; distribution of unskilled occupations in 1960 computed from Census of Population, PC (1), 1D, U.S.
(b) Excluding farm employment.
(c) Including non-classifiable and non-classified.

The importance of agriculture, forestry and fisheries to farm laborers can be attributed both to its close connections with farming and to its relatively large requirements of unskilled labor; unskilled labor needs, together with the ubiquity of the industry, also accounts for the preference for construction jobs by farm laborers. The preference of off-farm movers, particularly farm laborers, for employment in trade appears due to other factors, unless their farm experience made them particularly suitable for employment in the distribution of products related to agriculture. Government employment among farm operator movers probably resulted from such individuals readily obtaining jobs in government programs relating to farming, and in the local governments of rural areas.

As expected, both the distributions of farm operators' jobs and of farm laborers' jobs were similar to the distribution of the three least skilled nonfarm occupations, namely, operatives and kindred workers, service workers, and nonfarm laborers. Differences between the industrial distributions of the latter occupations and of off-farm movers were largely confined to two industries; in manufacturing the incidence

of movers' jobs was relatively very low, whereas in trade the proportion of movers' jobs was greater than for the least skilled nonfarm workers.

The high incidence of movers in trade jobs is due partly to the ubiquity of that industry. But, it seems highly probable that the low degree of unionization in the trade industry has encouraged entry into it by off-farm movers. In 1960, only 7 percent of employees in trade were unionized. By contrast, in manufacturing 50 percent of all employees were union members, which may be a reason for the proportion of movers' jobs being much lower than the proportion of other unskilled workers in manufacturing.

(b) By Age Groups

Data on the industrial distribution of movers' jobs classified by age classes indicate that the relative importance of industries as sources of employment did not change consistently with advancing age (see Table 8). This is not surprising since the industrial classification was not very detailed, and any given industry would include both occupa-

TABLE 8a—The industrial distributions of wage jobs taken by movers in the 1956-57 mobility period, by farm occupation of movers, and by age(a)

Industry	Age:	Farm operators					Farm wage workers				
		Under 25 %	25-34 %	35-44 %	45-54 %	55 and over %	Under 25 %	25-34 %	35-44 %	45-54 %	55 and over %
1957											
Agriculture(b), forestry and fisheries		8.1	2.2	2.8	3.1	1.1	9.7	7.5	5.7	9.7	11.9
Mining		1.2	3.6	4.2	7.5	2.2	2.9	2.9	2.7	2.1	4.0
Construction		16.3	14.2	19.1	18.1	7.4	14.6	16.3	18.3	19.8	13.5
Manufacturing		31.4	29.9	24.1	20.8	11.0	24.7	25.5	24.3	20.9	12.7
Utilities		3.5	6.6	5.5	2.7	3.3	4.6	7.0	4.2	3.7	2.0
Wholesale and retail trade		16.3	20.1	16.1	17.4	20.6	27.0	23.1	23.8	21.9	23.0
Finance, insurance and real estate		1.2	3.3	0.6	1.0	5.5	1.0	1.4	2.8	1.3	4.8
Services		7.0	5.5	10.8	4.8	11.4	9.5	9.6	11.6	12.0	19.4
Government		15.1	13.1	15.0	23.2	36.8	4.5	4.3	4.4	5.2	7.5
Other(c)		0	1.5	1.9	1.4	0.7	1.6	2.4	2.3	3.4	1.2
All industries		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) Based on Social Security sample data.
(b) Excluding farm employment.
(c) Including non-classified and non-classifiable.

TABLE 8b—The industrial distributions of wage jobs taken by movers in the 1958 mobility period, by farm occupation of movers, and by age(a)

Industry	Age:	Farm operators					Farm wage workers				
		Under 25 %	25-34 %	35-44 %	45-54 %	55 and over %	Under 25 %	25-34 %	35-44 %	45-54 %	55 and over %
1958											
Agriculture(b), forestry and fisheries		6.3	2.5	2.5	1.9	1.3	7.7	4.9	2.6	6.6	8.6
Mining		0	3.2	3.7	2.7	1.6	2.9	1.9	2.4	1.5	0.3
Construction		12.7	16.8	16.0	17.0	9.8	15.1	24.3	21.2	21.7	15.8
Manufacturing		27.8	22.1	25.3	17.8	17.3	22.0	23.6	21.3	19.1	15.3
Utilities		1.6	7.4	5.3	5.4	2.9	4.2	6.1	7.7	5.0	3.1
Wholesale and retail trade		31.0	24.6	21.6	19.5	19.0	30.4	22.9	24.5	23.1	25.2
Finance, insurance and real estate		4.0	1.4	0.8	3.5	3.3	1.3	2.0	1.4	2.0	3.1
Services		4.8	6.7	8.1	14.9	12.7	9.3	9.2	11.7	12.4	20.8
Government		11.1	14.0	15.4	14.6	31.4	5.5	4.1	5.0	7.0	6.8
Other(c)		0.8	1.4	1.1	2.7	0.7	1.4	1.1	1.2	1.7	1.0
All industries		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) Based on Social Security sample data.
(b) Excluding farm employment.
(c) Including non-classified and non-classifiable.

(c) Including non-classified and non-classifiable.

tions which became more accessible with advancing age and others which became less accessible. Nevertheless, some relationships between the relative importance of industries were apparent. Industries characterized by heavier physical work—such as construction, manufacturing, trade, and agriculture, forestry and fisheries—tended to decline in importance with the age of the mover. The proportion of jobs accounted for by government and services increased with advancing age.

The greater importance of agriculture, forestry and fisheries, construction, and trade to movers who were farm laborers; and the greater importance of government to those who were farm operators is due partly to the fact that, on the average, the latter were 46 years old, and the laborers were only 28. But, differences in the jobs taken by the two occupational groups persist between movers in the same age class, and, therefore, cannot entirely be explained by age differences.

(c) By Farm Income Class

If, as generally assumed, there is a positive relationship between income in the farm sector and the level of individual education and

skills, we might also expect to see this reflected in a relationship between farm sector income and industry of nonfarm employment. It has been shown that the industrial distribution of all farm-nonfarm movers is roughly similar to that of nonfarm workers in the lower skill and pay categories. However, it was expected that as one moved up the income scale in the farm sector that higher income farm-nonfarm movers would have an industrial distribution closer to that of the *total* population.

The results are mixed relative to these expectations (Table 9). For farm operator movers, the higher income group had an industrial distribution similar to that for all nonfarm workers. For farm wage workers there was no apparent convergence toward the nonfarm distribution of employment by industry; instead, the industrial distribution of employment of individuals who had been farm wage workers continued to be quite different for each income group. However, it is probable that the earnings of farm wage workers in the farm sector are more likely to be directly related to specific skills and situations than are the earnings of farm operators.

TABLE 9a—The industrial distribution of wage jobs taken by movers in the 1956-57 mobility period, by farm occupation of movers and by farm sector income, and of all nonfarm occupations(a)

1957		Farm operators			Farm wage workers				All nonfarm occupations (excl. self-employment) in 1960
Industry	Income:	Under $2000 %	$2000 -3990 %	$4000 or over %	Under $900 %	$900 -1990 %	$2000 -3990 %	$4000 or over %	%
Agriculture(b), forestry and fisheries		3.3	2.8	1.2	10.9	8.1	6.8	13.5	1.1
Mining		5.5	3.2	3.2	1.7	2.9	4.0	4.8	1.6
Construction		14.2	16.7	13.6	12.7	17.5	18.7	15.1	9.0
Manufacturing		18.8	23.4	26.8	19.4	25.6	25.2	25.4	33.9
Utilities		3.1	5.0	6.4	4.9	4.2	4.9	7.1	9.5
Wholesale and retail trade		19.9	17.3	15.6	26.5	24.1	23.9	15.9	16.8
Finance, insurance and real estate		2.2	1.6	4.0	2.0	1.7	1.2	3.2	3.6
Services		9.4	6.9	7.6	13.8	9.8	9.1	7.1	14.4
Government		21.6	22.2	20.9	6.0	4.1	4.0	5.6	6.0
Other(c)		1.8	1.0	0.8	2.0	2.0	2.3	2.4	4.1
All industries		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) Distributions of movers' jobs based on Social Security data; distribution of all nonfarm occupations was computed from data in Census of Population Report, PC (1), 1D, U.S.
(b) Excluding farm employment.
(c) Including non-classified and non-classifiable.

TABLE 9b—The industrial distribution of wage jobs taken by movers in the 1958 mobility period, by farm occupation of movers and by farm sector income, and of all nonfarm occupations(a)

1958 Industry	Income:	Farm operators Under $2000 %	$2000 -3990 %	$4000 or over %	Farm wage workers Under $900 %	$900 -1990 %	$2000 -3990 %	$4000 or over %	All nonfarm occupations (excl. self-employment) in 1960 %
Agriculture(b), forestry and fisheries		2.6	2.0	3.0	6.6	6.4	5.3	4.8	1.1
Mining		2.0	2.7	3.3	1.5	1.8	3.2	6.1	1.6
Construction		17.3	15.0	10.2	16.8	20.0	21.5	21.5	9.0
Manufacturing		17.3	20.5	29.8	19.3	23.5	22.3	22.5	33.9
Utilities		4.6	6.3	2.6	4.4	5.1	6.5	7.2	9.5
Wholesale and retail trade		22.6	23.0	18.4	29.1	25.4	24.7	19.1	16.8
Finance, insurance and real estate		2.6	1.7	3.6	1.4	1.7	2.0	3.1	3.6
Services		9.3	10.5	11.5	13.3	9.6	9.0	7.8	14.4
Government		20.6	16.2	16.7	6.1	5.1	4.1	6.8	6.0
Other(c)		1.1	2.0	1.0	1.6	1.3	1.5	1.0	4.1
All industries		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) Distributions of movers' jobs were based on Social Security data; distribution of all nonfarm occupations was computed from data in Census of Population Report, PC (1), 1D, U.S.
(b) Excluding farm employment.
(c) Including non-classified and non-classifiable.

(d) Regional Variation

The industrial distributions of movers' jobs for each region are presented in Table 10. These distributions reveal a broad similarity among regions in the relative importance of industries, particularly among the job distributions of farm laborer movers. However, for both groups of movers there were major exceptions, associated mainly with regional variation in the importance of certain industries.

In the farm operator group, the proportion of manufacturing jobs ranged from 28 percent in the North East to 15 percent in the West South Central and Mountain. In the latter region construction and, not surprisingly, mining jobs were more common than in other regions. Trade was a major source of nonfarm employment for all farm operators, but particularly so in the West North Central. Government was among the three principal sources of employment in all regions except the Pacific, where it accounted for only 8 percent of jobs taken by farm operators. By contrast, employment in services was almost twice as frequent in the Pacific as in any other region, providing 20 percent of

TABLE 10—The industrial distribution of wage jobs taken by movers in the 1957-58 mobility period, by farm occupation of movers, and by region(a)

Industry	Farm operators						Farm wage workers					
	I	II	III	IV	V	VI	I	II	III	IV	V	VI
	%	%	%	%	%	%	%	%	%	%	%	%
Agriculture(b), forestry and fisheries	1.8	2.3	2.6	3.2	0.5	4.6	7.6	4.6	5.6	5.7	5.4	7.2
Mining	2.8	1.3	2.8	2.0	4.2	1.8	0.6	1.5	2.7	1.3	5.1	1.8
Construction	11.0	14.4	12.0	16.1	23.7	12.8	14.8	14.2	20.7	21.3	22.9	17.7
Manufacturing	27.5	27.4	18.5	20.6	14.9	21.1	30.1	28.2	15.6	19.5	16.5	23.8
Utilities	7.3	3.0	7.1	3.2	3.3	6.4	3.9	4.2	5.4	5.1	4.6	6.8
Wholesale and retail trade	19.3	20.4	25.1	20.0	20.9	22.0	26.9	28.9	28.0	28.2	25.8	25.6
Finance, insurance and real estate	3.7	3.0	2.8	2.4	0.5	2.0	1.2	1.1	1.7	2.6	1.5	2.1
Services	9.2	9.4	9.1	8.1	11.2	20.2	9.3	10.0	11.9	9.7	11.4	10.7
Government	17.4	17.7	18.8	21.0	18.6	8.3	4.9	5.0	7.5	4.8	5.5	3.1
Other(c)	0	1.0	1.1	3.6	2.3	0	0.7	2.3	1.0	1.8	1.2	1.2
All industries	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) Based on Social Security sample data. Regions: North East (I), East North Central (II), West North Central (III), South Atlantic and East South Central (IV), West South Central and Mountain (V), Pacific (VI).
(b) Excluding farm employment.
(c) Including non-classified and non-classifiable.

all jobs. Utilities accounted for about 7 percent of jobs in the North East, the West North Central, and the Pacific, but only 3 percent of the jobs in other regions.

Regional variation in the industries chosen by movers who had been farm laborers tended to parallel the variation noted in the jobs of farm operator movers. It seems reasonable to conclude, therefore, that differences in wage job opportunities among regions influenced the industrial choice of both groups in much the same way.

Mobility as a Response to Income Incentives

The Gains to Off-Farm Mobility

Since the essence of the economic explanation of off-farm mobility is that movers expect to increase their incomes by changing to nonfarm jobs, it is important to test this notion in detail.

Presumably, decisions about such changes in employment are based on comparisons of expected incomes over long periods of time, not merely current income differences, and they make some allowance for possible differences in living costs and in non-monetary factors associated with the jobs compared. The Social Security data do not permit adjustment to be made for these factors in estimating differences in incomes. In fact, the only information which could be derived from these data was the income experience of workers from one year

to the next, comparing the experience of one group of persons with that of other groups.

No information was available in these data regarding the income expectations of either those who stayed in farming or those who changed to other employment. However, if it could be assumed that mobility from one sector to another is largely in response to the prospect of higher incomes the following simple model of expected actions regarding employment mobility of farm people would follow:

Income Change Expected from Mobility	Income Change Realized from Mobility	Probable Action
Gain	Gain	Change to nonfarm employment and stay there
Gain	Loss	Change to nonfarm employment and then return to farm sector
None		Stay in farm sector
Loss		Stay in farm sector

The expectations that people hold in this regard are partially a function of their experience and partially a function of observation of others. If experience was consistent with the model several things should be observable in the income experience of off-farm movers in the period observed:

1. Those who left farming and stayed in the nonfarm sector should have achieved income gains.
2. Those who left farming expecting income gains and failed to realize them should be more likely to return to farming.
3. Those groups with characteristics similar to those generally achieving little or no gain from off-farm mobility would have lower rates of mobility.

If, however, the results show that persons who left the farm sector and then returned to it experienced the same income gains as those who stayed in the nonfarm sector, then the mobility model is an inadequate explanation of the movements and non-income factors would need investigation. Or, if the experience shows that older farmers achieve as much income gain as young persons from mobility, then the decline in mobility with advancing age will have to be explained on other than an annual income basis.

To test whether observed actions were consistent with this model comparisons were made among the average income changes experienced by three different groups of off-farm movers: those who in the year following the mobility period were (a) still in the nonfarm sector, (b) had moved back to the farm sector, and (c) were without coverage from any source of employment. The prediction was that the average income gain would be greatest for group (a), and least for group (c).

One way of measuring the average income change was to add up the change in income experienced by each mover, and to divide this total by the number of movers. But because the highest income level in the data was restricted to the maximum limit on earnings reported for Social Security purposes, this measure of income changes was considered inaccurate, and possibly seriously so. Therefore, another measure of the change in income experienced by movers was also used. This consisted in determining the difference between the *median* income of movers before and after moving. The median income is also an average, but it indicates the middle of the income range of movers; i.e. it indicates the level above and below which the incomes of one half of the movers fell. Therefore, it was not affected by the lack of information on the exact income of those who earned more than the maximum creditable for Social Security purposes.

The two sets of estimates of farm-nonfarm income differences, classified by the employment coverage of movers in the year after the mobility period, are given in Table 11. In the three periods 1955-56, 1956-57, 1957-58, both measures resulted in broadly similar estimates of the income differences. Over these three periods, the average income difference indicated by the first measure was +$288 for movers who remained in the nonfarm sector, −$203 for those who returned to farm work, and −$466 for those who ceased to have any coverage. The corresponding averages of the change in median incomes were +$405, −$266 and −$485, respectively.

It seems probable that many of those off-farm movers who lost all coverage were marginal to both labor forces, since their incomes in both sectors were markedly lower than the incomes of the other two groups. Looking only at the two groups that had coverage in the years under discussion, it appears that their actions were consistent with the model. Those who achieved the expected gain in income via changing to nonfarm employment stayed there. Those who failed to increase their incomes returned to the farm sector.

TABLE 11—Income differentials of off-farm movers by type of coverage in the year following the mobility period; 1955-56, 1956-57 and 1957-58(a)

Mobility period	Persons who were farm employed in both years of the mobility period ($)	Type of coverage of movers in year following mobility period: Nonfarm sector ($)	Farm sector ($)	No coverage ($)
1955-56				
Median income in 1955	1,287	1,295	1,305	766
Median income in 1956	1,480	1,942	1,284	389
Differential of median incomes(b)	+193	+647	−21	−377
Mean income differential(c)	——	+438	−75	−333
1956-57				
Median income in 1956	1,429	1,367	1,542	935
Median income in 1957	1,468	1,766	1,205	428
Differential of median incomes(b)	+39	+399	−337	−507
Mean income differential(c)	——	+295	−228	−494
1957-58				
Median income in 1957	1,448	1,484	1,697	1,820
Median income in 1958	1,600	1,654	1,256	449
Differential of median incomes(b)	+152	+170	−441	−571
Mean income differential(c)	——	+131	−305	−571

(a) Computed from Social Security sample data.
(b) Equal to the median income of the group in the second year less its median income in the first year of the period.
(c) Equal to the simple average of the measured income differentials of the individuals in the group.

Though it appears that successful off-farm movers increased their incomes in the process, did these increases exceed the gains they might have received if they had remained in agriculture? The data in Table 11 indicate that they did. In all periods except 1957-58, during which there was a large increase in farm incomes and a marked decline in nonfarm employment opportunities, the income gains of those movers who stayed in the nonfarm sector was much greater than the gains of non-movers. At the same time, the loss in earnings sustained by movers who failed to establish themselves in the nonfarm sector emphasizes the risks inherent in off-farm movement, a principal reason for the persistence of low farm incomes.

Another closely related prediction was that differences in off-farm mobility rates are largely reflections of differences in the farm-nonfarm income gains experienced by individuals. That is, for any two groups of farm workers, the group experiencing the greater gains in income was expected to be the group with the highest mobility rate. On the whole, data on the average change in income by class of mover supported this notion, particularly if, in interpreting the results, allowance

is made for the error introduced by the maximum limit on reported earnings (see Table 12). Thus, the gains to multiple-job laborers much exceeded those to multiple-job farm operators, and the gains to off-farm mobility declined dramatically with age.

TABLE 12—The mean income differentials of off-farm movers by employment status, race and age; the nation, 1955-56, 1956-57, 1957-58 and 1958-59(a)

Mobility period:	1955-56 ($)	1956-57 ($)	1957-58 ($)	1958-59 ($)
All off-farm movers	286	110	−21	229
Farm employment status:				
single job operators	117	−73	−150	−158
multiple job operators	−49	−318	−411	−378
single job wage workers	368	364	149	414
multiple job wage workers	430	271	141	484
Race:				
non-Negro	286	106	−28	228
Negro	284	155	51	244
Age:				
under 25	540	417	231	565
25-34	350	193	53	339
35-44	232	8	−49	78
45-54	72	−18	−185	36
55 and over	−7	−339	−336	−303

(a) Based on Social Security sample data.

Since there were virtually no gains for persons over 35, it is not surprising that off-farm mobility declines sharply at that age. Allowing for the much higher earnings of non-Negroes, they probably experienced a greater increase in income than did Negroes. Even the apparent inconsistency of the relative gains to single and multiple jobholders is probably attributable to the large proportion of the latter movers whose farm sector incomes were close to, or above, the creditable maximum.[6]

More Unemployment or Lower Rates of Pay?

The data on income gains strongly support the notion that failure to attain expected gains is a major factor behind back movement into agriculture. But did backmovers earn less in the nonfarm sector because their rate of pay was less or because they were unemployed for longer periods than those who remained in the non-farm sector?

[6]See Appendix C for a more detailed discussion of the error in the estimates of income gains to mobility.

For off-farm movers who were exclusively wage workers in the nonfarm sector, it was possible to determine the number of quarters of covered employment in the nonfarm sector, and to determine the average rate of pay per quarter of employment. Average nonfarm earnings per quarter and average number of quarters of employment among such movers in the mobility period 1955-56, classified by age, are shown in Table 13.

In every age group both the number of quarters of employment and rate of pay was lower among those who returned to the farm sector in 1957. In each age group, movers who returned had about one-half of a quarter of employment less, and their earnings per quarter averaged $170 less, than those who stayed in the nonfarm sector. Thus, it appears that the reduced income of those who left farming and then returned to it was the result of both less employment and lower rates of pay.

In general, it appears that mobility from the farm sector is largely a function of the income expectations of movers and the extent to which these expectations are achieved. The fact that mobility rates for persons with various characteristics is highly consistent with the income experience of such persons suggests that farm people may have a realistic evaluation of their nonfarm employment opportunities. However, since many people change occupations and suffer substantial income losses in the process, this group would appear to have held

TABLE 13—The relation between nonfarm unemployment and rates of pay experienced by off-farm movers, and backmovement into agriculture, 1955-57(a)

Off-farm movers in the period 1955-56 who:	Age in 1957					
	under 25	25-34	35-44	45-54	over 54	all movers
(I) were still in the nonfarm sector in 1957						
number in sample	1082	962	777	623	399	3843
average quarters of covered employment in 1956	3.0	3.4	3.3	3.3	3.1	3.2
median income per quarter in 1956 ($)	488	712	667	618	507	597
(II) returned to farm sector in 1957						
number in sample	98	178	153	143	93	665
average quarters of covered employment in 1956	2.5	2.9	2.8	2.9	2.6	2.8
median income per quarter in 1956 ($)	324	519	397	465	333	424

(a) Based on Social Security sample data for those off-farm movers in the period 1955-56 who were not self-employed in 1956.

incorrect expectations regarding their nonfarm opportunities. Unless this experience is altered, it is unlikely that the mobility rates will change significantly.

Who Are the In-Farm Movers?

Movement between the farm and the nonfarm sector includes a surprisingly large number of in-farm movers. According to 1950 Census data, there were six nonfarm to farm migrants for every 10 farm to nonfarm migrants, and the data used in this study indicated that on the average in-farm movers accounted for 47 percent of the inter-sectoral movers in the period 1955-59. The main reason for this was the failure of off-farm movers to establish themselves in the nonfarm sector and their backmovement into agriculture.

An average of only 7 out of 10 off-farm movers remained in the nonfarm sector at least two years. The importance of this finding cannot be over-emphasized. It can be dramatically illustrated by pointing out that if those who moved back into agriculture after only a year in the nonfarm sector had stayed in that sector, the net off-farm mobility rate would have been nearly doubled. In other words, the gross out-movement from farming need not be increased in order to dramatically increase the net reduction in the farm labor force.

The extent of previous farm work experience among in-farm movers could not be determined precisely, since the sample data did not include information on jobs held earlier than 1955. But data on the employment in 1955 through 1957 of in-farm movers in the period 1958-59 provide strong grounds for a number of important conclusions regarding differences between those in-farm movers with and those without previous farm experience (see Table 14).

Most in-farm movers apparently did have farm work experience, particularly among those who gave up all nonfarm work and became exclusively farm employed. Measured by changes between the median income in 1958 and in 1959, there were wide differences in gains to in-farm mobility. In every farm employment status, the in-farm movers who had been in the farm sector in the period 1955-57 gained more, or lost less, than other in-farm movers.

Among the latter, those individuals who retained no nonfarm employment sustained losses which were large in relation to their previous earnings, while those who continued to hold nonfarm jobs made relatively small gains. It can be concluded, therefore, that lack of recent

TABLE 14—Characteristics of in-farm movers in the period 1958-59 by farm work experience in the years 1955 through 1957

	Employment Status in 1959			
	Single job farm operators	Multiple job farm operators	Single job farm laborers	Multiple job farm laborers
All in-farm movers				
number in sample	527	1222	594	2342
% without farm job coverage in 1955-57	21.8	36.2	26.9	37.9
Without farm coverage in 1955-57				
median age in 1959 in	43.6	44.2	42.4	36.8
median income in 1959 ($)	1148	3335	628	1846
median income in 1958 ($)	1736	3101	818	1810
change in median income ($)	−588	+234	−190	+36
With farm coverage in 1955-57				
median age	49.9	45.6	30.1	27.5
median income in 1959 ($)	1309	2333	480	1352
median income in 1958 ($)	1402	1830	363	854
change in median income ($)	−93	+503	+117	+498

Source: Estimated from the Social Security sample data.

farm employment tended to limit the gains to in-farm mobility. This would account for the low proportion of movers without recent farm experience, and for the fact that this proportion was lower among those who retained no nonfarm employment.

Those in-farm movers without farm employment in 1955 through 1957 who became multiple jobholders had substantially higher incomes than other in-farm movers, and, indeed, higher than that of other multiple job farm workers (see Tables 14 and 15). The evidence strongly suggests that many of these in-farm movers were only marginally employed in agriculture in 1959.

In contrast, those who became single jobholders in agriculture had not only lost whatever seniority they had in nonfarm jobs, but being mostly over 40 years old, they were undoubtedly less able to move back to the nonfarm sector, and were, therefore, more likely to remain in agriculture. If most in-farm movers were former off-farm movers, they could be expected to resemble off-farm movers more than the farm labor force as a whole. With minor exceptions, this notion is confirmed by the data on characteristics of movers and of the whole farm labor force shown in Table 15. Thus, the distribution of in-farm movers among farm employment categories, like that of off-farm movers, is heavily weighted toward multiple jobholders. In the farm labor force as a whole, single jobholders predominate.

TABLE 15—Comparison of characteristics of in-farm movers with off-farm movers and the farm labor force

	Average for the period 1955-59			
	Farm employment distribution (%)	Median income in farm sector ($)	Median age (years)	Percent Negro (%)
In-farm movers	100.0			
Farm operators				
single jobholders	12.0	1155	51.1	2.4
multiple jobholders	27.1	2426	46.1	1.2
Farm laborers				
single jobholders	13.9	475	35.0	17.0
multiple jobholders	47.0	1403	31.7	11.9
Off-farm movers	100.0			
Farm operators				
single jobholders	8.7	1205	47.0	2.1
multiple jobholders	23.4	2578	45.3	1.3
Farm laborers				
single jobholders	16.8	398	24.3	14.3
multiple jobholders	51.0	1310	29.5	12.0
Farm labor force	100.0			
Farm operators				
single jobholders	41.4	1406	54.0	2.2
multiple jobholders	16.4	2367	46.8	1.4
Farm laborers				
single jobholders	25.5	731	38.9	19.9
multiple jobholders	16.7	1276	32.1	13.5

Source: Estimated from the Social Security sample data.

In-farm movers did differ from off-farm movers in that a higher proportion of them were farm operators. This indicates that either farm operators were relatively less successful than farm laborers in establishing themselves in the nonfarm sector or since they had some farm assets it was relatively easy to return to farming. Similarly, the median incomes of in-farm movers approximate more closely the levels earned by off-farm movers than of the farm labor force.

With respect to age, in-farm movers are intermediate to off-farm movers and the whole farm labor force, indicating that it was the older off-farm movers who failed to settle in nonfarm employment. No consistent differences with respect to the proportion of Negroes among the three groups were apparent.

The Income Gains of In-Farm Movers

Data on the change in income experienced by those who changed to farm employment in 1959 indicated that many improved their earn-

ings on moving to the farm sector. On grounds similar to those underlying the hypothesis about the expectations of off-farm movers, it was presumed that there was a close association between the gains to in-farm mobility and the permanence of such employment changes. To test this hypothesis a procedure similar to that used in the case of off-farm movers was employed. In-farm movers were classified according to their coverage in the year following the mobility period into those without coverage, those who were back in the nonfarm sector, and those still in the farm sector; the change in median incomes was computed for each of these groups, the hypothesis being that it would be lowest for movers who lost all coverage and highest for those who continued in farm employment.

The results of this analysis, shown in Table 16, are entirely consistent with the hypothesis, with the exception of the period 1956-57, when those who subsequently returned to the nonfarm sector experienced the largest income gains. Unlike the off-farm movers, however, no group of in-farm movers in any period exhibited a loss in income (see Table 16). In part, this was the result of backmovement into agriculture in the face of low earnings in the non-farm sector. Moreover, most in-farm movers became multiple jobholders and probably many of these were only marginally farm employed, so that the improvement in their incomes derived from nonfarm jobs.

TABLE 16—Income changes experienced by in-farm movers by type of coverage in the year following the mobility period; 1955-56, 1956-57 and 1957-58

Mobility period	Type of coverage of in-farm movers in year following mobility period: No coverage ($)	Farm sector ($)	Nonfarm sector ($)
1955-56			
median income in 1956	815	1595	1604
median income in 1955	733	1012	1210
change in median income	+82	+583	+394
1956-57			
median income in 1957	710	1444	1673
median income in 1956	647	1340	1460
change in median income	+63	+104	+213
1957-58			
median income in 1958	751	1470	1551
median income in 1957	750	1234	1403
change in median income	+1	+236	+148

Source: Estimated from the Sociay Security sample data.

Consistent with this reasoning, among in-farm movers in the period 1956-57 who subsequently returned to the nonfarm sector, the multiple jobholders had an average gain in income of $238, while the single jobholders averaged a loss of $147. It is concluded, therefore, that in-farm mobility is as much motivated by the expectation of higher earnings as is off-farm mobility.

The Impact of Recession

Three major explanations have been put forward to account for the rate of decline in the farm labor force being insufficient to improve relative incomes in agriculture. Two of these are not supported by the results of this study: the estimated off-farm mobility rates are too high for job information to be considered an important mobility impediment, and similarities between farm operators and laborers in off-farm mobility rates did not indicate that fixed assets reduced off-farm mobility. But, the notion that nonfarm unemployment has hindered adjustment in the size of the farm labor force was strongly supported.

On the average, unemployment rates have been lower in the post-war than for the pre-war period. However, the impact of a given rate of unemployment on mobility out of agriculture has increased. In a labor market characterized by a declining demand for unskilled and semi-skilled labor, and in which the least skilled often are the first to be laid off, it is becoming increasingly difficult for farm workers to obtain nonfarm jobs; and the job security of those who do change to nonfarm employment is often slight.

Traditionally, off-farm movers have contributed significantly to the supply of labor for urban industrial growth. This situation has been changing. Higher birth rates in urban areas in the 1940's and 1950's have increased and will continue to augment the supply of labor for nonfarm employment. Those individuals seeking nonfarm jobs who have an urban background, may be favored over those who have a farm background, both by formal education and by skills acquired in nonfarm employment.

Another factor is that because of trade union contracts, minimum wage laws, and avoidance of outright competition for labor between firms, employers probably tend to adjust hiring and firing standards more readily than wage rates. Higher hiring standards under poor business conditions would clearly disadvantage the job-seeking off-farm mover more than his urban reared and trained counterpart.

The Effect on Overall Mobility Rates

Since unemployment rates could not be measured directly from the sample data, the effect of nonfarm unemployment was measured mainly by comparing estimates for the period 1957-58, which coincided with a recession, with estimates for other periods. The overall change in mobility into and out of agriculture by years is shown in Table 17. Off-farm mobility rates after reaching a peak in the 1956-57 period, were substantially depressed in the recession period. In-farm mobility rates moved in exactly the opposite pattern, with the result that there was a net increase in the workers in agriculture in the recession period; that is the size of the farm labor force was found to *increase* between 1957 and 1958.

Two series of inter-sectoral mobility rates are shown in Table 17. One series is based on all persons in the Social Security sample, the other, which excludes those who either entered, withdrew or were intermittently in the labor force during the years 1955 to 1959, is based on persons with continuous coverage.

Three major contrasts between these series are apparent. First, both the farm to nonfarm and the nonfarm to farm rates were consistently higher for persons covered in all years. It seems probable that this difference resulted from a lower mobility rate for persons who were intermittently employed. This rationalization is consistent with the second main difference, namely that the off-farm rate was increased more than the in-farm rate by basing the estimates on per-

TABLE 17—A comparison of mobility rates and nonfarm unemployment rates, 1955-59(a)

	Mobility period			
	1955-56	1956-57	1957-58	1958-59
Based on all persons in Social Security sample				
off-farm rate	14.6	15.6	12.5	13.8
in-farm rate	13.3	10.7	14.3	11.7
Based on persons in sample with coverage in all years 1955-59				
off-farm rate	17.5	18.1	13.3	14.0
in-farm rate	14.8	11.8	15.0	12.2
Unemployment rate in nonfarm labor force(a)	4.2	4.3	6.3	5.5

(a) The unemployment rates refer to the second year of each period. Computed from employment statistics published in *The Economic Report of the President*, January, 1963.

sons with continuous coverage. In other words, individuals who were employed in all years had better access to the nonfarm labor market. The third difference is that the off-farm mobility rates of these individuals were much more responsive to changes in nonfarm employment conditions. It would appear that those who were continuously employed were better informed about conditions in the nonfarm labor market, as well as having better access to it.

The recession not only affected the rates of off-farm and in-farm movement, it also had repercussions on the permanence of intersectoral employment changes. Among off-farm movers, the proportion remaining at least two years in the nonfarm sector declined from 74.5 to 68.9 percent during the recession; and among in-farm movers, the proportion remaining at least two years in agriculture rose from 48.7 to 53.7 percent.

How Different Groups of Farm Workers Were Affected

Data presented earlier provide evidence of the effect of the recession on off-farm mobility rates of different groups of farm workers. Comparison of differences in off-farm mobility rates in the recession period 1957-58 which differences in other years provides a measure of the extent to which the off-farm movement of one group declined relative to that of another during the recession. Thus, among farm laborers, the mobility rate of multiple jobholders declined more than that of single jobholders, and among farm operators the difference between the rates of multiple and single jobholders was less than in the preceding period of particularly heavy off-farm movement (Table 2).

Again, this observation is in agreement with the idea that multiple jobholding is a stage in the process of off-farm mobility; on this basis, one would expect multiple jobholders to be better informed about nonfarm employment conditions, and to adjust more readily to changes in the nonfarm demand for labor.

It is not clear that the recession had any effect on the mobility of farm laborers relative to farm operators (Table 3).

The impact of the recession on the mobility of different age groups is more obvious (Table 4). The difference in off-farm mobility rate between the youngest and the oldest age groups was significantly lower in 1957-58 than in any other period. Since there was no indication that the off-farm movement of the oldest group increased during

the recession, it follows that the mobility rate of persons under 25 was substantially reduced in this period. This is not surprising. Young persons could most easily afford to postpone changing their employment, and, having little nonfarm job experience, they would normally apply for the least skilled jobs in which unemployment rates are highest. Consistent with this argument, the reduction in the off-farm mobility rate under 25 year olds was greatest relative to 1956-57, a period of particularly heavy off-farm movement.

Contrary to what would be expected on the presumption that Negroes move to less skilled nonfarm jobs than non-Negroes, the off-farm mobility rate of Negroes seems to have declined less during the recession, so that there was little difference between the rates of Negroes and non-Negroes (Table 5). However, this apparent effect resulted from the fact that the recession was more severe in those areas where Negroes were not an important part of the farm labor force. In the South Atlantic and East South Central region, where 62 percent of Negro farm laborers were employed in 1957, significantly greater off-farm mobility rates were found among non-Negroes.

Regional Variation in the Impact of the Recession

To examine regional differences in the impact of the recession on inter-sectoral mobility, mobility rates by farm employment status and by region, for the periods 1957-58 and 1958-59, are given in Tables 18 and 19. These data indicate that differences in the in-farm rates among

TABLE 18—Regional mobility rates by employment status, 1957-58(a)

Farm employment status	North East	East North Central	West North Central	South Atlantic and East South Central	West South Central and Mountain	Pacific	Conterminous U.S.
				— off-farm mobility rates —			
Single job operator	2.1	2.2	1.7	2.2	2.4	3.7	2.1
Multiple job operator	20.1	20.3	17.7	19.2	18.3	22.6	19.2
Single job laborer	8.7	7.5	8.4	5.9	6.9	6.4	7.0
Multiple job laborer	42.9	42.9	42.0	39.5	40.4	38.5	40.6
All employment categories	16.2	10.8	8.8	11.3	13.9	18.2	12.4
				— in-farm mobility rates —			
Single job operator	3.8	3.2	3.3	6.0	6.0	3.9	4.2
Multiple job operator	17.8	20.2	19.1	29.0	23.1	19.1	22.2
Single job laborer	6.9	7.9	9.9	7.7	8.0	7.6	7.9
Multiple job laborer	43.1	55.3	52.5	46.2	47.2	36.2	45.1
All employment categories	15.8	12.6	10.9	16.0	18.0	17.6	14.8

(a) Based on Social Security sample data for those individuals employed in the conterminous U.S. whose state of employment was reported.

TABLE 19—Regional mobility rates by employment status, 1958-59(a)

Farm employment status	North East	East North Central	West North Central	South Atlantic and East South Central	West South Central and Mountain	Pacific	Conterminous U.S.
			— off-farm mobility rates —				
Single job operator	2.7	2.6	2.1	2.8	3.0	2.8	2.5
Multiple job operator	16.9	21.0	18.7	20.4	19.0	18.4	19.4
Single job laborer	10.3	10.9	12.1	7.1	7.1	9.2	8.8
Multiple job laborer	47.1	53.1	46.8	39.8	43.7	43.4	45.0
All employment categories	17.8	13.0	9.9	12.3	14.6	19.7	13.6
			— in-farm mobility rates —				
Single job operator	3.1	3.4	2.3	4.4	4.0	5.5	2.5
Multiple job operator	21.6	19.3	16.1	23.7	20.0	21.9	19.9
Single job laborer	7.7	6.0	7.0	5.4	6.4	4.6	5.9
Multiple job laborer	35.6	41.8	40.2	43.4	41.1	36.8	39.7
All employment categories	15.1	11.2	8.5	13.6	14.4	16.4	12.6

(a) Based on Social Security sample data for those individuals employed in the conterminous U.S. whose state of employment was reported.

employment categories tended to be proportional to the differences in the off-farm rates in all regions and in both periods. Indeed, this is what would be predicted under the hypothesis that the in-farm movement largely comprises backmovement into agriculture. In general, the effect of the recession was a net inflow of movers in all employment categories in 1957-58, while in the recovery period 1958-59 only the farm operator categories indicated a net inflow. But there were several exceptions to this generalization.

In 1957-58, there was a net increase of multiple job farm operators in the West North Central region and particularly in the southern regions, but not elsewhere. In the southern regions the rate of in-farm movement for all farm operators was exceptionally high. In the North East, there was a net out-flow of single-job laborers in both periods, and the net movement of multiple-job laborers varied widely among the six regions. As a result of these regional differences, there was considerable variation in the net change in the size of the farm labor force, attributable to inter-sectional mobility.

The southern regions experienced a net inflow of 4 to 5 percent in 1957-58; the North Central regions had a net inflow of only 2 percent, and the North East and Pacific regions actually had a net outflow of close to 1 percent. The southern regions apparently continued to suffer from the effects of the recession in 1958-59, since the South Atlantic and East South Central region had a net inflow of movers,

and the West South Central and Mountain region had about as many in-farm movers as off-farm movers.

It is paradoxical that in the South, where the local unemployment rose least as a result of the recession, that the recession appeared to have the largest impact on inter-sectoral mobility. As already noted, this was due to the very high in-farm mobility rates of farm operators in the South, so that solution of the paradox requires an explanation for these rates being so high.

One explanation might be that these individuals or their families maintain rural residences despite their movement to nonfarm jobs. In periods in which they experience unemployment in their nonfarm work, they apparently return to these residences and engage in enough farming to qualify for Social Security coverage on their farm earnings. Thus, the repeated stories about the backmovement into rural areas of the South in periods of high unemployment in northern cities may have some basis in fact.

These regional data suggest more than anything else that unemployment is not a local problem, because it has impacts upon other areas. It appears that the main effect of the national unemployment was to move people back into farming in the very areas where the need for a reduction in the farm work force is greatest.

The Prospects for Farm Labor Mobility

Productive capacity in United States agriculture should continue to grow more rapidly than the domestic demand for farm products. Though in general farm prices have tended to decline in recent years, price supports have served to remove a substantial part of the uncertainty in farm investment; rising labor costs have encouraged substitution of purchased capital inputs for labor; and new technology has been made available to farmers, often for little additional cost. The high dietary standards attained by Americans today narrowly limit the possible increase in per capita farm product requirements. So expansion in the domestic demand for food is almost solely dependent on population growth.

There is no reason to expect changes in these trends. Much less certain is the possible growth of export demand for farm products. However, it is unlikely that future growth of farm product exports will be large enough to compensate for the slow growth of domestic demand.

Thus, the forces which have led to a decline in the size of the farm labor force appear unlikely to change significantly over the next decade. Whether the net movement out of agriculture will be rapid enough to raise the earnings of farm workers will depend, at least in the short run, on nonfarm employment opportunities for farm workers. Development of such opportunities will depend largely on policies implemented by federal and state governments. Both policies designed to promote overall growth and employment in the ecenomy, and major retraining programs appear necessary to this end.

To the extent that the growth rate of the economy is stimulated, the accelerated growth in the national demand for labor will increase general employment opportunities. But the improvement in job opportunities is not distributed equally, and for some occupations there is an actual decline in demand. If individuals in these occupations are to share in the growth of the economy, it will be necessary to relocate many to other employment. And, since even in a tight labor market, private enterprise in many cases will find the cost of retraining too high or the return too uncertain, government retraining programs appear essential.

Assimilation of off-farm movers into the nonfarm labor force would be facilitated further by providing for retraining of farm workers as well as for the unemployed, since those off-farm movers who fail to establish themselves in nonfarm jobs tend to move back into agriculture.

Many farm leaders and politicians have asserted that the net rate of reduction in the farm labor force cannot be increased without substantially increasing the social and economic disruptions in rural communities. It is not necessary to increase the gross outmovement from farming in order to increase the net reduction in the farm labor force. Apparently many more people attempt to leave the farm labor force than are successful. These experiences of reduced income in nonfarm jobs as a result of low pay and unemployment must be highly unsettling to the individuals experiencing it. Economic policies which helped reduce such experiences would increase the rate of outmovement from the farm labor force and add to individual well-being.

In the long run, the decline in the size of the farm labor force will depend on the incentives to retirement and the occupational choice open to farm youth. This choice will be broader when the formal

education achieved by farm youth approaches the level prevailing in urban areas. Conversely, to the extent that the children of farm workers are educated less adequately than the children of other workers, the income problem in agriculture will tend to be perpetuated.

Appendix A: The Social Security Sample Data

The United States Social Security Administration has maintained a continuous register sample of Social Security records, corresponding to 1 percent of all Social Security account numbers issued, and known as the Continuous Work History sample. The sample used in this study comprised all individuals in the CWH sample who has Social Security coverage from agricultural employment in any of the years 1955 through 1959.

Because the sample was collected on a continuous register basis, individuals, once included through Social Security coverage from agricultural employment in a given year, were included in all subsequent years, whatever their employment status. While for many items of income and employment the data were retroactive to years in which an individual had not been included in the sample, there were other items which were not addition, certain income and employment information was not available for any of the sample records for the year 1956, and some of the data for 1955 were considered to be of doubtful reliability. Details of the data items used in this study, together with some comments on their use, are provided below.

Employment Data

Four types of employment coverage were recognized in the sample data: self-employment in agriculture and in non-agriculture, wage or salary employment in agriculture and in non-agriculture. For any one year a record could have any one of sixteen combinations of these types of employment, including "no covered employment." The latter category included individuals who were not yet in the labor force, those who did not meet the minimum income requirements for participation, those who were working in non-covered jobs or were unemployed and also those who were retired, disabled or dead. Consequently, identification of entrants and retirements required additional information. Data on the first year employed, the year of entitlement or death, and age were used along with the "no coverage" record to estimate average entrance and retirement rates.[7]

Income Data

The income measure used in this study was total earnings from covered employment. While the minimum income requirements for participation in the program did not seriously affect the income data, the maximum limits on income creditable for Social Security purposes did restrict the usefulness of the data.[8] This maximum was 4,200 from 1955 through 1958,

[7]For details, see Brian B. Perkins, "Labor Mobility Between the Farm and Non-farm Sector," unpublished Ph.D. thesis, Michigan State University, 1964.

[8]This point is discussed in full in Appendix C.

and $4,800 in 1959. However, few individuals attained the maximum creditable earnings, particularly among the farm employed. Of the latter, 11 percent had incomes of $4,200 or more in 1958, and for other years the proportion was lower.

The Demographic Data

Included were year of birth, sex and a Negro/non-Negro classification as a measure of race. For .04 percent of the sample the year of birth was unknown.

Location and Industry Data

For each wage job, and for the individual's primary self-employment job, codes were available which identified the state, the county, and the industry employment in each of the years 1957 through 1959. Information on the nonfarm self-employment industry was judged too incomplete to be included in the analysis. The regional classifications were based on the location of the individual's farm employment.

Quarters of Coverage

For individuals whose only source of coverage was nonfarm wage employment, information on the number of quarters of coverage was available, and provided a measure of unemployment. Individuals with other covered employment were of necessity identified as having four quarters of coverage, since such employment was reported on an annual basis.

Appendix B: The Estimates of Differences in Off-Farm Mobility Rates

The estimates of differences in off-farm mobility rates, used to test hypotheses concerning the selectivity of the mobility process, were derived from regression equations of off-farm mobility rates on age, race, employment status and income. The mobility rate observations were obtained by determining the proportion of off-farm movers corresponding to each combination of classes of these attributes in the farm labor force of the first year of each period. The number of individuals exhibiting certain combinations of characteristics was extremely small, and the choice of independent variables was conditioned by the need to avoid inaccuracies resulting from such under-representation.

Two equations were fitted: the first, to data on all farm employed persons, the second, to data on farm wage workers only. These equations are specified below and the results of the regressions are shown in Tables B.1 and B.2. It will be noted that the independent variables are entered as sets of "dummy" variables; each "dummy" corresponding to a particular value of the independent variable. Since the categories in each set are exhaustive and mutually exclusive, it was necessary to omit one dummy variable in each set to avoid singularity in the moment matrix. Therefore, the estimated regression coefficients do not measure the mobility rate of the categories to which they correspond, but rather the *difference* between the mobility rate of the given category and the rate of the omitted category in the same set.

The constant term is an estimate of the mobility rate of the group defined by all the omitted variables in the equation. For example, in equation (i) the constant term is the estimated mobility rate of single job farm operators who were over 54 years old and had incomes of less than $500. To obtain the estimated mobility rate of groups defined by any other combination of attributes, the coefficients of the relevant variables should be added to the constant term.

All the Farm Employed

$$(i)\quad Y = C + \sum_{i=1} a_i Z_i + \sum_{j=1} a_j Z_j + \sum_{k=1} a_k Z_k + u$$

where,

Z_i = 1, if the observation is in the *ith* employment category, 0 otherwise. Categories: multiple job farm operators, single job farm wage workers, multiple job farm wage workers. Variable omitted: single job farm operators.

Z_j = 1, if the observation is in the *jth* age class, 0 otherwise. Classes: under 25, 25 to 34, 35 to 44, 45 to 54. Variable omitted: 55 and over.

Z_k = 1, if the observation is in the k*th* income class, 0 otherwise. Classes: \$500 to 890, 900 to 1190, 1200 to 1490, 1500 to 1990, 2000 to 2490, 2500 to 2990, 3000 to 3900, 4000 and over. Variable omitted: under \$500.

Y = the off-farm mobility rate of groups defined by combinations of the employment, age, and income variables, expressed as a percentage.

u = a random error term.

Farm Wage Workers

$$\text{(ii)}\quad Y = C + a_l Z_l + a_m Z_m + \sum_{j=1}^{5} a_j Z_j + \sum_{k=1}^{4} a_k Z_k + u$$

where,

Z_l = 1, if the observation is of multiple job farm wage workers, 0 otherwise. Variable omitted: single job farm wage workers.

Z_m = 1, if the observation is of Negroes, 0 otherwise. Variable omitted: non-Negroes.

Z_j = 1, if the observation is in the j*th* age class, 0 otherwise. Classes: under 20, 20 to 24, 25 to 34, 35 to 44, 45 to 54. Variable omitted: 55 and over.

Z_k = 1, if the observation is in the k*th* income class, 0 otherwise. Classes: \$500 to 890, 900 to 1190, 1200 to 1990, 2000 and over. Variable omitted: under \$500.

Y = the off-farm mobility rate of farm wage worker groups defined by combinations of the employment, race, age, and income variables, expressed as a percentage.

TABLE B.1—The results of equation (i) determinants of off-farm mobility rates among all the farm employed, 1955-56, 1956-57, 1957-58 and 1958-59(a)

	1955-56	1956-57	1957-58	1958-59
Coefficient of multiple determination	.889	.882	.897	.908
Standard error of estimate	5.80	6.47	5.34	5.30
Independent variable	Partial regression coefficient (standard error of coefficient)			
(Constant term)	–2.3 (1.7)	2.0 (1.9)	0.3 (1.6)	–0.5 (1.6)
Farm employment status:				
multiple job operator	15.9°°(1.2)	20.1°°(1.4)	16.3°°(1.1)	15.7°°(1.1)
single job wage worker	2.2°	0.8	1.5	1.4
multiple job wage worker	38.4°°	38.9°°	36.6°°	38.4°°
Age:				
under 25	10.1°°(1.4)	15.4°°(1.5)	7.4°°(1.3)	10.5°°(1.3)
25 to 34	7.2°°	7.0°°	3.9°°	5.2°°
35 to 44	4.7°°	2.7°	0.5	3.3°°
45 to 54	3.7°°	2.1	0.1	1.9
Income:				
$500 - 890	1.5 (1.8)	–0.1 (2.1)	0.9 (1.7)	1.6 (1.7)
900 - 1190	0.8	–1.5	–1.5	1.9
1200 - 1490	2.4	–2.4	0.9	–0.0
1500 - 1990	0.1	–2.0	0.6	–0.9
2000 - 2490	0.9	–1.6	0.7	–0.0
2500 - 2990	1.0	–0.8	0.7	–1.9
3000 - 3990	2.5	–1.5	0.8	1.3
4000 or over	3.5°	–1.2	3.0°	0.5

(a) Estimated from Social Security sample data. All equations based on 180 observations.
°Significant at the .05 level, by a one-tailed t test.
°°Significant at the .01 level, by a one-tailed t test.

TABLE B.2—The results of equation (ii): determinants of off-farm mobility rates among farm wage workers, the nation, 1955-56, 1956-57, 1957-58 and 1958-59(a)

	1955-56	1956-57	1957-58	1958-59
Coefficient of multiple determination	.858	.834	.819	.861
Standard error of estimate	7.25	9.02	8.75	7.77
Independent variable	Partial regression coefficient (standard error of coefficient)			
(Constant term)	3.8 (2.3)	5.8° (2.9)	0.7 (2.8)	0.4 (2.5)
Farm employment status:				
multiple job wage worker	32.5°°(1.3)	35.8°°(1.7)	33.3°°(1.6)	33.3°°(1.4)
Race:				
Negro	–2.5° (1.3)	–2.7 (1.7)	–0.7 (1.6)	–6.1°°(1.4)
Age:				
under 20	12.5°°(2.3)	12.9°°(2.9)	14.4°°(2.8)	22.1°°(2.5)
20 to 24	8.8°°	15.5°°	7.5°°	13.2°°
25 to 34	6.5°°	4.9°	4.3	8.4°°
35 to 44	4.7°	2.4	–0.9	7.2°°
45 to 54	0.3	–2.3	–0.7	4.7°
Income:				
$500 - 890	2.1 (2.1)	–2.7 (2.6)	–0.6 (2.5)	0.3 (2.2)
900 - 1190	–0.1	–1.4	0.7	1.3
1200 - 1990	0.6	0.9	2.3	3.2
2000 or over	0.8	–0.6	4.9°	–0.5

(a) All equations based on 120 observations.
See also footnotes Table B.1.

Appendix C: The Error in the Estimates of Average Change in Income Experienced by Off-Farm Movers

Two methods were used to measure the average income change associated with off-farm mobility. One of these involved averaging the gains and losses experienced by individual off-farm movers. (See Table 12 for the results discussed in this appendix.) In interpreting the results of this method, allowance should be made for the error introduced by the maximum limit on reported earnings. Briefly, the effect of this limit was to restrict the maximum observable gain in the income of movers to the difference between their farm sector income and the level of the creditable maximum. Thus, the higher the proportion of movers with high income levels in the farm sector, the lower the measured income gain tended to be. The corollary was that losses in earnings of movers who were initially above the creditable maximum were understimated, but this problem was, in practice, less important than the first.

Some indication of the probable size of the error among different groups of off-farm movers is provided by a comparison of the percentage of movers with farm sector earnings of $4,000 or over. Differences between the income gains of farm operators and farm laborers appeared too large to be due to error (see Table 12). However, multiple job operators may have actually had gains larger than those of single job operators, since on the average 25 percent of the former had farm sector earnings of $4,000 or more, while only 10 percent of the single job operators were in this class. The corresponding averages for single and multiple job laborers were 1 percent and 6 percent, respectively, so that the gains of multiple over single job laborers were probably underestimated.

In the case of race, it would appear that the income gains of non-Negroes over Negroes were actually much greater, since over 11 percent of the non-Negroes and only 1 percent of the Negroes had farm sector earnings of $4,000 or more.

In contrast, no reversal in the relative size of income gains by coverage following the mobility period is indicated. The percentages with initial earnings of $4,000 or more corresponding to those who remained in the nonfarm sector, those who returned to farm employment, and those who lost all coverage, were 10 percent, 12 percent, and 5 percent, respectively.

Finally, the marked decline in income gains with age do not appear to result from error. Only among the under 25 year olds did the proportion of persons in the $4,000 or over class differ much from other groups, being close to 1 percent, as opposed to an average of 13 to 15 percent among the other age groups.