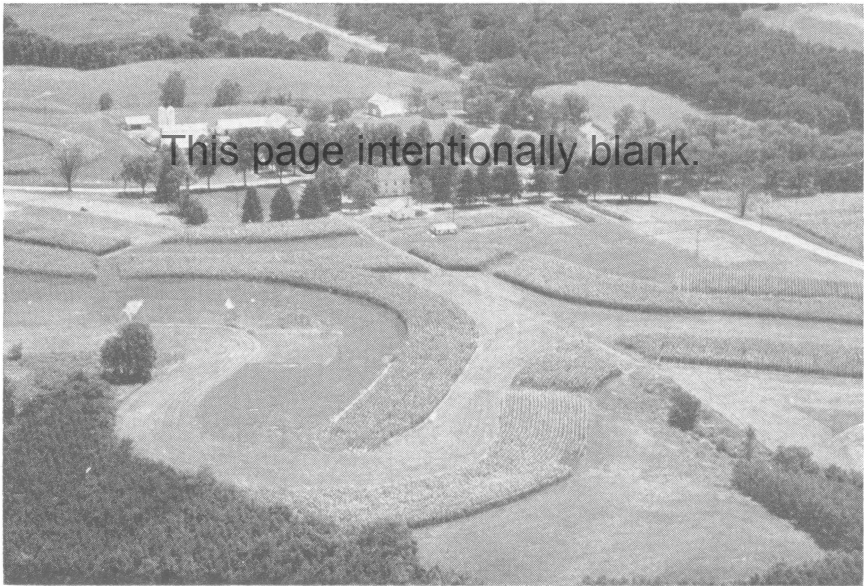


Adjusting the Commercial Family Farm to Part-time Operation in Southeastern Ohio

WILLIAM A. WAYT and THOMAS J. DIX



OHIO AGRICULTURAL
EXPERIMENT STATION

Wooster, Ohio

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ADJUSTING THE COMMERCIAL FAMILY FARM TO PART-TIME OPERATION, SOUTHEASTERN OHIO

WILLIAM A. WAYT and THOMAS J. DIX¹

Farm people in southeastern Ohio have been concerned about family income from farming. In recent years, levels of farm income in this area have been considerably below those of farmers in other areas of the state.

The amount and quality of physical agricultural resources used in conjunction with the numbers of farm people are such as to result in low productivity of the human resource used in agriculture. One apparent solution would be a shift of part of the human resource out of agriculture into employment in other lines of work.

The pain of breaking community ties and leaving neighbors and institutions associated with rural living has apparently limited the movement of people out of agriculture. This has occurred even where economic incentives for moving were present in the form of higher paying employment opportunities.

Part-time farming results when farmers combine some farming with nonfarm employment. This combination permits farm families to shift part of their labor to more rewarding employment while retaining the community associations they treasure.

Industrialization in or near rural areas of Ohio, together with good roads and rapid automobile transportation, has encouraged the growth of part-time farming throughout the state. Mechanization of agriculture and new production methods have increased the size of farm needed to provide productive full-time employment for the farm family. Similarly, these forces have increased the size of unit that can be operated as a "part-time" farm. In this study, farm operators were considered to be part-time farmers if they spent at least 100 days per year at off-farm work.

¹William A. Wayt is an Assistant Professor, Ohio Agricultural Experiment Station; Thomas J. Dix, Graduate Assistant in Agricultural Economics at The Ohio State University.

In 1930, according to the agricultural census, about 14 percent of the operators of Ohio farms reported they also worked off the farm 100 days or more. By 1945, this proportion had increased to nearly 27 percent. In 1954, about 37 percent of Ohio farmers worked off the farm 100 days or more.

Other studies of part-time farming in Ohio² have indicated its growth to stem from two important sources: (1) former urban residents, seeking the amenities of rural living, moving to small farms and (2) former full-time farmers adding a nonfarm job to their family farming activities. One earlier study dealt with those families who were using part-time farming as a method or process of acquiring command of resources to become full-time farmers.³

Purpose of Study

This study was undertaken to determine the adjustments made by former full-time farmers who are now operating as part-time farmers in southeastern Ohio.⁴ More specifically: (1) What adjustments have been made in the amount of land farmed as part-time operators compared to when they were full-time farmers? (2) How has the intensity of land use changed? (3) Have adjustments resulted in a change in the efficiency of resource use? (4) How does the family income now compare with that in their former situation and with other alternatives? (5) What problems have they experienced in making their adjustment?

Description of the Area

The farmers interviewed for this study were residents of six contiguous counties in the hill land area of southeastern Ohio. These six counties, Athens, Gallia, Hocking, Jackson, Meigs and Vinton, are located in the unglaciated area of Ohio. Geographically, this area is a part of the foothills of the Appalachian Mountain region.

The topography of the area places severe limitations on the practice of commercial agriculture based on intertilled crops. Steep slopes on the hills, relatively narrow stream valleys, and generally erodible soils contribute to form farm units composed of relatively small fields. The

²W. A. Wayt, H. R. Moore and C. H. Hillman, "Some Economic and Social Aspects of Part-Time Farming in Ohio," Research Bulletin No. 837, Ohio Agricultural Experiment Station, Wooster, Ohio.

³H. R. Moore and W. A. Wayt, "The Part-Time Route to Full-Time Farming," Research Bulletin 793, Ohio Agricultural Experiment Station, Wooster, Ohio.

⁴W. A. Wayt, "Adjusting the Commercial Family Farm to Part-Time Operation, Eastern Corn Belt Area," Research Circular 98, Ohio Agricultural Experiment Station. This is a companion study to this publication.

acid soils, derived from sandstone and shales, generally require relatively high levels of fertilizer and lime applications to produce desirable crop yields.

The farms in this area are predominately owner-operated. In 1954, the average size of farm, according to the agricultural census, was about 115 acres. About half of all farms in this area were less than 100 acres in size; two-thirds contained less than 140 acres.

Although the size of farms of this area compare favorably with those in the remainder of the state in total acreage, they do not have suitable cropland in sufficient quantity and quality to provide adequate incomes from agriculture for the number of people on the farms. Only about 40 percent of the land in farms is devoted to the production of field crops and hay. Much of the total farm acreage is in forest or permanent pasture.

Only about 8 percent of all farms and less than 20 percent of all the commercial farms in this area reported gross sales of farm products amounting to \$5000 or more in 1954. Operators of many of the farms have sought nonfarm employment to augment family incomes from agriculture.

Nonfarm employment opportunities have been expanding in the area. Between 1939 and 1954, the number of industrial establishments in the six-county area increased about 80 percent and the number of wage earners employed by industry doubled.⁵ Nonfarm jobs are also available in retail establishments, service trades, etc. The expected wages from nonfarm work, while generally higher than earnings in agriculture, are less than in other areas of the state. In 1954, average earnings in industrial employment and retail trades of employees in this area were only about 75-80 percent of the levels reported for the state as a whole.

In 1940, about 30 percent of the farm operators in this area reported working off the farm 100 days or more; by 1954, the proportion had increased to 43 percent.

These six counties were selected to represent a region of relatively poor opportunities for expanding incomes from agriculture alone but one in which there exists some opportunities for nonfarm employment within commuting distance of the farm.

Method of Study

Within the sample area, a list was compiled of all farmers now farming part time who had previously been full-time farmers. Agricul-

⁵This rate of increase in employment was slightly less than for the state as a whole, 112 percent, during the same period.

tural Extension Service personnel, soil conservation specialists, vocational agricultural teachers, members of local Agricultural Stabilization Committees, and other farm leaders contributed the names and approximate locations of farmers to be interviewed.

Interviewers attempted to complete a farm schedule for each farmer on the before mentioned list who: (1) was currently operating as a part-time farmer, working off the farm 100 days or more, from the same location (farmstead) at which he had been a full-time farmer, (2) had completed at least one year as a part-time farmer and (3) had sufficient records or recall to provide an accurate description of his farm operation the last year he operated as a full-time farmer.

Within the limitations set forth, usable interview schedules were obtained from 64 farmers in the area. These farmers were interviewed in 1958, so the data concerning the part-time farm operation were for the calendar year 1957.

In the process of analysis, division of the cases into two groups by random selection and applying tests of significance to the split-halves, as well as to the total group, indicated the smaller number of cases gave measures of reliability substantially the same as for the total group.⁶

Why Farm Part Time?

The major reasons these former full-time farmers gave for shifting to part-time operation were associated with low income from farming (see Table 1). About three-fourths of the operators mentioned this in one way or another. Frequently the general income dissatisfaction was associated with more specific problems or wants.

In over one-fourth of the cases, the operators were concerned about debt. The indebtedness may have been incurred in original purchase of the farm, purchase of additional land, making farm or home improvements, purchase of machinery, equipment, etc. In other cases, it was associated with losses on major livestock enterprises due to disease or drastic price changes.

⁶Tests of significance were applied to the means of the distributions of full-time and part-time farming operations as paired cases according to the formulation:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{S_{md}} = \frac{(\bar{X}_1 - \bar{X}_2) \sqrt{n(n-1)}}{\sum (x_1 - x_2)^2}$$

Where \bar{X}_1 is the mean of the full-time farm distribution, \bar{X}_2 is the mean of the part-time farm distribution, x represents individual deviation observations, and S_{md} is an estimate of the standard deviation of the mean difference.

TABLE 1.—Stated Reasons for Shifting to Part-Time Farming, in Order of Frequency, 64 Southeastern Ohio Farmers, 1958

Reason stated	Rank of reason	Number stating reason	Percent of farmers stating	Percent of total reasons
Low farm income	1	50	78	42
Pay debts	2	18	28	15
Good job opportunity	3	12	19	10
Desire for higher level of living	3	12	19	10
Make farm or home improvements	3	12	19	10
Increase in family labor supply } Time not fully utilized on farm }	4	6	9	5
Health	4	6	9	5
Others*	--	4	6	3

*Others: Children's educational needs, purchase of livestock or equipment, need for savings for future, security and stability of nonfarm income.

Some operators, not specifically mentioning debts, were concerned about similar problems for which the others had gone into debt. They also wanted to make improvements on the farm or in the home, or to purchase better farm equipment. Some referred to the need for additional income to meet major medical costs or expenses associated with providing college education for their children.

Some of these operators, looking more toward future income needs, saw limited opportunities for expanding the farm operation. They spoke of the low productivity of land available to rent or problems of purchase of additional land suitably situated.

Since operators frequently gave more than one reason associated with the choice to farm part time, the total reasons given considerably exceeded the number of farmers interviewed.

About three-fourths of these operators had a dairy herd in their full-time farm organization; the average size of herd was 14 cows. Some of these farmers, producing milk for manufacturing, spoke of the need to make extensive improvements to qualify for the grade "A" market; others, small grade A producers, emphasized the problems of increasing herd size.

The dissatisfaction with their full-time farm income was expressed in different ways. Whereas some compared their income to that apparent for neighbors who had previously found nonfarm employment, others compared their shrinking net income with that they had experi-

enced during and following World War II. Between 1951 and 1956, prices of Ohio farm products had declined about 25 percent, while costs of farm operation and family living expenses increased.

Only a few of the farmers interviewed reported having previous experience with nonfarm work before they began on their present jobs. Most of those who had such experience had acquired it in the years before they began to operate their own farms.

Nearly all of the farmers interviewed indicated they preferred to farm full time; however, they also expressed a preference for the income level associated with nonfarm work. Although some indicated they had initially considered the nonfarm work as temporary, most planned to continue to farm part time in the foreseeable future. Part-time farming thus appeared to them as the most acceptable alternative to achieve the income required for family goals and the personal satisfactions associated with farm living.

Age of Operator and Household Composition

When interviewed in 1958, the average age (mean and median) of the operators in the sample was 44 years. The age of individual operators covered a range from 26 to 67 years.

At the time of interview, these operators had been farming part time an average of five years. Some had completed only one year of part-time farm operation, while one had farmed part time for almost 20 years. Typically, the last year of full-time farm operation for these farmers was 1953.

As would be expected, years of operation on the present farm generally increased with increased age of the operator (see Table 2). There is, however, no such correlation between age and the shift to non-

TABLE 2.—Years of Operation as Full-Time and Part-Time Farmers on Present Farm, by Age of Operator, 64 Southeastern Ohio Farmers, 1958

Age	Number in group	Average years operating this farm		
		Full-time	Part-time	Total
Less than 35 years	11	4.3	4.0	8.3
35-39	9	5.3	5.2	10.5
40-44	14	8.4	5.6	14.0
45-49	14	12.9	4.1	17.0
50 and over	16	11.8	4.4	16.2
All ages	64	9.1	4.7	13.8

farm employment. Education, health, and the availability of job opportunities place the younger men in relatively more favorable positions than older operators to find nonfarm work.

The average age of these operators when they began to work off the farm was 39 years. Three-fourths of the men interviewed were less than 45 years of age when they began to farm part time. One extreme case, a self-employed salesman, was 61 years of age when he started nonfarm work.

The average farm household in the sample was composed of four or five persons. Many of the families had children at home who could and did help with the farm work. Typically, the household was composed of the operator, his wife and two children of elementary school age. The composition of the households and reported time spent at farm and nonfarm work is shown in Table 3.

Since many of the children were of school age, their work contribution during the school year was largely limited to chore labor associated with the livestock enterprises. Older boys were reported as providing a considerable amount of help with summer field work.

Eleven of the households were composed of the operator and his wife only. One family reported thirteen persons in the household. In two cases—one a widower, the other a bachelor—the operator alone constituted the farm household.

TABLE 3.—Household Composition and Reported Time Spent at Farm and Nonfarm Work, 64 Southeastern Ohio Farm Families, 1958

Composition	Total No.	Reporting farm work				Reporting nonfarm work	
		No.	Ave. hrs./wk.		No.	Average days per year	
			Summer	Winter			
Farm operators	64	64	35	23	64	243	
Wives	60	40	13	9	11	222	
Male children							
16 years or over	17	7	39	15	4	220	
11-15 years	20	16	27	16	—	—	
Under 11	36	3	6	3	—	—	
Female children							
16 years or over	7	—	—	—	—	—	
11-15 years	22	1	35	15	—	—	
Under 11	38	2	6	3	—	—	
Total household members	264	133	27	17	79	239	

About two-thirds of the wives reported doing some farm work (outside the home) such as helping with livestock chores, care of the garden, poultry flock, etc. In about one-fourth of all cases, the wife was reported as helping occasionally with field work, especially at planting and harvesting time. Five of the eleven wives working at nonfarm jobs also reported doing some farm work regularly.

In the average situation, the farm operator was contributing about two-thirds of the total time reported spent at farm work during both summer and winter. If some account is taken of the difference in work capacity of the persons reported as working on the farm, it would appear that the part-time farm operator typically was carrying nearly three-fourths of the farm work load in addition to the nonfarm work.

The time reported spent at nonfarm work by individual farmers ranged from 120 to 340 days. About one-fourth of the operators were employed at jobs which required less time than that normally associated with "full-time" nonfarm employment. Some of these 18 men were self-employed tradesmen; others were school teachers, school bus drivers, artificial inseminators, soil conservation aides, etc. These jobs normally did not require more than the equivalent of 180-200 days per year off the farm. Some jobs required more days per year but less than 8 hours of work per day.

In adjusting the family farm operation to the added labor demands of the nonfarm work, numerous changes were evident. However, not all the changes in the 1957 farm operation from that of the last year full time can be considered as **caused by** adding the nonfarm job. In some cases, crop failure, livestock disease, or loss of land previously farmed had reduced the normal farm operation somewhat during the last year of full-time farming. The reduced level of farm income then was the motivating factor in leading the operator to seek nonfarm work.

Size of Farm and Tenure

Under full-time farming organization, the 64 farms totaled over 13,000 acres or an average of about 205 acres per farm.

In 1954, according to the Census of Agriculture, the average size of commercial farm in this area was about 162 acres; the average size of all farms was about 115 acres. In that same year, in the six counties from which the sample was drawn, about 38 percent of all farms were 140 acres or larger in size. Forty-five or about 70 percent of the sample farms were 140 acres or larger when operated as full-time units. It appears reasonable, therefore, to assume that this group of 64 farms represents the average or larger than average-sized commercial farms in this area.

The tenure position of the operators as full-time and as part-time farmers is indicated in Table 4. Nearly all these farmers held title to some or all of the land they operated. In two of the three cases of full tenants, the operator was a close relative of the land owner.

In some cases, the owned real estate of the part owner was quite small—little more than his home and residence site—in others, the owned unit was considerably larger than typical farms of the area. Nine of the operators who were part owners as full-time farmers gave up all rented land when they engaged in part-time farming.

Overall, the change in total acreage in these units shifting from full-time to part-time operation was quite small—a decrease of about five percent. This tends to support the thesis that many of these operators were “underemployed” as full-time farmers. About half of the farmers reported no change in total acreage associated with the change in farm operation classification, twenty-three farms decreased acreage operated and nine units increased total acreage. The median acreage in the 64 units as full-time and part-time farms was 172 and 149 acres respectively.

The change within size groups as to owned and rented land is shown in Figure 1. The smaller unit operators had expanded total acreage after taking nonfarm employment primarily through renting additional land. Total acreage in the larger units had been decreased. In the larger size units, less land was rented as part-time farm units; but enough operators purchased additional land to increase the average size of owned holding for those groups.

The usual pattern in this area was for farmers to operate approximately the same total acreage while working at a nonfarm job. Although these average acreages per farm may appear large for part-time operations, it should be remembered that normally less than one-fourth of this total acreage is in cultivation annually, with considerable acreage in pasture, forest, and waste.

Utilization of the Land

Agricultural land use in southeastern Ohio is determined in large part by topographic features. The limited amount of land that may be cropped without extensive erosion control measures limits the possibilities for intertilled crop production. Both full-time and part-time farm operations are characterized by relatively large proportions of the total acreage being devoted to forage production.

TABLE 4.—Tenure Pattern on 64 Southeastern Ohio Farms as Full-Time and Part-Time Operations

Tenure class	Full-time			Part-time		
	No. cases	Acreage		No. cases	Acreage	
		Mean	Range		Mean	Range
Full owner	31	172	78-760	41	171	72-760
Part owner*	29	243	82-640	20	257	58-537
Owned		155	3-472		173	3-385
Rented		88	4-500		84	4-400
Full tenant	3	223	163-321	3	161	35-263
All farms	64	205	3-760	64	198	3-760

*Part owners own some land and rent some land owned by others.

The general pattern of land use for these 64 farms under full-time and part-time operation is shown in Table 5. Harvested cropland, including hay, accounted for less than 40 percent of the land in full-time and less than 30 percent of the land in part-time farms. Crops other than hay accounted for about 22 percent of acreage full-time and for only about 10 percent under part-time operation.

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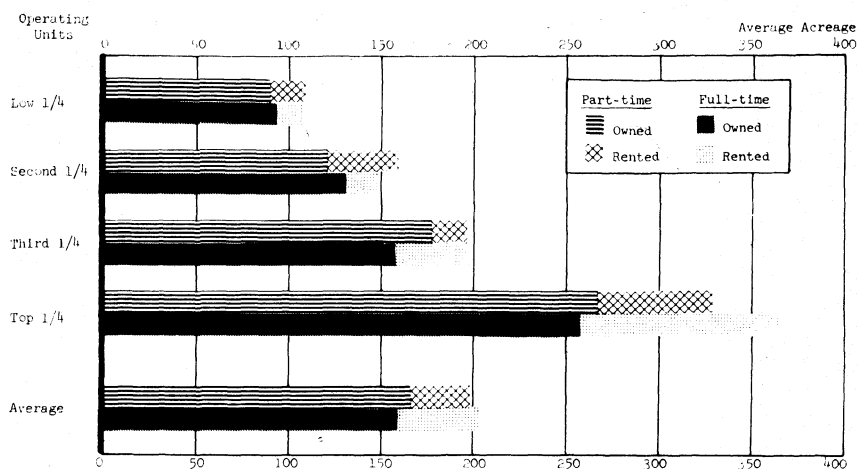


Fig. 1.—Average acreage of owned and rented land in full-time and part-time operations of 64 southeastern Ohio farmers, by size of unit, full-time.

Hay and pasture production occupied the major portion of the acreage in farms under both operating arrangements. The shift to part-time farming was associated with a substantial reduction in cultivated crops and a relative increase in emphasis on hay and pasture. Numerous operators did not produce any intertilled crops, devoting all cropland to hay and pasture. Shifts of this type were apparently facilitated by the soil bank program. Sixteen operators reported having "banked" an average of about 15 acres per farm. Other farmers expressed intentions of participation in the program in the future.

Two farmers were following a complete grassland farming program as full-time operators—the other 62 full-time farmers had some land in cultivated crops. Under part-time operation, 16 farmers reported raising no crops other than hay.

Yields per acre of major crops were generally higher under the part-time farm operation as compared to the previous full-time units. This may reflect higher rates of fertilization on the reduced acreage, restriction of crop production to the better land, better seed, etc. Those operators who gave up producing corn, oats, and wheat had, as full-time farmers, reported yields not significantly different from those still producing tilled crops.

TABLE 5.—Average Land Use Pattern on 64 Southeastern Ohio Farms Under Full-Time and Part-Time Operation

Land use	Full-time		Part-time (1957)	
	Acres	Percent of total	Acres	Percent of total
Hay	34	16	35	18
Corn	29	14	12	6
Wheat	7	4	2	1
Oats	5	3	4	2
Soybeans	3	1	1	1
Other crops	1	*	1	*
Crops (total)	79	38	55	28
Pasture	79	39	88	44
Woods, homestead, waste	47	23	55	28
Total	205	100	198	100

*Less than 1 percent of the total acreage in such crops as tobacco, barley, buckwheat, rye and potatoes.

Livestock

This region of Ohio is frequently characterized as a "general farming" area in which livestock plays a dominant role in the farming operation. This is true of both the full-time and part-time farms. All but one of the sample farms had livestock in the full-time organization, and only two farms reported no livestock in 1957. Table 6 presents the kinds and amounts of livestock on these farms the last year of full-time operation and in 1957.

About three-fourths of the farms had a dairy herd averaging 14 cows per farm when operated as full-time units. Over half maintained a dairy herd in the part-time farm organization. Milk production was reported as being about 8000 pounds per cow in both the full-time and part-time farm operations. This represents a level of production higher than the average of all farms in this area which was about 4700 pounds in 1954.

TABLE 6.—Livestock in Organization of 64 Southeastern Ohio Farms Operated as Full-Time and as Part-Time Units

Kind of livestock	Number of farms reporting		Average number per farm reporting		Average number of all farms	
	Full-time	Part-time	Full-time	Part-time	Full-time	Part-time
Dairy cows	47	36	14	10	10	6
Dairy calves	42	28	13	12	8	5
Beef cows	21	29	22	18	7	8
Beef calves	21	33	17	16	6	8
Sows	30	15	4	4	2	1
Pigs	34	21	32	16	17	5
Ewes	7	6	36	14	4	1
Lambs	7	6	38	25	4	2
Hens	37	29	143	76	83	34
Chickens*	21	8	1148	3662	377	458
Other†	12	19	----	----	----	----
None	1	2	----	----	----	----

* Includes broilers, fryers, and replacements for the laying flock.

† Other: Male breeding animals, horses and ponies, goats, turkeys and rabbits

Beef cattle were present in the farm organization of about one-third of the full-time farms; about half of the part-time units had a beef enterprise.

Poultry (particularly laying hens) was popular on these farms under both operating systems. Some specialized in production of eggs for hatcheries. Fewer of the farmers kept a laying flock after shifting to part-time operation. Two operators had engaged in broiler production both as full-time and as part-time farmers, each producing over 10,000 birds per year.

Sheep, although well adapted in many respects to this area, did not figure prominently in the organization of many units either full time or part time.

Generally, the livestock enterprises on these farms had been reduced in the shift to part-time farming. Through a combination of reduction and substitution of livestock enterprises, the operators reduced both feed crop and labor requirements. Those enterprises (dairy, swine, and poultry) which have relatively high labor requirements were reduced; the beef enterprise was expanded. The ability of beef animals to effectively use the pasture and roughage production adapted to the topography of this area, but requiring considerably less labor than dairy, would appear to make this enterprise a popular choice for part-time farms in southeastern Ohio. Some former dairymen quit milking and shifted to production of dairy heifers.

Productive Employment

The above discussion of changes in crop and livestock production on these farms as they adjusted from full-time to part-time farming noted the trend toward farm operations requiring less labor. Typically, the addition of a nonfarm job to the family farming operation shifts the family from a situation in which labor is abundant (or underemployed) to one of labor scarcity.

In evaluating two different operating systems on the same farms, land utilization and livestock numbers give some indication of the intensity of use of resources. Another method would be to compare these farms on the basis of the need for or use of labor—the human resource. Let us compare these two operating systems in terms of a common denominator—the amount of productive employment they provide.

These 64 farms with their different crop and livestock enterprises required differing amounts of labor to perform the farm operations. These labor requirements are summarized in terms of productive man-work units. A productive man-work unit (abbreviated as PMWU) is a measure of the work performed in a 10-hour day for production of crops and care for productive livestock by an average worker with typical methods and equipment on the ordinary commercial farm.⁷

During full-time operation, these 64 farms provided an average work level of about 250 productive man-work units. The range of situations for individual farms was from 36 to 671 PMWU. This wide range was due primarily to differences in the scope of the livestock enterprises on the farms.

Since the average commercial farm in Ohio furnishes approximately 250-300 PMWU per year, these farms might be considered as about average by this measure.

As part-time farms, the average unit provided about 150 man-days (PMWU) of labor a year—about three-fifths the size of the previous full-time unit.⁸ Median PMWU as full-time and part-time operations were 211 and 119 respectively.

Twenty-one operators had reduced their productive labor requirements by 150 or more PMWU. Twelve farms remained virtually unchanged, but in nine cases, the productive labor requirement was higher under part-time than under the full-time operating arrangement.

⁷The number of productive man-work units accorded to different units of farm production was as follows.

Crops	Unit	PMWU	Livestock	Unit	PMWU
Corn	Acre	1.00	Dairy cows	/head/year	12.00
Wheat	"	.65	Dairy replacements	"	2.00
Barley	"	.65	Dairy calves	"	.10
Rye	"	.60	Ewes	"	.50
Oats	"	.50	Lambs	"	.80
Soybeans	"	.60	Beef cows	"	1.50
Alfalfa	"	.65	Beef heifers	"	1.00
Mixed hay	"	.50	Beef calves and steers	"	1.00
Other hay	"	.40	Brood sows	"	3.00
Tobacco	"	30.00	Market hogs	"	.25
Orchard	"	20.00	Laying hens	per 100	.25
Vineyard	"	20.00	Broilers	"	1.60
Garden	"	10.00	Turkeys	"	7.10
Potatoes	"	8.00			

⁸Differences in means significant at .01 level—yielding "t" for crops of 4.0, livestock of 5.5 and total man-work units of 6.2.

Typically, this latter situation was attributable to an expanded dairy operation. The extra labor for this enterprise was frequently provided by the wife or teenage sons.

Under part-time farm operation, the range of individual cases was from 7 to 614 PMWU. In the latter case, the operator was employed as a school teacher. He and his family, which included two teenage sons, were able to maintain a 40-cow dairy herd in addition to the non-farm employment. Although this is not a "typical case," it does illustrate that the farm enterprises of families who combine farming and nonfarm work are not necessarily small.

Table 7 shows the 64 farms divided into four groups according to the amount of productive employment they provided as full-time units. Three of the four groups reported average decreases; the fourth, and lowest as full time, increased the scope of the farm operations under part-time organization.

TABLE 7.—Average Productive Employment under Full-Time and Part-Time Operation, 64 Southeastern Ohio Farms by Full-Time PMWU Level

PMWU group	Full-time	Part-time	Percentage change
Low 16	118	139	+18
Second 16	185	104	-44
Third 16	265	122	-54
Top 16	427	217	-49
Average	249	146	-41

Although there was a tendency for those smaller units to show increases, this was not consistently true. The expansion efforts of a few operators were in total greater than the reductions reported by others in that group. Similarly, one or a few operators in each of the larger PMWU groups as full-time farms had also expanded farm production after taking nonfarm employment. These situations illustrate how some operators may use the increased income from nonfarm work to add needed capital inputs in the farm operation.

Figure 2 illustrates the change in the distribution of these farms as to productive employment they provided and acreage in the farm. As full-time farms, about 40 percent of the units provided less than 200 PMWU, and half were less than 180 acres in size. In 1957, as part-time operations, nearly 75 percent provided less than 200 PMWU, while about 60 percent contained less than 180 acres.

No single pattern of adjustment was followed by all operators. Some drastically reduced all livestock enterprises, while others reduced the number of livestock enterprises but concentrated their efforts on those remaining. Some shifted from dairy to beef. Others reduced poultry, hogs and beef to intensify the dairy enterprise. The labor requirements for crop production typically were reduced as land was shifted from corn and small grains to hay and pasture.

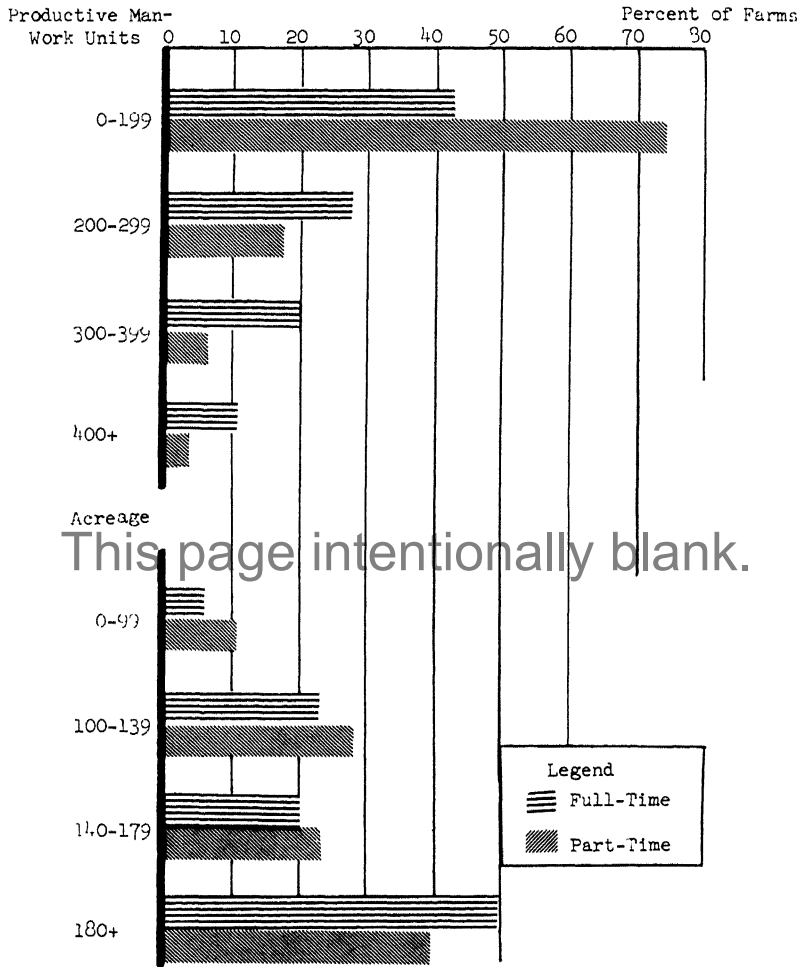


Fig. 2.—Percentage distribution of 64 southeastern Ohio farms according to productive man-work units and acreage during full-time and part-time operation, 6 Ohio counties, 1956.

Adjustments in the farming operation, after taking nonfarm work, extended over a period of years. This pattern also varied from farm to farm. The first few years after taking nonfarm work some operators tried to farm as much as they had previously and then later reduced the farm operation to fit the reduced labor supply available to farm. Others made drastic reductions initially and then rebuilt the operation to the new capacity in a different pattern.

In 1957, these 64 farms were in various stages of adjustment. About one-third was in the first or second year of part-time operation; about one-fourth was in their third or fourth year; about one-fourth was in their fifth or sixth year and the balance had been part-time farmers seven years or more (see Table 8).

Although those who had been farming part time the longest had made the greatest overall reductions, it was difficult to find any consistent pattern of adjustment relative to time. Differences in age, abilities, family size, etc. are certainly also associated with such shifts in scope of farming operations.

Increasing years in the nonfarm job, more security in that employment, promotions or other satisfactions, may also have prompted these operators to place less emphasis on maintaining the farm business.

Labor Efficiency

The amount of productive work accomplished in a given amount of time spent doing a job (labor efficiency) on particular farms varies with the ability and energy of the worker and with the amount of capital resources with which he works, as well as upon the quality of the land on which he spends his time.

TABLE 8.—Average Productive Man-Work Units Provided by Full and Part-Time Farm Operations, by Years, Part Time, Southeastern Ohio

Years of part-time operation	No. of cases	Crop PMWU		Livestock PMWU		Total PMWU		
		Full-time	Part-time	Full-time	Part-time	Full-time	Part-time	Percent change
1-2	21	62	39	217	134	279	173	—38
3-4	18	47	33	171	127	218	160	—27
5-6	15	47	34	159	74	206	108	—47
7 or more	10	93	31	213	93	306	123	—60
Total	64	59	35	190	111	249	146	—41

The productive man-work unit standards used assume a given level of efficiency based on the use of certain labor-saving devices typically found on Ohio farms. The worker able to produce an acre of crops or care for livestock in less time than that assumed would be considered as more efficient. The family working primarily with horse and hand power would probably spend more time performing a given job than this standard assumes.

The 64 farms in this study covered a broad range of situations with respect to labor requirements, labor availability and equipment with which the labor was employed. The farm families had reported the amount of time spent by different household members in carrying on the part-time farming operation. (Similar data were not available for their former full-time farm activities.) We thus have two estimates of the amount of labor required in the farming operation—one according to the standards of performance assumed by the PMWU measure, the second the time reported spent. How do these two measures compare?

Table 9 shows the ratio of these two measures on the 64 farms grouped according to PMWU classes. Typically, the time reported spent by family members exceeded that assumed by the standard of comparison.

This is not uncommon since normally a certain minimum amount of time will be required for general repairs and maintenance on buildings and equipment. This expenditure of labor time, while certainly necessary, is not ordinarily counted in calculation of man-work units.

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TABLE 9.—Average Days Labor Reported Spent, Productive Man-Work Units and Ratio of These Measures, 64 Southeastern Ohio Part-Time Farm Operations, 1957

PMWU range	No. of cases	Average days labor reported on farm*	PMWU			Ratio of days spent on farm to PMWU†
			Crops	Live-stock	Total	
0- 99	30	188	21	37	58	3.2
100-199	17	237	38	106	144	1.6
200-299	11	321	51	196	247	1.3
300 and over	6	339	64	343	407	.8
Total or average	64	238	35	111	146	1.6

*Hours reported spent by operator and others converted to ten-hour days.

†Days labor spent divided by PMWU.

As the scope of the farm operation increased as measured by PMWU, the time reported spent at farm work also increased but at a slower rate. Thus, those families having the larger part-time farming operations were apparently accomplishing more farm work for a given expenditure of labor. To some extent, this may reflect that the necessary maintenance and repair labor does not increase in proportion to the size of farm operation, or that those larger units have better or more productive equipment with which to work. The larger units might also be neglecting some repair and maintenance in order to carry on the larger amount of directly productive operations.

Close examination of the records of the six operators whose PMWU exceeded the time reported spent on the farms revealed the following: These farms were operated by men slightly younger than the average for all farms. Their farms were larger—about 100 acres larger—than the average of all farms. They were using larger equipment and more capital. Some of these operators had performed custom work for other farmers before they took nonfarm jobs.

Problems in Making Adjustments

These 64 farm families had few, if any, problems in adjusting to part-time farming operation. Much of the labor transferred to nonfarm work was apparently “underemployed” in the previous farming arrangement. The reduced crop program appears to better fit the soil and topographic characteristics of the area than the previous operating system.

The problems mentioned most frequently concerned the livestock operations on the part-time units. These problems related to inability to give sufficient attention to animals at time of birth and difficulty of maintaining a breeding program. However, other operators noted they were now able to cull their herds more carefully and increase the attention given to individual animals. The reduction in number of livestock enterprises to concentrate on one or two apparently made this adjustment easier.

It might be expected that many part-time farmers would have some difficulty with maintaining satisfactory crop production programs while holding nonfarm employment. The fact that most had daytime jobs would appear to limit the daylight and dew free hours available for combining, hay harvest, etc. These operators had apparently been able to solve such problems to their satisfaction.

We have already noted the reduction in total crop acreage—especially crops other than hay. Some operators reported taking off time from the nonfarm job to do farm work at critical times. Other farmers planned their job vacation to coincide with hay harvest or other time of peak labor needs on the farm. Even though the earnings in the nonfarm job were substantially higher than the average from employment on the farm, a few days or even a few hours of timely work on a farm may earn a very high return where the loss of a crop, a beef calf, or lambs results from lack of attention.

The demands of a nonfarm job require careful planning if a substantial farm operation is also to be carried out successfully. Whether or not the farm operation should be carried on with more labor or more capital (equipment) depends on the costs of these alternatives. If the family labor used has few alternative employment possibilities, its opportunity cost may be very low. The final measure of the competitive advantage of part-time compared to full-time farming operations will consider the family income levels they achieve.

Farm and Family Income

While the majority of these 64 farm operators had taken nonfarm employment as a means of supplementing their farm incomes, apparently their incomes as full-time farmers had compared very favorably with those of their neighbors. These farmers reported gross incomes while farming full time which had averaged about \$5500 per farm. This was considerably higher than the average of \$1760 gross sales of farm products per farm in the six-county area according to the 1954 census of agriculture.

Gross farm incomes during the last year of full-time farm operations on these 64 farms had ranged from about \$1000 to \$20,000. Net incomes for these extremes of gross incomes were about \$500 and \$4000 respectively. The mean net farm income for all units from full-time farming operations was a little less than \$1800.¹⁰ Although this indicates that these farmers had experienced average net family incomes

⁹Although gross sales figures were not reported for commercial farms in 1954, some calculations would indicate such sales might be estimated at about \$3500 per commercial farm in that year. In 1949, sales averaged about \$2600 per commercial farm and \$1365 for all farms in the six-county area.

¹⁰This figure includes an average of about \$150 from nonfarm sources provided by wives who had taken off-farm jobs while the husband continued to farm "full time."

about equal to the average gross incomes for all farmers in the area, they had taken nonfarm work to augment their incomes. How was family income affected by this decision?

In order to compare the incomes of these families as full-time farmers to their later income level from part-time farming, some account must be taken of changes in levels of prices. During the decade of the 1940's, prices of Ohio farm products doubled. However, between 1951 and 1956, prices of farm products had steadily declined. Prices in 1952 were five percent below those for 1951; in 1953, prices declined 9 percent more; and further decreases occurred in 1954 and 1955. By 1957, prices had declined to about three-fourths of their 1951 level. Thus, the physical output of farm products that produced a gross income of \$10,000 in 1951 was worth only about \$7500 in 1957.

Table 10 reports the average income positions of these 64 farmers divided into groups according to the amount of productive employment the farms provided when organized as full-time units. Therein are reported two figures for gross and net incomes—the first, the actual reported and the second, income adjusted to the 1957 level of product prices. For most of these farm families, the adjusted gross income figure was lower than the actual income, since during their last year of full-time operation product prices were higher than in 1957. However, those farmers who had shifted to part time on the price level of 1945 or earlier had actual reported incomes somewhat lower than the adjusted figures.

In the last year as full-time farmers, these 64 families had gross incomes averaging \$5534. If in 1957 they had produced and sold the same amount of products, their gross incomes would have averaged \$5502.

From their gross incomes, farm operators must pay out expenses for feed, seed, supplies, taxes on real estate and personal property, interest on debts, hired labor, repairs, etc. The total cash costs of operation accounted for about 68 percent of the actual gross incomes, leaving net full-time farm family incomes averaging \$1781 per farm.¹¹ This net income to families is the payment for their labor plus the return on their owned land and capital invested in the farm business.

¹¹The indicated average net income at about 32 percent of gross income was not substantially different from that of farms in this area according to farm business analysis reports of recent years summarized by economists of the Agricultural Extension Service, Ohio State University.

TABLE 10.—Average Income of 64 Southeastern Ohio Farm Families from Full-Time and Part-Time Farm Operations, by PMWU Groups

Item	PMWU provided as full-time units				All farms
	36-156	158-208	212-307	311-671	
Number of cases	16	16	16	16	64
Full-time units					
Average PMWU	118	185	265	427	249
Gross income (actual)	\$4513	\$3259	\$5868	\$8497	\$5534
Gross income (adjusted)*	4251	3017	5719	9024	5502
Net family income (actual)	1517	1079	2265	2263	1781
Net family income (adjusted)†	1411	1003	2197	2398	1752
Part-time units (1957)					
Average PMWU	139	104	122	217	146
Gross farm income	\$5588	\$2280	\$4698	\$5062	\$4407
Net farm income	1457	537	1438	1234	1168
Gross nonfarm income	3918	4045	4147	3943	4013
Net nonfarm income‡	3526	3640	3732	3549	3612
Total family gross income	9506	6325	8844	9006	8420
Total family net income	4983	4177	5171	4784	4779

*Actual income adjusted to 1957 price level by Index of Ohio Farm Product Prices.

†This adjustment assumes that net income would have been reduced in the same proportion as gross income. Although generally the reduction in net income is even greater as gross income levels are reduced and prices paid by farmers have been increasing, the data were not amenable to measures to quantify the changes in net relative to gross incomes.

‡Net nonfarm income = gross nonfarm income minus a 10 percent deduction to cover cost of travel to work, union dues, additional clothing, meals outside the home, etc.

In 1957, the operators of these farms spent an average of 236 days at nonfarm work; in 11 cases, the wife also had nonfarm income. The total off-farm activity brought in an average of \$4013 gross income per family.

The spendable family income resulting from this gross income is larger than from a corresponding amount of gross farm income. However, there are costs associated with these earnings. Although some farmers drove as much as 43 miles to work and some had jobs requiring indefinite travel schedules, the typical part-time farm operator in this area reported driving about 14 miles (each way) to work. Some were

union members whose dues should be considered as a part of the cost of nonfarm work. Additional clothing expenditures, meals eaten outside the home, and similar items reduce the spendable net family income available from the gross income earned in nonfarm work. In order to make some adjustment for these costs, a deduction of 10 percent was made to arrive at an estimate of the net family income from the nonfarm employment.

Overall, as a result of shifting some of the family labor resources to nonfarm employment, gross farm sales were reduced about 20 percent (in 1957 dollars) in the average situation, and net income from the farm was reduced by about one-third.¹²

Five operators reported more gross income from the farm in 1957 than they had received from the full-time units, and ten operators realized more net income from the farm. The average net farm income was \$1168 for the 64 part-time operations but ranged from practically nothing to \$7500.

The decrease in income from the farm was more than offset by the addition of income from the nonfarm sources. Nonfarm income, ranging from \$785 to \$15,000, averaged \$4013 per family.¹³ After allowance for costs associated with employment, the net addition per family was about \$3600.

Only two families had experienced no increase in net income in 1957 compared to the previous full-time situation. Average net family income from all sources in 1957 was nearly \$4800, nearly two and one-half times as much as from farming alone. The range of family incomes on these part-time farms was from about \$1500 to \$14,500 compared to the range of \$254 to \$9783 under full-time farming.

The majority of these farmers expected to continue to operate their farms part time in the future. As was noted above, many were using their increased incomes to reduce indebtedness and to make improvements both on the farm and in the home. Nearly all these operators reported they expected to continue to live on the farm, although some planned to make further changes in their farm operation.

¹²The reduction in gross income adjusted to 1957 prices was not significant at the .05 level ("t" = 1.8); whereas the reduction in net farm income was significant ("t" = 2.8).

¹³This family nonfarm income figure includes the incomes of the 10 wives who also had off-farm employment. Some of the higher levels of nonfarm earnings were the result of two incomes, however, this was not uniformly true.

Alternative Adjustments

Thus far, the emphasis in this publication has been on describing the adjustments made in the farm operations of former southeastern Ohio full-time operators who had shifted to part-time farming. This was what these families had done in their efforts to increase family incomes. Two other alternatives were, or might have been, considered: (1) expanding the full-time farming operation or (2) quitting farming entirely and shifting to nonfarm employment. This latter choice might also involve either moving to town or giving up the farm but retaining just a rural residence. Let us examine these alternatives.

Expanding the Farm Operation

Let us assume that the realized family income from their part-time farming operations (about \$5000) represents a desirable target income or goal for the alternative adjustments. What amount of farm expansion would have been required to achieve this target income?

With full-time farm operations, these 64 farm families had achieved net incomes of about \$1750 from gross farm incomes of about \$5300. Assuming no increase in efficiency or substitutions within the operations in order to have \$5000 net income, these farmers would have had to expand their existing operations to about three times their previous full-time farm size.

Expansion of this type would not have been a practical alternative for most of these families. Such an expansion would have required more land, more equipment, more livestock, and a higher level of operating capital. These operators were already concerned about their liabilities; it is doubtful if they would seriously consider such an increase in indebtedness. A three-fold increase in intertilled cropland, considering the topographic limitations of the area, would normally result in an operation covering an extended area (about 650 acres) but still with small fields. Even if such an expansion were possible with the family labor supply, there remains the question of the ability of the operators to manage that size of unit.

A second, and more practical alternative, would appear to be an intensification of the operation on the existing farm base. This would mean concentrating on one or a few enterprises and increasing the efficiency with which the resources are used.

Since most of these operators were already engaged in a dairy or beef brood herd operation and the land capabilities of the area favor forage crop production, expansion of these enterprises appears feasible. A budgetary approach is used to examine this alternative. Results of

this approach are summarized in Table 11. These calculations indicate a dairy and beef brood herd operation might have been feasible for some of those operators with farms of about 200 acres or more.

TABLE 11.—Summary of Budgeted Program, Receipts and Expenses Compared to Average Programs of 64 Southeastern Ohio Farms as Full-Time Units

Item	Ave. of 64 farms	Budgeted program	Difference
Capital invested			
Land and buildings	\$16500	\$20250	\$3750
Livestock	7121	9803	2682
Machinery and equipment	3875	5280	1405
Feed, supplies, etc.	2005	3850	1350
Total	\$29996	\$39183	\$9187
Farm receipts			
Milk	\$ 2950	\$ 8640	\$5690
Cattle	1382	2400	1018
Swine	595	300	—295
Crop sales	365	413	48
Others	210	50	—160
Total	\$ 5502	\$11803	\$6301
Farm expenses			
Rent	\$ 390	\$ 390	\$ 0
Hired labor	0	90	90
Fuel and oil	572	760	188
Machine repair, hire, truck and auto expense	348	725	377
Electricity (farm share)	193	225	32
Fertilizer, lime, seed and plants	569	1294	725
Feed purchases	488	560	72
Vet, milk test, breeding, purchase livestock, hauling	529	830	301
Taxes, interest, insurance, and depreciation	546	1560	1014
Building, fence repair, etc.	115	390	275
Total	\$ 3750	\$ 6814	\$3064
Summary			
Total receipts	\$ 5502	\$11803	\$6301
Total expenses	3750	6814	3064
Net income	\$ 1752	\$ 4989	\$3237

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With existing price relationships, it would appear that operators with such acreages might have achieved the "target" family income of \$5000 if they could do all of the following:

1. had access to a grade A milk market and were able to maintain a production of about 9000 pounds (3.5 percent milk) per cow from a 24-cow herd;
2. could operate a 20 to 30-cow beef brood herd with an 80-85 percent calf crop;
3. maintained the relatively high level of crop production attained by the better farmers in the area— corn, 70 bushels; wheat, 25 bushels; and alfalfa hay, 3 tons per acre; and
4. obtained the use of about \$9000 of additional capital to make the necessary adjustments.

These budgeted operations are built around a four-year rotation of corn, small grain, and two years of meadow on the cropland. This rotation, coupled with a large percentage of the total acreage in improved permanent pasture, provides an ample supply of grain and roughage for the livestock. The improved pasture and larger hay production are essential since the assumed livestock program is based largely on a forage crop approach.

The additional capital would be needed in part to improve facilities for milk handling, for facilities for both dairy and beef animals, for maintaining the larger inventory of feed and supplies, for increased levels of lime and fertilizer applications, and for other working capital needs.

The budgeted operation, at a level of about 350 to 375 PMWU, would yield a gross income of about \$12,000. Deducting expenses of between \$6500 and \$7000 would leave a family net income of about \$5000.

Adjustment of this type would appear to have been feasible for a limited number of operators on farms included in this study.¹⁴ However, they were apparently unable to achieve the "if" conditions outlined. Considering their full-time performance records, managerial limitations, and reluctance to assume additional indebtedness, these operators chose the part-time farming alternative as a means of increasing family incomes.

¹⁴Some of these farms with relatively large acreages of land suited to forestry production might consider giving more attention to developing this resource as a supplementary enterprise over a period of time.

Give Up Farming Entirely

Another possible alternative for these families, if they did not have a strong personal attachment for farming, would be to give up the farm operation entirely to depend on the income provided by nonfarm employment plus the investment return from the capital now invested in farming. Would this be a better alternative than part-time farming?

The real estate holdings of these farmers in 1957 averaged 160 acres worth about \$16,000 at current prices. An additional \$11,000 to \$12,000 would have been available for other investment if the machinery, livestock, feed and supply inventory, and working capital were liquidated. This would give an invested total of about \$28,000 per farm. No data were obtained relative to the specific amount of indebtedness, but the numerous references to debt would lead one to believe this total investment was rather heavily encumbered. If so, it might be assumed these families had an average net worth of about \$20,000.

Since most of these families owned farm real estate, it seems reasonable to assume that they would also want to own their residence whether in town or in a rural area. A residence similar to the farm living facilities, if purchased in this area, would cost approximately \$10,000, leaving \$10,000 for investment. If this were invested at 5 percent,¹⁵ about \$500 annual return could be added to the family income earned from employment.

The return on investment of \$500 might be compared to the net returns from the part-time farm operation of almost \$1200. However, the net family farm income of \$1167 is payment for family labor and management as well as return on invested capital. Could the labor used on the farm have been more profitably employed elsewhere?

The 64 farm operators reported an average of 243 days of nonfarm employment for which they received approximately \$15.00 a day.¹⁶ It might be assumed that those operators working off the farm less than 250 days would be able to increase their nonfarm employment to this typical level—if so they could have earned approximately \$105 more, bringing total family income to an average of \$4618 (\$4013 actual labor

¹⁵Various interest returns might be used depending on the assumption of investment in bank deposits, government bonds, common stock, or the farm might be sold on contract or mortgage with the farmer financing the buyer.

¹⁶This wage rate was substantially lower than the rate of earnings of all Ohio production workers in manufacturing of about \$2.32 per hour or \$93.36 per week but was not significantly different from levels of wages of all nonfarm workers that prevail in that area of the state.

income, plus \$105 potential earnings, plus \$500 return on invested capital). This potential income could be compared to the realized family income from part-time farming of \$5180 (\$4013 nonfarm plus \$1167 net farm income).

If more of the wives also took nonfarm work or those that did worked more, the nonfarm work income could be further increased. This situation, as well as the increased nonfarm employment of the operator mentioned above, assumes the existence of such alternative employment opportunities that would be open to these individuals. Frequently, these opportunities are not available in this area of the state. More of the available jobs are in employment other than manufacturing and generally are not so remunerative.

Many other assumptions could be examined relative to farm family adjustments to nonfarm opportunities—sell machinery, livestock, etc. pay off debts, rent out the land but continue to live in the farm residence; sell the farm and rent rather than buy another home; sell off the farm land retaining the homestead, etc. Any one of these alternatives might be the most profitable for some of these farm families, while another alternative would appeal to another family. Some farm families from these areas have sold out and moved to nonfarm work in other more industrial areas of the state.

The fact remains that these families, with an expressed preference for farm life, have chosen part-time farming as the alternative that seemed best able to meet their families' needs for income and personal satisfactions of living. None of the alternatives examined in detail held promise of yielding a higher level of income than that realized from part-time farming; even if they had, it is likely many of these families would have chosen to continue to farm part time.

Although the adjustments made by individual operators varied as was noted above—some reduced the operation, some expanded, some intensified, and others shifted toward less intensive farm operations—the higher income derived from nonfarm employment made the adjustment easier. It must be concluded that these operators had made the adjustment to part-time farming with relative ease. Their plans for the future envisioned continuing the part-time farm operation.