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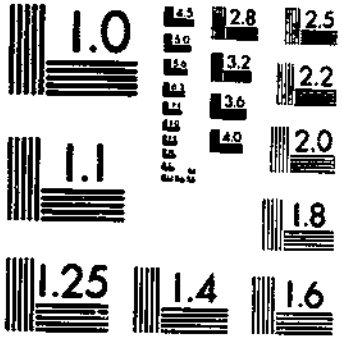

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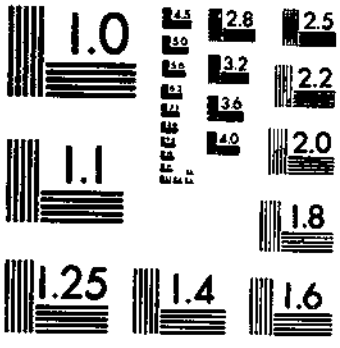

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NATIONAL BUREAU OF STANDARDS-1963-A

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SIZES OF FARMS IN THE UNITED STATES[1]

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SUMMARY

Farms in the United States may be divided into two broad groups from the standpoint of the purpose of the agricultural operations--*farming units* and *other units*. Most of our 5,860,000 farms are operated to provide a livelihood for the farmer and his family and can be characterized as farming units. In many regions, however, small part-time farms and rural residences are numerous. About 1,590,000 or slightly more than one-fourth of all the farms were

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classified by the 1945 census as part-time and nominal units. The proportion of farms so classified varies from nearly 40 percent in the Northeast to less than 10 percent in the Northern Plains.

The 4,270,000 farming units cover a wide range of economic conditions and scale of operations. About 100,000 were classified as large-scale units; they reported, with some exceptions, a total value of products of $20,000 or more in 1944. Investments in land, buildings, and machinery, on these large-scale farms averaged nearly $100,000 and labor resources averaged a little more than 7 man equivalents. They accounted for nearly 22 percent of the gross value of products reported in 1944. Commercial-family farms, with a total value of production ranging from $20,000 to $1,200, accounted for about 55 percent of all farms and more than 70 percent of the gross value of all farm products. In addition there were nearly 1 million small-scale farming units reporting a value of products between $500 and $1,200. All farms in this value-of-product range with operators working off the farm 100 days or more yearly were excluded from this economic class. These small-scale farms were characterized by extremely small acreages and capital resources. Crops harvested averaged 22 acres and total investment about $3,000. These farms accounted for about 16 percent of the total number of farms but for only about 4 percent of the total value of products.

Capital requirements for commercial farming apparently have acted as a deterrent to owner operatorship on many of the larger farms. Less than 40 percent of the large commercial-family and large-scale farms are operated by full owners. Full ownership is most common on the part-time and nominal units where considerations of farm production usually are secondary to residential and other considerations. Nearly three-fourths of the part-time and nominal units are operated by full owners.

Incomes of large-scale farms appear to be somewhat more vulnerable to changes in prices and production conditions than are those of commercial-family farms, partly because of their greater dependence upon hired labor. Margins of net income are narrower on large farms than on medium-sized commercial-family farms, but available data do not suggest that these margins are any wider on small-scale farms than on the medium family farms. Efficiency in production apparently is considerably greater on the medium and larger farms than on the small-scale and small family farms.

Small-scale farms and, to a lesser extent, small family farms have been bypassed in the process of mechanization and other technological developments that have contributed so much to increased agricultural productivity. Investments in machinery and equipment on such farms are extremely small. Production per acre and per unit of livestock is comparatively low. Improvements in agricultural machinery, practices, crop varieties, and livestock, usually have benefited the larger farms more than the small farms.

Operations of several sharecroppers and sometimes tenants in the South frequently are handled as a unit from the standpoint of farm organization and management. Numbers and sizes of management units in the South differ considerably from the number and sizes of census farms. For the multiple-unit area as a whole, the number of census farms totaled 1.5 million in 1945, as com-

pared with 1.1 million management units. Large-scale management units are considerably more numerous than large-scale census farms, but, even on a management-unit basis, only a little more than 1 percent were classified as large-scale. Small-scale and small commercial-family management units are less numerous but they represent a large percentage of the total number. Small-scale management units account for about one-fourth of all the management units in the area.

From the standpoint of the United States as a whole, large-scale farms are not numerous; they constitute about 2 percent of all farms. They are concentrated in certain areas and in particular types of production. In 1944 more than 20 percent of all so-called field crop farms in the Pacific States were large-scale, as were nearly 15 percent of all farms in this region that were classified in the miscellaneous types (including fruit and nuts, vegetable, horticultural specialty, and forest products). There has been some increase in recent decades in the number of large-scale farms as measured either by total acres or by total value of products. Much of this increase has stemmed from technological forces that have permitted the operation of large-scale, highly mechanized farms in some areas. Trends in the number of farms operated primarily by hired labor are less distinct. Available data indicate a significant decrease in the numbers of large tenant plantations in the South.

From nearly two-thirds to more than three-fourths of the farms in the Corn Belt, Lake States, and Northern Plains States, were classified in the commercial-family groups but they are relatively less important in several other regions. Less than one-half of the census farms in the Appalachian, Southeastern, and Delta States, were classified as commercial-family farms. In the Northeast, where part-time and nominal units are especially numerous, about half of the farms were in the commercial-family groups. In the Pacific region, commercial-family farms accounted for about one-half of the farms and for only about two-fifths of the resources.

Problems of adjustment are especially pressing on the small-scale units. These farms generally are too small to utilize modern power and machinery effectively and in many cases available labor is not fully employed even with present types of equipment. Small-scale farms are found in all regions but they are most common in the Appalachian, Southeastern, and Delta States, where they represent about two-fifths of all farms. Operations on some of these farms may have been curtailed because of the operator's advancing age, but more than three-fourths of the operators were under 65 years of age when the census was taken. Low levels of income and education, and training, are major obstacles to vocational adjustments and farm enlargement for many of the families on these farms. Farm adjustments on many of the small-scale farms would require complex changes in the size of the units, kinds of power and machinery, and type of farming. Troublesome farm-adjustment problems are found also on many of the small commercial-family farms, although they may be presumed to be somewhat less acute than the problems commonly found on the small-scale farming units.

Problems of the increasing numbers of part-time, residential, and retirement units, counted as farms, are perhaps more closely related to general employment and social security conditions than to conditions of farm production.

NUMBER AND SIZES OF FARMS IN THE UNITED STATES

Diversity in present-day kinds and sizes of farm emphasizes several important questions. How many farms should we have? What sizes of farms are best fitted to the present environment which is characterized by technical, economic, and social progress? How many people should try to earn their living on them? Can mechanization and relatively prosperous economic conditions be expected to solve the problems of poverty which have become imbedded in some segments of agriculture? How do the differences among the broad groups of farms affect our analysis of economic problems of agriculture, such as farm tenure, income stability, and production efficiency?

The nearly 6 million farms counted by the census in 1945 span an extremely wide range of economic conditions, interests in farming, kinds of production, and associated economic and social problems. In order to provide reasonably complete information on agricultural operations, the 1945 census--like previous enumerations--included any tract of land on which agricultural operations are performed except those of less than 3 acres which report less than $250 total value of products. The resulting "average farm," which finds its way into a multitude of uses, is a combination of such widely varying situations that it has little meaning.

Variations in kinds and sizes of farms have increased during the last few years. Although the total number of farms in this country has changed only slightly in recent decades, striking changes have occurred in the kinds and sizes of farms. As a result of mechanization and other technological developments in agriculture, full-time farms in most areas have been getting larger and fewer. Meanwhile part-time farms and rural residences have increased in numbers along with increasing industrialization and improvements in transportation and in facilities in rural homes.

Study of the characteristics and significance of the important kinds and sizes of farms has been facilitated by the development of an economic classification of farms which was used for the first time in presenting data from the 1945 Sample Census of Agriculture *(19, pp. 15-16)*.[2] This classification evolved from discussions of a joint committee formed by the United States Department of Agriculture and the Bureau of the Census in connection with the 1945 census and an early article on farm classification which appeared in the Journal of Farm Economics (3). It was developed to provide a basis for the description, identification, and analysis, of broad groups of farms similar in their characteristics and problems. Toward this end the economic classification divides the 6 million farms into seven broad classes; provides a basis for a working separation of *farming units* and *other units*; and separates the *farming units* into significant classes primarily from the

[2] Numerals in parentheses refer to Literature Cited, p. 78.

standpoint of the size of business. Data by these economic classes provide considerable new information on broad groups of farms that are similar in size and other characteristics. (1).

In order to describe the broad distinguishing characteristics of the bulk of the farms included in each group the seven economic classes have been designated as: Large-scale farms; large, medium, and small commercial-family farms; small-scale farms; part-time units and nominal units (table 16, p. 54).

Although three general measures were used in distinguishing the groups, the criteria on work off the farm and the total value of products are of primary importance. The value of land and buildings was used as a secondary factor, mainly as a correction factor to take account of unusual circumstances that might affect the value of products in a single year. Only a little more than 2 percent of the census farms were shifted through the use of the criterion regarding the value of land and buildings, but the number varied by economic class.

Broadly speaking, all of the economic classes except part-time and nominal units may be characterized as *farming units*. With few exceptions they are operated as a business or to provide a living for the farm family. Approximately 4.3 million farms are included in these five classes and they cover a wide range in scale of operations and economic conditions. Most of the large-scale farms reported a total value of products in excess of $20,000, in 1944. The large commercial-family farms are those reporting a total value of products of $8,000 to $19,999; medium commercial-family farms have a total value of products of $3,000 to $7,999; and the small commercial-family farms a total value of products from $1,200 to $2,999. In this classification certain additional adjustments were made in each of the classes for situations where the value of products for the single year appeared to be abnormal. Farms with a total value of products of $500 to $1,200, if the operators did not work off the farm as much as 100 days, were designated as small-scale farms. Part-time and nominal units, in contrast to the farming units, generally do not furnish the major share of the income for the farm families although some farming is carried on. Farm people usually do not consider these places as farms and most discussions of farm problems implicitly exclude these groups.

Part-time and Nominal Units

An important first step in understanding the structure of present-day agriculture is the separation of the *farming units* from the *other units*. Many of the smaller units included in the census are part-time farms, some are retirement units, others are rural homes with only incidental farm production. More than one-fourth of the total number of farms, or about 1-1/2 million farms, were classified as part-time and nominal, in the 1945 census.

These part-time and nominal units represent a somewhat imperfect delineation of the farms enumerated by the Census of Agriculture which are not formed for a living but are used primarily as a place to live or for supplemental income. The class designated as part-time includes, in general, the farms that had

from $250 to $1,199 gross value of products in 1944, and the operator worked 100 days or more off the farm. It was assumed that the larger farms would be operated as business units even though considerable off-farm work was done. Approximately three-fourths of the farms with operators working off the farm 100 days or more were classified as part-time and nominal units.[3]

Nominal units include all census farms that reported less than $250 total value of products, farms with a total value of products of $250 to $499 if the operator did not work off the farm as much as 100 days, and certain other farms that appeared to be abnormal.

Many in the nominal class are residential and retirement units. About two-thirds of them reported less than 10 acres of harvested cropland (table 17, p. 54). But there may be a number of units classified as nominal on which the farm business actually represents the primary vocational interest of the operators. Included in this category are farms which for any reason had a very low value of products reported for the census year.

Lack of understanding of the many small part-time and nominal units included in the census enumerations often gives rise to serious misconceptions. Over-all figures on the characteristics of farms include these units and this directly affects averages of farm characteristics. For example, the average size of farm and the average net income of farm operators from farming is more than one-fourth larger for the *farming units* than for all census units (tables 1 and 18, pp. 7, 55). Part-time and nominal units add little to the production or resource totals but they increase substantially the numbers of farms. In considering income, in particular, it is necessary to recall that the farm income from part-time and nominal units generally is but a small part of the total income of the families operating them. Grouping the *farming units* separately from the part-time and nominal units provides a more realistic statistical picture of such characteristics as average acreages and incomes.

The effects of this separation are much greater in some regions than in others. In the Northeast, for example, where part-time farming is rather common, the operator's average net farm income from farming is about 40 percent larger for farming units than for all census farms. In the Northern Plains the difference is only about 10 percent. In studying the farming problems of broad groups of farms in the United States a distinction between *farming units* and the *other units* is especially helpful. Profit or loss from farming on part-time, residential, and retirement units has significance only in relation to off-farm activities and other considerations. The problems as well as the opportunities for adjustment on farming units and on part-time and residential units are sufficiently distinct to warrant separate study and to require different methods of analysis.

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[3] The percentage of the total number of operators of farming units working off the farm 100 days or more by economic class are: Large-scale 5 percent; large commercial-family 5 percent; medium commercial-family 6 percent; small commercial-family 12 percent.

TABLE 1.--*Farm acreage, value of machinery, and net incomes per farming unit as a percentage of average for all census farms, by regions, 1944*[1]

Region[2]	Farm acreage	Value of implements and machinery	Operator's realized net income from agriculture and Government payments
	Percent	*Percent*	*Percent*
Northeast	130	145	139
Corn Belt	120	125	123
Lake	114	123	119
Appalachian	123	138	134
Southeast	121	126	127
Delta	111	120	123
Southern Plains	132	132	128
Northern Plains	107	109	109
Mountain	128	127	125
Pacific	140	140	133
United States	127	129	127

[1] Derived from "*Net income of Farm Operators from Farming, by States, 1943-44,*" (July 1946), and *Special Report on Sample Census of Agriculture* (19, pp. 120-159).

[2] States included in each region are as follows. *Northeast:* Maine, N. H., Vt., Mass., R. I., Conn., N. Y., N. J., Del., Pa., Md. *Appalachian:* Va., W. Va., N. C., Ky., Tenn. *Southeast:* S. C., Ga., Fla., Ala. *Delta:* Ark., La., Miss. *Corn Belt:* Ohio, Ind., Ill., Iowa, Mo. *Lake:* Mich., Wis., Minn. *Northern Plains:* N. Dak., S. Dak., Nebr., Kans. *Southern Plains:* Okla. Texas. *Mountain:* Mont., Idaho, Wyo., Colo., N. Mex., Ariz., Utah, Nev. *Pacific:* Wash. Oreg. and Calif.

Changes in Importance of Major Groups of Farms

Substantial changes have taken place in the numbers of *farming units* and *other units* within the last few decades. Some indication of the magnitude of the changes that have occurred in the last 15 years are given by the estimates of the numbers falling in the part-time and nominal categories in 1940 and 1930 (fig. 1). These estimates indicate an increase of approximately 440,000 or nearly 40 percent in the number of part-time and nominal units during the 15-year period.[4]

[4] The estimates should be regarded as approximations, in view of the nature of adjustments required, variations in coverage, and the lack of information on how the respective groups are affected by over-all changes in price levels and yields, as well as the lack of strictly comparable information on the number of part-time farmers by income groups, in 1930. Data on number of farming units and of part-time and nominal units for 1940 and 1930 were based on the estimated number of part-time farms with operators working 100 days and over and other very small units by adjusted value of product groups. Value of product groups in earlier years were adjusted for changes in prices, yields, and other factors, on basis of the total value of products reported by the census as sold and used in these years compared with 1944. This method appeared reasonable since the level of total inputs in agriculture changed relatively little during the period. For the level of inputs in these years see Progress of Farm Mechanization, *(7, p. 67)*.

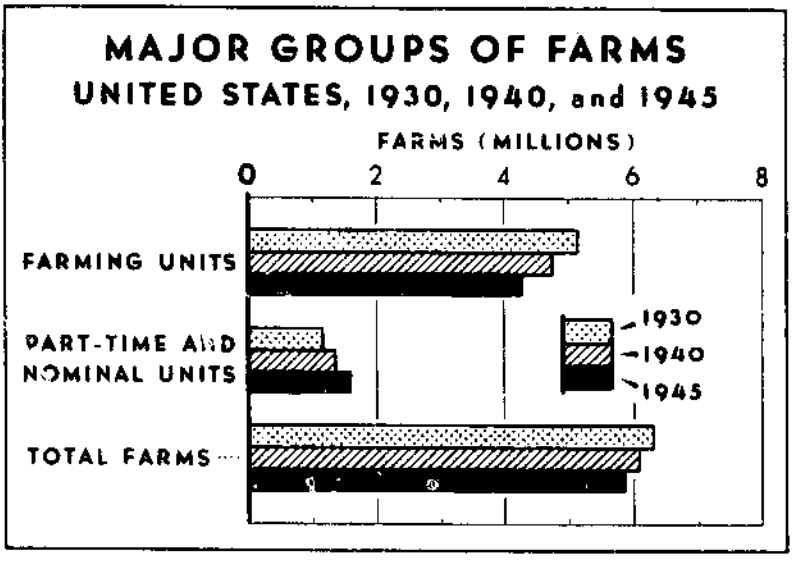

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FIGURE 1.--Numbers of farms counted by the census have decreased only slightly during the last 15 years. The more rapid decrease in numbers of farming units has been partially offset by the marked increase in the numbers of part-time and nominal units.

High levels of industrial employment and shortage of urban housing recently have added to the numbers of residential units in rural areas. Even more influential over the longer run has been the growing industrialization of our Nation together with improvements in rural home facilities and in transportation. Another indication of the growing importance of part-time and residential units in agriculture has been the increase, from 1930 to 1945, of 356,000 in the number of part-time farmers and of nearly 200,000 in the number of farm operators who are more than 65 years old. Farming is rather incidental for a large proportion of these people. The part-time and nominal units are concentrated most heavily around industrial areas, where topography and other conditions are residentially attractive (fig. 2).

Recent trends in the numbers of *farming units* and *other units* probably will continue. Some further increase in the number of small residential units seems likely, though fewer may be counted in future census enumerations. On the other hand, fewer workers will be needed in full-time farming as mechanization continues. This will mean a trend toward fewer and larger full-time farms.[5]

The extent of the decrease in the number of farming units depends somewhat on how a farm is defined. In the South the operations of sharecroppers (and sometimes those of some other kinds of tenants) commonly are parts of larger units from the standpoint of farm organization and management. In such a system the en-

[5] See *Scale of Agricultural Production. (5, pp. 329-370)* for an early discussion of current trends in sizes of farms.

tire unit generally is considered as a single "farm" by local standards. Under census definitions, however, each of the individual cropper and tenent operations is reported as a separate farm. A part of the change in the number of farming units since 1930 is explained by the declining number of sharecropper units. The number of "management units" has declined less than has the total number of census farms, probably averaging somewhat under 1 percent per year.

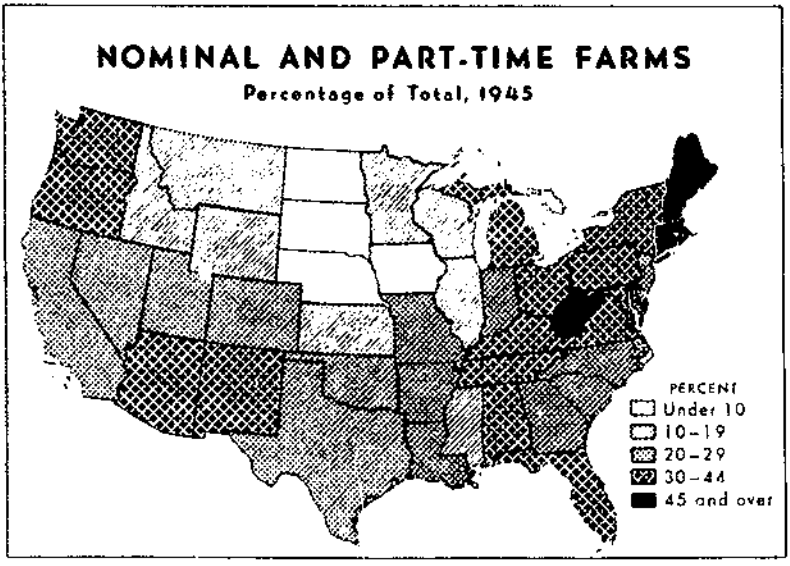

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FIGURE 2.--Part-time and nominal units are likely to be concentrated around the industrial centers of the Northeastern, the Appalachian, and the Pacific Coast regions where topography and other conditions are residentially attractive.

Sizes of Farming Units

There are many ways of measuring size. Acreage in the farm is the measure most commonly used. But acreage alone is not a very satisfactory measure. Size of farm generally implies more than the acreage used. Primary interest is in the size of business carried on. A 50-acre irrigated vegetable farm may carry on a much larger business than a 500-acre dry-land wheat farm. A specialized poultry farm may produce more on 15 acres than a livestock ranch does on 1,500 acres of grassland.

Capital employed is another frequently used measure of size of business. This is a good measure for farms having the same general type of organization. But some types of farms, as truck and tobacco farming, require relatively large amounts of labor. Cash-grain farms, on the other hand, use large amounts of capital and relatively little labor. Similar difficulties are involved in the use of labor as a measure of size. No single input--land, labor, or capital--takes account of the various capital-labor combinations

of different types of farms or of farms of the same types in different areas which make for differences in the size of the business.

In the 1945 economic classification, farming units are grouped by the size of the business operated. Total value of products was selected as the best available single measure of the size of business operated for use in comparisons among areas and types of farms. It represents the most complete measure of size provided by census data.

Although it is a measure of outputs rather than inputs the total value of products is fairly closely related to the total input of land, labor, capital, and management. It includes the value of all crops sold or to be sold, livestock, livestock products, and other farm products sold, and the farm products used in the household.

As a class, large-scale farms are considerably different from other farming units in the structure of their business organization (table 2). For the most part, farms included in this class had a total value of products of $20,000 or more, in 1944. However, a considerable number of farms with value of products somewhat under $20,000 were included, where very large capital investments and other characteristics of a large-scale farm unit indicated that income was unusually low because of unfavorable yields or other considerations. The approximately 100,000 large-scale farms are characterized by large investments and much hired labor. Investment in land, buildings, machinery, and livestock, averaged nearly $100,000, and labor resources averaged a little more than 7 man equivalents. About 60 percent of these farms paid wages that totaled more than $2,500, in 1944. The scale of the operations and the amounts of hired labor reported indicate that the operators of large-scale farms spend much of their time supervising other workers and in other management activities.

The three classes of *commercial-family farms* span a wide range in the quantities and kinds of resources used. Most of these farms are producing primarily for sale and are operated mainly with family labor. On the average, the large family farms in 1945 contained a little more than 500 acres, of which about 200 acres were in crops. Medium family farms had a total acreage averaging about 240 acres, with about 100 acres of cropland. The comparable averages for the small family farms were 125 acres of total land and 46 acres of cropland. Variations in the value of investment were even wider, ranging from an average of more than $30,000 on large family farms to less than $7,000 on small family farms. Labor resources vary much less; they range from an average of 1.3 to 2.5 man equivalents. Hired labor is most important on the large family farms but only 13 percent of these operators paid more than $2,500 in wages, in 1944.

The farm business is the main occupation and the main source of income on a substantial number of small farms that contribute relatively little to commercial production. Farms with $500 to $1,200 total value of products, where the operator did not work off the farm as much as 100 days, were designated as *small-scale farms*. Available evidence from surveys in selected areas and other sources indicates that most of the families on these farms depend on farming for their livelihood. But it should be recognized that there are exceptions. Farms in this group are very small, having an average of less than 80 acres of land and only about 20

TABLE 2.--*Number of farms, and specified characteristics, average per farm by economic class, United States, 1945* [1]

Economic class [2]	Number of farms [3]	All land in farm [3]	Cropland harvested [3]	All labor resources [4]	Total investment [5]	Land and buildings [5]	Power and machinery [6]	Productive livestock [7]	Farm products sold and used [3]
	Thousands	*Acres*	*Acres*	*Man equivalent* [1]	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Farming units:									
Large-scale farms.....	102.1	2,906	384	7.2	95,835	78,449	6,992	10,428	39,217
Commercial-family farms:									
Large.....	408.9	514	193	2.5	33,203	26,067	3,264	3,870	10,484
Medium.....	1,173.0	236	104	1.8	15,135	11,134	1,828	2,176	4,658
Small.....	1,661.9	125	46	1.5	6,768	5,117	783	870	1,874
Small-scale farms.....	923.5	72	22	1.3	3,029	2,305	349	375	825
Other units:									
Part-time units.....	602.2	43	10	.5	3,142	2,587	281	278	574
Nominal units.....	987.3	65	11	.9	4,042	3,583	249	209	264
All farms.....	5,858.9	196	60	1.5	10,419	8,100	1,063	1,256	3,113

[1] Averages of all farms in each class.
[2] For explanation of the economic classes see table 16, p. 54.
[3] *Special Report 1945 Sample Census of Agriculture (19, table 29, pp. 120-159).*
[4] Estimated. Includes estimated family labor available for farm work and estimated man equivalents of labor hired.
[5] Includes value of land and buildings, power and machinery, and productive livestock.
[6] Estimates based on value of implements and machinery and estimated value of workstock by economic class.
[7] Estimates based on numbers of livestock and average prices per head, January 1, 1945 by States and economic class.

acres in crops. Total investment averaged about $3,000 in 1944. Power and machinery were valued at less than $400.

Labor resources are particularly large in relation to the land, livestock, and machinery on the small family and small-scale farms. The capital resources per man equivalent, in 1945, averaged approximately $7,000 for all farms but small family farms had an average of only a little more than $4,000 per man equivalent and the small-scale farms only $2,000.

Measurement of the labor resources on each of the classes of farms is based on the estimated man equivalents of operator and family labor available for farm work together with the other labor hired (table 19, p. 56). On the basis of these estimates available family labor is relatively constant on all except the smaller farms.

The small amount of capital per worker is reflected in the low value of product per man. As small farms provide limited opportunity for utilizing available labor resources their operators often employ inefficient combinations of labor and capital, or they use labor in combination with kinds of capital that have a comparatively low productivity.

The amounts and kinds of capital used on small farms are significant indicators of the selective nature of the technological changes that have occurred in recent decades. The small investment in power and machinery on these farms includes few of the tractors or other modern implements and machinery that have so much increased agricultural productivity. Generally these farms are too small to warrant the purchase of labor-saving equipment. Further, the labor on these farms is supplied by members of the family and often no other productive employment would be available for those released by a shift to more mechanized operation. Less than 10 percent of the small-scale farms have tractors although the percentage varies considerably among regions (table 20, p. 57).

Small size of business, and a relatively high proportion of labor in relation to capital, also characterize in a lesser degree the small family farms. But this class covers a wider range of conditions from the standpoint both of volume of business and of production characteristics than is found on small-scale farms. There is considerable variation in the volume of business and in the kinds and amounts of equipment and other capital among regions and types of farms. Some of these farms are in a stage of transition from smaller to larger units and from horse to tractor power.

Large numbers of the small-scale and small family farms also lack the modern facilities that make farm life more enjoyable. Thirteen percent of the small-scale farms reported running water and about 14 percent reported mechanical refrigeration. Often the earnings from these farms are not enough to obtain these facilities and the concentrated low-production farming areas usually have been slow to acquire such community services as telephones and electricity.

Importance of Broad Groups of Farms

Present numbers and sizes of farming units reflect in part the technological developments in farming over the last half-century. Mechanization and other technological developments have been accompanied by an increase in the size of farming units. Although

there has been a general increase in the size and a general decrease in the number of farming units, not all farms have been affected materially by these changes. Many tobacco and cotton farms, for example, continue to be operated with mules and half-row equipment. In many other areas mechanization has increased substantially the size of farm that can be handled by the family. Present-day American agriculture is characterized by a wide variety of farm sizes. The importance of the various classes of farms varies greatly from the standpoint both of numbers of farms and of farm production. Comparison of the numbers and resources of large-scale, commercial-family, and small-scale farming units provides a measure of the extent of these differences and helps to explain why research and farm policy must take account of both the number of farms and the production involved.

TABLE 3.--*Percentage of farms, specified resources, and value of farm products, by economic class, United States, 1945*

Economic class	Number of farms [1]	Farm acreage [1]		Total capital [2]	All labor resources [2]	Value of all farm products [1]	
		All land	Crop land			Sold & used	Sold
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Farming units:							
Large-scale farms	1.7	25.8	11.1	16.0	8.3	21.9	24.2
Commercial-family farms:							
Large	7.0	18.3	22.3	22.3	11.5	23.5	25.2
Medium	20.0	24.1	34.4	29.1	24.2	30.0	30.6
Small	28.4	18.1	21.7	18.4	28.1	17.1	15.4
Small-scale farms	15.8	5.8	5.7	4.6	13.7	4.2	3.0
Other units:							
Part-time units	10.3	2.3	1.7	3.1	3.6	1.9	.9
Nominal units	16.8	5.6	3.1	6.5	10.6	1.4	.7
All farms	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1] *Special Report 1945 Sample Census of Agriculture (19, table 29, pp. 120-159).*

[2] *Estimated.*

Large-scale farms, as defined by the economic classification, are not numerous--they represent less than 2 percent of the total number of farms. But from the standpoint of total production and land use they are important; they account for more than one-fifth of the production and nearly one-fourth of the farm sales (table 3). From a national standpoint the commercial-family farms account for the bulk of the farms and farm production. Together, the three classes of family-commercial farms include 55 percent of the farms and 71 percent of the total value of products sold and used. Nearly 1 million farms, or approximately 10 percent of the total number of farms, were classified as small-scale and they account for only about 4 percent of the total value of products sold and used.

The small total of farm production contributed by small-scale farms is due partly to the relatively small quantities of land and capital resources on these farms. The small-scale farms, and to

some extent the small family farms, utilize a relatively large proportion of the farm labor force on a relatively small part of the land and with a relatively small part of the capital resources. Small-scale farms have only 6 percent of the cropland and 5 percent of the total capital in agriculture, but they accounted for nearly 15 percent of the estimated total labor resources.

Production Conditions and Variations in Sizes of Farms

Production conditions, including density of farm population, opportunities for off-farm employment, topography, suitability of land for particular enterprises, and related aspects, have influenced greatly the present pattern of numbers and sizes of farms. Institutions and some aspects of public policy also have been influential.

The process of technological development in agriculture has served to increase materially the productive efficiency of many farmers, and to reduce the cost per unit on their farms. But small-scale farms and to a lesser extent the small family farms have frequently been bypassed in this process of mechanization. This is indicated not only by the low amounts of capital and the few kinds of farm equipment found on the farms but also by the characteristics of the areas in which they are concentrated. Although considerable numbers of these farms are found in all sections of the country they are more important in the South, where progress in mechanization has been slow (fig. 3). They represent a particularly large proportion of the total number of farms in most of the eastern Cotton Belt in the Appalachian and Ozark areas, and in eastern Oklahoma and Texas.

When farms with agricultural disadvantages are located near urban centers the operators can more easily find off-farm employment and these farms often are sold to those who wish to live in the open country and work in the city. A little farming may be done but it usually is not the main source of income. Such changes often represent a desirable adjustment to the changing economic conditions. Automobiles, improved roads, and rural home facilities, have made country living attractive to many city workers.[6]

When the farms are located a considerable distance from cities or towns the opportunities for off-farm work by the operators are fewer and purchases for residential uses are less common. To expand significantly the size of these small farms often requires complex changes in the type of farming rather than a simple substitution of capital for labor. Many continue to be operated without benefit of the developments in farm practices and machinery that have helped to raise the general level of agricultural productivity. Resulting low levels of incomes, savings, and schooling, tend to limit the opportunities for farm adjustment and for off-farm employment.

Difficulties in mechanizing cotton, tobacco, and other crops grown in some of these areas have been a part of the problem of farm enlargement and development, but a large farming population and limited opportunities for off-farm work frequently have re-

[6] For a discussion of this trend in New York, see *Rural Holdings in Dryden* (24).

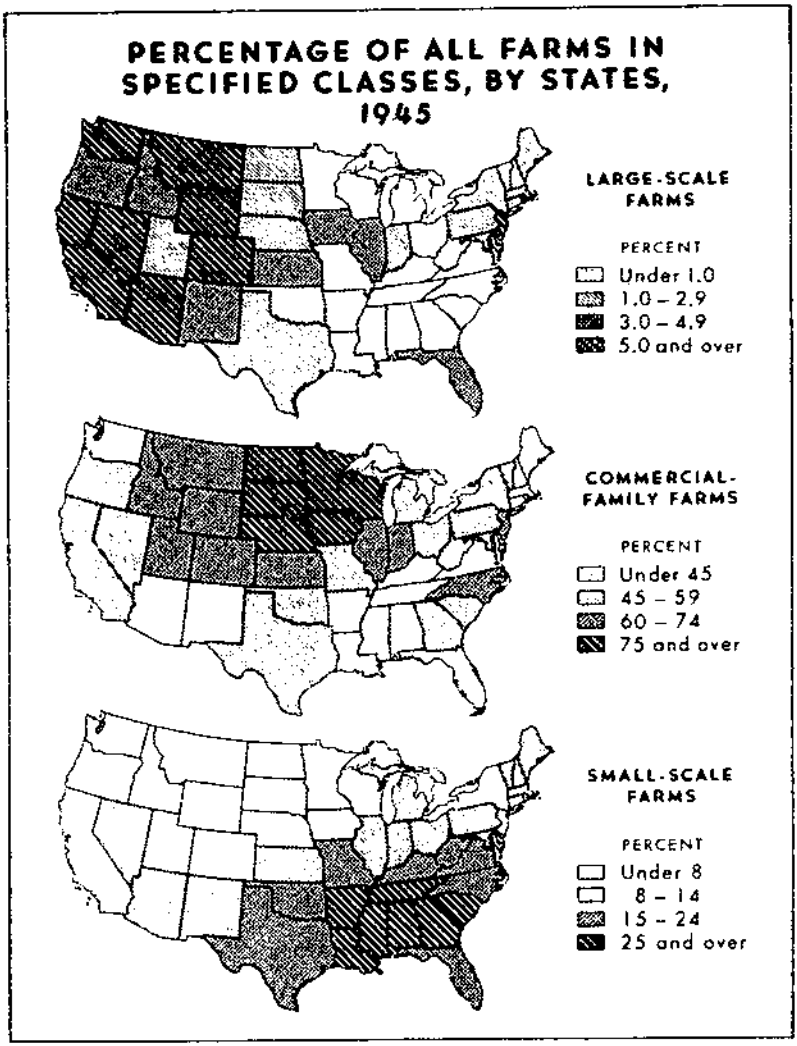

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FIGURE 3.--The relative importance of large-scale, commercial-family, and small-scale farms varies significantly by regions.

tarded the making of desirable adjustments and the adoption of improved methods of farming. When the changes in mechanization came before the areas were completely settled or stabilized, changes in size of farm were made much more easily. This happened in some parts of the Great Plains, for example.

At the other end of the size scale, the numbers of large-scale farming units are influenced by special production conditions of a

somewhat different kind. The large-scale farms are concentrated in particular localities and in particular types of production. They are most important in the Western States. Many of the large-scale farms are of specialized types. Nearly one-fifth of all large-scale farms in the United States were classified in "miscellaneous or other types," which includes fruit and nut, vegetable, horticultural speciality, and forest-product farms (table 21, p. 58).

Other important specialized types include livestock ranches, irrigated crop farms, and large-scale wheat farms. Variations in the numbers of large-scale farms suggest the influence of special market and production considerations and the nature of the management and supervision required.

Commercial-family farms as a group comprise the great bulk of the farms in the Corn Belt and the Midwestern areas. Adaptability of family farms to changing levels of price and yield, the valuable savings from supplementary and complementary relation-

TABLE 4.--Value of land and buildings per acre, by economic class, by regions, 1945[1]

Region	Farming units					Other units	
	Large-scale farms	Commercial-family farms			Small-scale farms	Part-time units	Nominal units
		Large	Medium	Small			
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Northeast....	156	80	56	55	48	69	104
Corn Belt....	143	122	82	59	42	75	77
Lake.....	90	77	62	49	39	63	63
Appalachian..	92	71	56	46	35	52	53
Southeast....	35	32	33	32	27	48	36
Delta.....	58	48	42	37	27	37	32
Southern Plains.....	16	31	37	34	28	53	38
Northern Plains.....	23	33	30	27	22	43	33
Mountain.....	7	13	17	18	15	45	20
Pacific.....	66	75	85	81	79	147	121
United States	27	51	47	41	32	60	55

[1] *Special Report 1945 Sample Census of Agriculture*. (19, table 29, pp. 120-159)

ships among enterprises on diversified farms under close management and supervision, and the management problems of a highly mechanized and diversified agriculture, seem sufficient to check the expansion of extremely large farms in these regions. Small family farms follow a somewhat different pattern than the medium and larger farms. They are of greatest importance in the Appalachian, Corn Belt, Southeastern, and Delta States (table 22, p. 59).

In many regions the larger farms are likely to be located on the more fertile and productive lands, as indicated by the average value of land and buildings per acre (table 4). In the Corn Belt, for example, available data indicate a concentration of larger farms in the fertile level areas of the central Corn Belt, whereas small family and small-scale units are more frequently found in such areas as southern Indiana and Illinois and the Ozarks of Missouri.

In the Western and Plains States the average values of land and buildings per acre are often somewhat less on the large-scale and large family units than on somewhat smaller farms. Large cattle ranches and dryland wheat farms are numerous in these regions and the value of land and buildings per acre on these types of farms is usually much lower than on farms of other types.

Production per acre and per unit of livestock is higher on the larger farms than on the small farms (table 5). Improvements in agriculture practices frequently have benefited the farmers on the good land more than those who have some physical disadvantages, such as rough topography or only small acreages of cultivatable soils. In addition, the larger capital accumulations and incomes often provide the operators who have farms above average in size with better opportunities for adopting improvements in production methods. The use of improved varieties and cultural methods are often reflected in higher yields. Operators of large wheat farms, for example, are able to plow and prepare the land more nearly at the proper time, they commonly use improved varieties of seed, and they are more likely to apply phosphates if needed. Operators of large Corn Belt farms are more likely to use hybrid seed corn, commercial fertilizer, and legumes, which make for higher yields per acre. These improved production practices bring substantial increases in yields per acre and per unit of livestock on larger farms as compared with those that are smaller. Moreover, there is some tendency for the farms that happen to have a higher yield in the census year to be classified in the larger size groups. Although apparently it is not significant enough to influence materially the general levels of value of products or the characteristics of the farms, in any attempt to develop precise measures of net income or productivity relationships directly from data by economic classes, it becomes much more important.

FARM SIZES AND FARM PROBLEMS

Many of the economic problems confronting farm operators and their families are related closely to the size of their farm operations. Some of these problems are peculiar to particular classes of farms. Others assume significance when viewed as comparisons among the economic classes. Chief of these are certain aspects of the efficiency of farm production, financial stability, and farm tenure.

Farm Tenure

Farm ownership sometimes is discussed without particular regard for other production conditions. For example, the fact that the number of full owners increased 15 percent from 1930 to 1945 sometimes has been taken as evidence of a rapid increase in farm ownership. But more than one-third of the full owners enumerated by the 1945 census were operating part-time or nominal units (table 23, p. 60). Thus some of the recent increase in farm ownership is accounted for by the large increase in the numbers of residential units. Tenure problems on residential units should be considered from a different standpoint than those on the farming units where the farm is a business as well as a home. Questions of family security and stability are of primary concern when the tenure status of residential units is analyzed. Tenure problems

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TABLE 5.--*Yield per acre of major crops, milk per cow and eggs per hen, specified type of farming regions, by economic class, 1944*[1]

Economic class	Crop and region					
	Corn[2]	Wheat		Cotton		Tobacco
	Corn Belt States	Northern Plains States	Southern Plains States	Southeast States	Delta States	Appalachian States
	Bushels	*Bushels*	*Bushels*	*Pounds*	*Pounds*	*Pounds*
Farming units:						
Large-scale farms...	52.8	19.1	20.8	421	464	1,326
Commercial-family farms						
Large.....	50.1	16.7	17.6	403	410	1,212
Medium.....	44.4	14.2	16.0	394	433	1,161
Small.....	35.5	11.8	13.3	352	390	1,041
Small-scale farms...	29.2	11.4	11.0	282	301	945
Other units:						
Part-time units.....	30.2	9.6	13.5	284	240	945
Nominal units.....	31.6	11.1	13.8	215	212	785
All farms.....	46.9	15.3	17.4	340	370	1,092

Economic class	Livestock product and region					
	Milk per cow[3]				Eggs per hen[4]	
	Northeast States	Corn Belt States	Lake States	Pacific States	Northeast States	Corn Belt States
	Gallons	*Gallons*	*Gallons*	*Gallons*	*Dozen*	*Dozen*
Farming units:						
Large-scale farms...	873	664	798	961	10.9	8.3
Commercial-family farms						
Large.....	786	634	731	793	10.1	8.1
Medium.....	682	569	656	716	9.4	8.0
Small.....	538	464	542	610	8.5	7.7
Small-scale farms...	422	387	459	600	7.0	7.0
Other units:						
Part-time units.....	442	420	458	579	7.5	6.9
Nominal units.....	420	377	380	494	5.5	5.5
All farms.....	679	542	624	783	9.3	7.7

[1] Based on unpublished data from the 1945 Simple Census of Agriculture, used by permission of the Bureau of Census.
[2] Harvested for grain.
[3] Per cow milked during 1944.
[4] Per chicken over 4 months old on hand January 1, 1945.

of farming units need to be viewed from the standpoints of both security and production efficiency.

Tenancy often represents a means of increasing the size and the levels of income from the farm operations on the farming units, although the conditions under which this occurs may give rise to some degree of insecurity. The greater number of farms by part-owners in the larger size groups explains how a great many farms become larger (fig. 4). In this group of part-owner farms a little more than half of the land (about 52 percent) is owned by the op-

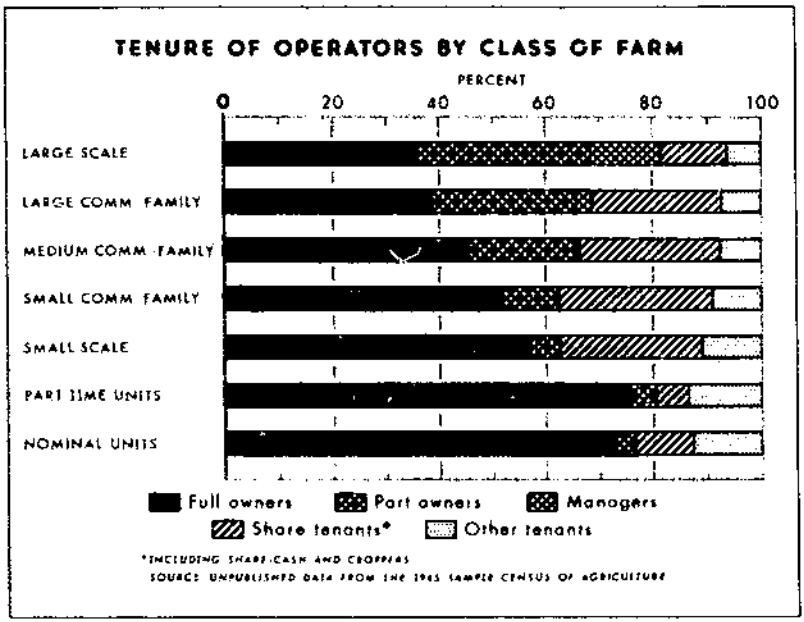

FIGURE 4.--Full ownership decreases as size of farm increases but about the same proportion of farmers on all classes of farming units own some of the land they operate. About three-fourths of the part-time and nominal units are operated by full owners.

erators. Farmers who own some land often rent adjoining farms or separate tracts that can be combined with their own for operation as an efficient unit. Part ownership is most common on the large farms. In some cases a choice is made between greater production efficiency and full ownership when these farms are enlarged. The choice may be between owner operatorship of a small unit and the use of capital for machinery and equipment to operate a larger unit as a tenant. Over-all information is not available on the amount of mortgaged debt by economic class, but related data seem to indicate that a somewhat larger percentage of the larger owner-operated farms are mortgaged.

Financial Stability

Farm operators' incomes available for family living characteristically fluctuate widely because of the highly variable nature of farm prices and crop yields on individual farms and the tendency for many farm costs to remain relatively fixed. Expenses for fuel, repairs, taxes, farm supplies, and debt service, for example, seldom change in proportion to changes in farm incomes so relative changes from year to year in net incomes available for family living generally are greater than are the changes in gross incomes. This is particularly true in cases where the expenditures for resources and other inputs not owned by the family constitute a large

part of the gross income, so that margins of net income per unit of product are narrow.

In appraising the degree to which operators of various sizes of units are affected by changes in economic conditions, particular attention must be given to the proportion of the resources in each group that is owned by the operator; for margins of net income are affected materially by payments for hired labor, interest, and land rent. When farm prices increase or decrease more than do unit costs, the effects on net incomes will vary materially, depending, in part, on the margin of net income per unit of product. If the margin of net income is narrow, changes in prices will affect the net incomes more than when the margin is wider. The relatively greater dependence on hired labor appears to be one of the major reasons why the margin of net income is narrower on the large family and large-scale farms than on the medium family farms.

The higher percentage of rented land on the larger units also decreases the average margin of net income on these farms. Expenses for share rent sometimes may influence decidedly the variations in net farm income, even though the amount of share rent varies with changes in conditions. For even though the value of share rent decreases in the same proportion as farm prices it reduces the margin of net income; consequently, where substantial amounts of other expenses remain relatively fixed, the percentage reduction in net income is likely to be considerably larger than it would have been if no share rent were paid.[7] It is true, on the other hand, that the farmer who is enlarging his farm, especially in times of high prices, will probably be less vulnerable to fluctuations in farm-product prices if he rents additional land instead of borrowing the money to buy it, since interest and loan repayments would not only decrease operating margins but would also add another item of fixed expense.

Hired labor represents a particularly large part of the expenses on large-scale farms. Most of these units are above a size that can be handled with family labor using modern machinery. Nearly 40 percent of the total farm wage bill is paid by the large-scale farms (table 6). Their labor cost averaged more than $7,000, or nearly one-fifth of their gross incomes, in 1944. On other classes of farms the wage bills are relatively small, ranging from 11 percent of total value of products on large commercial-family farms to less than 4 percent on small-scale farming units.

Operating margins are affected by other production expenses as well. Data on these other expenses are not complete, however, and the patterns among economic classes of farms are not clear-cut. But there is no apparent general tendency for the production expenses, other than hired labor, to represent a larger proportion of gross incomes on large farms than on small farms (table 24, p. 61). Selected expenditures reported by the census in 1944 for the United States are influenced considerably by differences in regional and geographic concentrations of the different classes of farms. For example, the expenses for fertilizer and lime are largest on the small family and small-scale farms which are concentrated heavily in the South. Many of the miscellaneous expenses that were omitted--such as fruit and vegetable containers, costs

[7] See data in table 10 for an illustration of this situation.

TABLE 6.--*Percentage of all labor hired, cash wages paid per farm, and percentage of farms reporting specified cash wages paid, by economic class, United States, 1945* [1]

Economic class	Man equivalents of hired labor as percentage of all labor resources	Cash wages paid percent of total	Cash wages paid per farm		Percentage of farms reporting specified cash wages paid				
			All farms [2]	Farms reporting wages	None [3]	$1 to $999	$1,000 to $2,499	$2,500 to $4,999	$5,000 & over
	Percent	*Percent*	*Dollars*	*Dollars*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Farming units:									
Large scale farms	79.8	38.7	7,262	7,696	5.6	12.5	22.3	21.1	38.5
Commercial-family farms:									
Large	42.8	24.4	1,143	1,319	13.3	47.2	26.0	10.1	3.4
Medium	27.9	22.5	368	494	25.6	63.3	9.6	1.3	.2
Small	10.7	9.6	111	215	48.4	50.0	1.5	.1	[4]
Small-scale farms	3.8	1.5	32	106	69.9	29.9	.2	[4]	[4]
Other units:									
Part-time units	6.5	.9	28	95	71.2	28.6	.2	[4]	[4]
Nominal units	6.5	2.4	46	223	79.4	19.6	.7	.2	.1
All farms	22.2	100.0	327	675	51.6	41.3	4.7	1.4	1.0

[1] Based on unpublished data from the 1945 Sample Census of Agriculture, used by permission of the Bureau of Census, except "man equivalents of hired labor as percentage of all labor." See table 19, p. 56 for basis of this estimate.

[2] Average of all farms in each class.

[3] Assumes that farms "not reporting" wages made no cash wage payments in 1944.

[4] Less than 0.1 percent.

of cotton ginning, and costs of irrigation--are especially noteworthy in particular areas and types of farm.

Power and machinery operation and depreciation and building expenses are of general importance on all classes of farms but no estimates are available from the census and these expenses are difficult to estimate by economic class from the data that are available. In general, power and machinery expenses perhaps would not be expected to be as large a proportion of the income on large farms as on small ones. Increased costs for gasoline and motor fuel, for example, often are more than offset by the output from the larger acreages that can be handled by tractor power. Tentative estimates have been prepared of total farm production expenses (excluding rent and interest) by economic class for the Corn Belt States. In this region these data indicate that expenditures represent a somewhat higher percentage of gross income on very small farms than on medium-sized farms (table 25, p. 62). Expenditures take the largest proportion of gross income on the large-scale farm.

Incomes on the small-scale and small family farms may be considered to be more stable because of the high percentage of the total farm production used in the home. An average of slightly more than one-third of the total value of products on the small-scale farms was used for family living (fig. 5). In contrast, less than 5 percent of the total value of farm products on large family and large-scale farms was for home use. This may be a rather misleading indication of financial stability, however, since cash farm expenditures frequently are almost as large as the cash farm income on the small-scale farms. Consequently, a small decline in farm prices or yields may cause a larger decline in the net cash income on these farms than on larger units. Furthermore, the reported value of farm products used in the homes is less on the small farms than on the larger farms.

A large part of the sales on small farms are from crops whose price variability has been large in the past. Dairy, poultry, and livestock, are especially important on medium and large family farms while fruit and vegetable products are a major source of income on many large-scale farms. It should be noted, however, that these differences arise primarily from the variations in geographic distribution of the respective classes of farms.

A frequently cited advantage of small farms is the relative stability in their levels of net income. But the characteristics of farms by economic class raise some questions as to whether the small-scale and small family farms in American agriculture are, in general, subject to appreciably less financial stress than are the somewhat larger units. Available evidence indicates the probability that there has been a considerable increase in fluctuations of income on large-scale farms.

Differences in Production Efficiency

Larger farms generally are considered more efficient than smaller ones. The combinations of farm resources by economic class reveal many characteristics that would make for greater efficiency of production on the larger units. Most noteworthy are the differences in the amount of land and capital available for com-

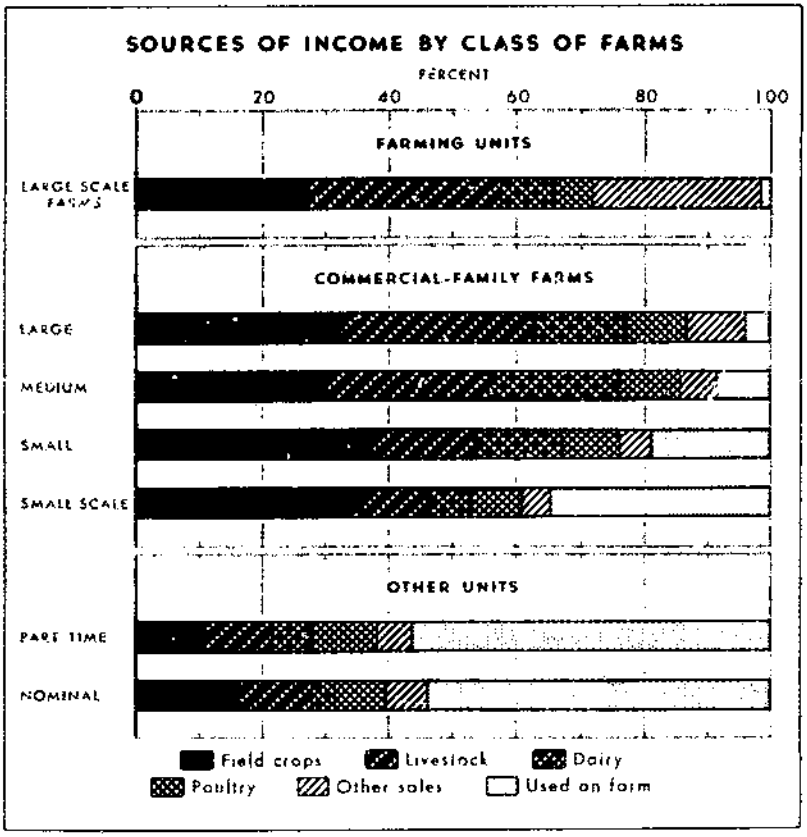

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FIGURE 5.--Income from livestock and livestock products including dairy and poultry are most important on commercial family farms. Only on large-scale farms are fruits, nuts, and vegetables, a major source of income.

bination with the available labor resources, differences in the kinds of machinery and equipment, and differences in management, although management does not lend itself easily to statistical measurement.

The combined effects of these differences in the characteristics of the production combinations can be expected to result in marked differences in efficiency. These can best be measured in terms of the relation of changes in farm inputs to changes in farm outputs.[8] Some notion of the extent of the differences in efficiency by economic classes of farming units in the Corn Belt can be gained from

[8] Part-time and nominal units are not subject to this kind of analysis. Farming operations of this type are frequently undertaken more for pleasure than for profit and would need to be considered in relation to total income.

the illustrative [illegible]s of net farm returns in 1944.[9] (table 7). Census information [illegible]ncome and expenses, supplemented by estimates of farm expense items not reported, provides a crude measure of the differences in the efficiency of production among the several classes of farming units. But interpretation is complicated by the lack of a common denominator for the inputs of capital and labor, the lack of a measure of management, and the differential effects of the unusual price relationships in 1944, as well as by difficulties in estimation. Nevertheless the wide differences in income in relation to capital and labor inputs, at least between the medium family farms and the small family and small-scale farms, appear too large to be attributed entirely to errors of estimation. They also are consistent with the decided differences in the kinds of capital available on the respective farms and the fuller employment of available family labor resources. Marked differences also may be noted with respect to differences in net farm income in relation to capital inputs on the large family and large-scale farms. But the favorable relation between wages of hired labor and farm-product prices in 1944, the lack of information on the management inputs, as well as certain other problems of estimation, should be considered carefully when drawing a conclusion from these data.

The indicated low level of production efficiency on small farms is consistent with other research results and with general observation. The tendency toward an increasing efficiency on the larger sizes emphasizes the beneficial influences of mechanization and other improved farming methods which are found to a greater extent on larger farms. Such increases in returns rest upon a complex of improvements. For example, the use of mechanical power and improved equipment permits an expansion of the size of the farming units without requiring large increases in hired labor. The investment and the current operating expense for power and equipment often are less per unit of production on the larger farms than on the small farms that are operated mainly by animal power. At the same time, production per acre may be increased by using better varieties and improved tillage. In total, these improvements can result in substantial increase in production per acre, per unit of livestock, and per worker. In many individual instances the total cost may be less for a larger output than for a smaller volume if considerable shifting in technology is involved.[10]

How much reliability can be placed upon returns to land, labor, and capital, as measured directly from available information from the census and other sources, poses a difficult question. The illustrative data for the Corn Belt shown in tables 7 and 25, pp. 25, 62, will focus some of the problems involved. It should be borne in mind, however, that the problems of estimation are somewhat simpler in this region than in many others.

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[9] In this connection see: *Differentials in Productivity and in Farm Income of Agricultural Workers by Size of Enterprise and by Regions (8). Production Functions From a Random Sample of Farms (10). Forward Prices For Agriculture (11).*

[10] See Sherman E. Johnson, *Technological Changes and the Future of Rural Life*, Joint Meeting Rural Sociological Society and the Farm Economic Association, December 1949 (Unpublished) for further discussion of this point. See also *Capital, Labor Substitution in Cotton Farming* (2) for a discussion of such shifts on cotton farms.

TABLE 7.--*Indexes of estimated net farm income, capital and labor resources for farming units by economic class, Corn Belt States, 1944* [1]

Economic class	Indexes of net farm income and resources (Average of all farming units = 100)		
	Net farm income	Capital resources	Family labor resources
	Percent	*Percent*	*Percent*
Large-scale	481	481	111
Commercial-family farms:			
Large	211	211	111
Medium	109	99	103
Small	40	49	95
Small-scale	18	23	87

[1] See table 25 for details of estimates.

The first series of problems are encountered in estimating the gross income and the farm-operating expenses. In the aggregate, census totals for both the income and the expense items are below the official estimates of the Bureau of Agricultural Economics, but no suitable basis is available for ascertaining the degree of underreporting by size of farm. Such expenses as machinery operation, machinery depreciation, and other miscellaneous items were not covered by the census and so must be estimated. These apparently total about two fifths of the expenses in several of the classes of farms. Estimated totals for all farms have been compiled by the Bureau of Agricultural Economics but no generally applicable basis is available for breaking these down by size of farm groups. Consequently, various assumptions were made in estimating these expenditures for each class of farming unit in the Corn Belt.[11] Some of the expense items reported by the census may also be misleading from the standpoint of efficiency analysis, since no inventory data were available.

In measuring differentials in production efficiency serious problems of methodology arise when gross income minus operating expense on the different groups of farms is compared to the resources used. Obviously, the absolute amounts will vary greatly, depending on price-cost relations. For instance, such returns were much larger in 1944 than in 1939. Therefore, the relation of the increase in net output to the increase in inputs by size of farm is the best indication. If either the prices of some products or the items of expenses that are especially important on some groups of farms happen to be in a favorable or unfavorable relationship the resulting relationships of input and output by size of farm will be affected accordingly.

[11] Miscellaneous operating expenses, for example, were distributed according to the proportion of the sales on various classes of farms. In view of the wide variation in type-of-farming among the size groups these estimates probably have a considerable margin of error. Expenditures for operating motor vehicles were estimated on the basis of number of tractors in each class adjusted for variations in fuel consumption by size of farm. Depreciation on motor vehicles and maintenance expenses for other machinery were distributed on the basis of per farm, value of machinery and equipment in each class of farm. The estimate of depreciation does not take account of differences in composition of machinery items in annual use of these machines on various sizes of farms nor variations among classes in value of farm use of the automobile.

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The relative level of net returns, especially on the large-scale units, may be affected by some of the assumptions mentioned previously and by the tendency for farms that have high yields or that have substantial livestock sales out of inventories to be classified in larger size groups than similar farms that have low yields or a low volume of livestock sales in the particular year.[12] The smaller size groups contain considerably more farms than do the larger size groups. The number of farms shifted to larger size groups, therefore, will not be fully compensated by shifts from the larger size groups. This will tend to increase the ratio of output to inputs on the larger size-of-farm groups. Although this tendency may not be great enough to affect significantly the quantities of resources by size of farm, it becomes much more important in analyses that require precise measurement of efficiency relationships among the size groups.

The calculations of direct returns to labor, management, and capital, necessarily require many assumptions and are subject to some bias. Although the large increase in production efficiency between the small family and medium family classes is consistent with the relatively large differences in the extent to which these groups of farmers have mechanized their production, the nature of the calculation of net returns leaves considerable doubt regarding the exact extent of this increase as well as the relative efficiency of large family and large-scale farms. Direct calculations of returns by economic class may prove to be more generally useful in analyzing problems of economic structure and stability of net incomes than in the analysis of production efficiency. A more satisfactory--although more expensive--approach to the analysis of efficiency problems that require rather precise measurements of net returns perhaps would be somewhat as follows:

(1) Use the economic classification as a framework for drawing a sample and developing information on farm acreages, land use, acreages of crops, and similar characteristics by economic class of farm.

(2) Make a field survey, collecting adequate information on usual input and output relationships on farms having resource characteristics similar to those in each economic class.

(3) Develop estimates of average income and expenses by economic class of farm on the basis of these data.

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[12] See also *Labor Productivity and Size of Farm, a statistical pitfall (13).*

Research into the production efficiency of different sizes of farms must go beyond a description of present levels of efficiency. Solution of problems confronting operators of specific groups of farms requires information on the particular adjustment opportunities that may be available to them. Adjustment problems and opportunities of operators of large farms differ decidedly from those of the operators of small farms. Opportunities for off-farm employment, for example, would appear to be of major interest in the study of adjustment opportunities on small farms but may be of minor interest in analyzing problems and adjustment opportunities on large commercial farms. Opportunities for farm adjustments on small farms are much more likely to require a complex of changes in type-of-farming, farm acreage, and kinds of production equipment, than do the adjustments that are desirable on larger farms. A meaningful size classification of farms can add to the effectiveness of the analysis of these problems by providing a framework for the focusing of significant problems and a basis for developing valuable conclusions.

MANAGEMENT UNITS IN SELECTED AREAS OF MULTIPLE UNITS[13]

A pattern of farm operation prevails in southern agriculture which is uncommon in other parts of the United States. Under this arrangement the operator usually provides the land, power, equipment, and general management for the operation, and pays a share of the crop to the tenant for his work. The entire operation is handled as a unit from the standpoint of farm organization and management. Although this type of agriculture sometimes has been called "plantation agriculture," many of the units are small, employing only one or two croppers or tenants.

Since, under this arrangement the operations include the home farm and one or more subunits (which under census definitions would be called farms) they have been designated by the census as *multiple units*. Farms in the South that are operated with family and hired labor only are called *single units*. Throughout the rest of this report, single and multiple units, taken together, are referred to as *management units;* a management unit thus includes all of the land managed by an operator whether operated as a single unit or as a multiple unit. Management units may be compared within the same area, and with operating units elsewhere in the United States.

The concept of the management unit is important in the analysis of the problems of farm organization, production efficiency, and opportunities for farm adjustments. Opportunities for adopting technological developments, for example, will tend to vary with the size of the management units rather than with the size of the component subunits. The operator makes such decisions on the basis

[13] The data in this section are based on a special tabulation for the Bureau of Agricultural Economics by the Bureau of Census. All multiple units and a sample of the single units in the selected areas were classified and tabulated. The classification procedure for multiple units differs slightly from the procedure used for single units and farms in other areas in that the value of land and buildings was not included as one of the criteria of classification. At a later date a joint BAE--Census release is planned to present the detailed information by States.

of his estimate of their effects upon the net income from the entire operation. The decision to buy a cotton picker or to make a shift toward a livestock system of farming usually changes the organization of the entire management unit. Some croppers may be no longer needed and the status of others may change.

Multiple units are associated closely with the production of the major cash crops in the South, especially, cotton, tobacco, and peanuts. On these units the machinery and work power are usually furnished by the operator. Arrangements of this sort are found in other areas of the United States but they occur much less frequently.

Complete data are not available on management units in the South. Data were tabulated from the 1945 census for multiple-unit operations in areas of heavy concentration accounting for 80 percent or more of all multiple units in the South. Tennessee, Kentucky, Texas, and Florida, are the southern States for which such data are not available in the 1945 tabulations.

Numbers and Sizes of Management Units and Census Farms in the South

The numbers and sizes of management units in the South are considerably different from the numbers and sizes of census farms. The number of units is reduced from 1.5 to 1.1 million, or approximately one-fourth for the selected multiple-unit area as a whole. Changes in the numbers of part-time and nominal units are relatively small. The largest decreases occur in the economic classes designated as small family and small-scale farms. Numbers in each of these classes are decreased by more than one-third (table 8).

The largest change occurs in the numbers in the small family class. Numbers in this class were reduced from 563,000 to 354,000 --about one-half of the total reduction. This is a further indication

TABLE 8.--*Comparison of number of management units and census farms, by economic class, selected area, 1945*

Economic class	Census farms		Management units	
	Thousands	*Percent*	*Thousands*	*Percent*
Farming units:				
Large-scale farms	7.7	0.5	12.5	1.1
Commercial-family farms:				
Large	24.5	1.6	39.8	3.5
Medium	146.7	9.5	145.5	12.9
Small	563.3	36.6	353.6	31.4
Small-scale farms	413.6	26.9	264.8	23.5
Other units:				
Part-time units	135.4	8.8	119.8	10.6
Nominal units	248.4	16.1	191.9	17.0
All farms	1,539.6	100.0	1,127.9	100.0

Unpublished data 1945 Census of Agriculture, used by permission of the Bureau of Census. Selected area includes Alabama, Arkansas, Mississippi, Louisiana, Georgia, North Carolina, South Carolina, and the selected multiple-unit areas in Virginia and Missouri. Data for multiple units in Arkansas and North Carolina relate only to the area included in the multiple-unit study. See *Multiple Unit Operations, U. S. Census of Agriculture, 1945 (20, fig. 5, page 14)*.

that many of the subunits had a total value of products above $1,200 in 1944.

Numbers of large and large-scale farms are increased, but even on a management-unit basis the proportions of all units in the large and large-scale classes in the South are somewhat below the national average. The change in the concept of a farm also has the effect of increasing the amount of land and other resources in the larger sizes of farms in the South.

The combination of subunits into management units has the effect of materially decreasing the number of farms and increasing the proportion of farms in the large and large-scale classes. Effects on the average land and capital resources per farm by economic class, however, are less noticeable (table 26, p. 63). The characteristics of the farms by economic class in terms of land and capital resources are not materially changed. The classification on the basis of management units has the effect of slightly increasing the average land and capital inputs in most of the economic classes. This is due in part to the general tendency for the multiple units to be larger. But there is some reason for believing that several of the multiple units that fall in the small commercial-family and small-scale classes represent cases in which incomes were poorly reported. It is often hard to get income data for individual subunits that are farmed by croppers.

Characteristics of Multiple Units and Single Units

Multiple and single units differ in several important respects. Numerically single units are much more important. However, the multiple units account for a substantial part of the resources and production. Approximately two-thirds of the multiple units are classified as medium, large, and large-scale. Only about one-tenth of the single units fall in these classes (table 27, p. 64)).

Nearly three-fifths of the single units are in the small-scale and small family classes, characterized by small acreages of land and low capital investments and small volumes of production. Another one-third of the single units fall into the part-time and nominal classes. The relatively small number of single units in the larger size classes is related in part to the prevailing type of farming and production methods. With the prevailing techniques only small cotton and tobacco farms can be operated with operator and family labor alone. Partly because of the financial risks involved in an organization that requires much hired labor, cotton and tobacco farmers who operate the larger units tend to use cropper labor and so are classed as multiple units.

More than 90 percent of the medium, large, and large-scale multiple units were classified as field-crop types in 1945 (table 28, p. 64). The percentages are somewhat lower for the multiple units that fall in the other economic classes, primarily because of the increase in the number of farms classified as family living.

About half of the 987,000 single units in the selected area were classified as field-crop farms. Another 165,000 or approximately one-third of these farms, were classified as subsistence or family-living farms. Most of these are in the economic classes designated as part-time, nominal, and small-scale. The few large-scale single units are predominately types other than cotton and tobacco.

The organization of labor on single and multiple units is of course quite different since the multiple unit, by definition, depends partly or entirely on cropper or tenant labor. The best available representation of the amount of this labor is the number of subunits in the multiple units. It must be remembered, however, that subunits usually include the home farm of the multiple-unit operator. The number of subunits operated by tenants and croppers, therefore, would be approximately 14 on the large-scale units, 4 on the large farms, 2 on the medium family farms, and 1 on the other classes of farms (table 29, p. 65). In addition to the labor provided by these tenants and croppers considerable wage labor is hired on the larger farms.

The term "large family farm" is not a very suitable description of many of the multiple units in this class. As now organized, the operator's labor constitutes a relatively small part of the total labor force on many of them. In general, the labor requirements are considerably larger on the multiple units than on the single units of comparable size. A much larger proportion of the multiple units follow a cotton or tobacco system of farming.

Effects on Farm Size in United States and Selected Regions

Shifting from a census-unit basis to a management-unit basis does not change materially the over-all United States picture of the relative proportion of the farms in each economic class (table 9). But there would be a slight increase in the proportion of the units classified as medium or larger and a decrease in the proportion classified as small commercial-family and small-scale. On a regional basis the classification of farms on a management-unit basis has a substantial effect in the Delta, the Southeast, and the Appalachian region. A few multiple units were tabulated in Missouri but the number was small and would have a negligible effect on the numbers and sizes of farms in the Corn Belt.

Appraisal of the nature of the regional effects of this change in the concept of a farming unit is complicated by the fact that in some areas, especially in the Appalachian region, information is not available on management units. Approximately two-fifths of the cropper units in the Appalachian region are located in these areas. Consequently, no comparisons are shown for the Appalachian region as a whole. Effects on the numbers and sizes of units in the Southeastern and Delta areas are similar to those for the selected area (table 30, p. 66). The proportion of multiple units are somewhat higher in the Delta than in the Southeast and so the extent of change is somewhat greater.

LARGE-SCALE FARMS

Much has been written about large-scale farming. The term "large-scale farm," however, has somewhat different meanings among different people. Some use the term as synonymous with "factory type" farms to indicate those farms that employ many workers on highly specialized operations. Sometimes the term is used to cover any farm that uses a great deal of hired labor. Others use the term to designate unusually large farms regardless of the labor employed. It is in this last-mentioned sense that the term is used in this publication. Large-scale farms are defined in terms

TABLE 9.--- *Effect of using management unit on the number of farms and acreage of farm land, by economic class, United States, 1945*[1]

Economic class	Number of farms		Percentage of farms		Percentage of farm acreage	
	Census	Using management units in the selected area	Census	Using management units in the selected area	Census	Using management units in the selected area
	Thousands	*Thousands*	*Percent*	*Percent*	*Percent*	*Percent*
Farming units:						
Large-scale farms	102.1	106.9	1.7	2.0	25.8	26.4
Commercial-family farms:						
Large	408.9	424.3	7.0	7.8	18.3	18.8
Medium	1,173.0	1,171.7	20.0	21.5	24.1	24.6
Small	1,661.9	1,452.2	28.4	26.6	18.1	17.3
Small-scale farms	923.5	774.7	15.8	14.2	5.8	5.3
Other units:						
Part-time units	602.2	586.7	10.3	10.8	2.3	2.2
Nominal units	987.3	930.8	16.8	17.1	5.6	5.4
All farms	5,858.9	5,447.3	100.0	100.0	100.0	100.0

[1] Management units for selected area. Based on unpublished data 1945 Census of Agriculture, U. S. Bureau of Census. Selected area includes Alabama, Arkansas, Mississippi, Louisiana, Georgia, North Carolina, South Carolina, and the selected multiple-unit areas in Virginia and Missouri. Data for multiple units in Arkansas and North Carolina relate only to the area included in the multiple-unit study. See Multiple Unit Operations, U. S. Census of Agriculture, 1945 (*20, fig. 5, p. 14*).

of the total size of the business, not in terms of the amounts of particular inputs such as hired labor. This definition is consistent with general usage of terms such as scale or size of farm.

Large-scale farms, as classified in the 1945 census, includes primarily farms reporting a value of products of $20,000 or more in 1944. In addition, certain other farms were included when characteristics indicated that they normally would be classified as large-scale on the basis of value of products. The transfer of farms on the basis of the value of land and buildings criteria and individual examinations of special characteristics had much more effect on the numbers of large-scale farms than on the numbers in other economic classes.

The large-scale farms covered by the regular census include only the farms operated by family and wage labor. In most of the South, however, the special tabulation of management units in the multiple-unit area makes information available on large-scale tenant plantations.

The increase in the average size of commercial farms in many areas, over the last few decades, has alarmed many people. Questions are being asked about large-scale farms, as: How important are large-scale farms? Where are they found? What types of products are grown? Are they more efficient? What conditions encourage and discourage large-scale farming?

Some of these questions are difficult if not impossible to answer fully, on the basis of available information. In some cases facts can be provided which will help when the questions are studied but the conclusions drawn also will depend on attitudes toward farming as a way of life. It is extremely important when appraising these questions, therefore, to keep in mind the limitations of the data.

Production Efficiency and Financial Risks

The comparative efficiency of large-scale farming is an especially difficult question to evaluate. We know that returns may vary with size of farms because of such things as:

(1) Differences in physical efficiency of different kinds and sizes of machinery, equipment, and farm buildings.

(2) Extent to which some key items in production, as machinery or buildings, require large quantities of land or labor for efficient operation.

(3) Difficulties in large operations due to an increase in the requirements for supervision and coordination, as well as gains from the specialization of labor.

(4) Marketing, financial, and research advantages, of the larger units.

In respect to the differences in kinds and sizes of machinery and equipment on farms and their requirements, two points deserve emphasis. In the first place, gains from these sources continue over a wide range of size of units, but gains above a size which permits the use of a reasonably efficient combination often tend to become small. In the second place, there is considerable variation by geographic areas and type of farm in the size of farm at which increased efficiency, due to better utilization of these production items, becomes relatively small. Shifts from horse to tractor power, from binder to combines, and other shifts in

technology, have been the most notable source of gains in physical efficiency. With few exceptions, however, principal machines are made in sizes that are suitable for use on commercial-family farms.

In most areas, however, some further gains are possible through using larger sizes of machinery. Farmers and agricultural technicians often find the small tractors, combines, and other similar items of equipment, are less efficient than somewhat larger machines. On a large wheat farm, for example, two large tractors may be considerably more efficient than three smaller ones.

With respect to the corn-livestock farms of eastern Nebraska, Scoville concludes that per acre investment in machinery and machine-operating costs decline with increasing size of farm. Although the rate of decline in costs is high with small acreages, a full-sized family-operated farm is large enough to permit reasonably efficient utilization of equipment. Decreases in machinery costs per acre become relatively insignificant for farms that are larger than a two-man unit.[14]

The variations in the size of farm at which increased efficiency due to better utilization of productive factors becomes relatively small is often associated with the nature and size of the machinery and equipment needed in production. In some cases the size of a major machine or other item of productive equipment calls for relatively large inputs of other resources. For example, efficient utilization of the modern cotton picker in the Mississippi Delta would require, perhaps 200 or more acres of cotton (22, p. 37). Such a unit would employ several laborers or tenants. In other situations the units of machinery are small relative to common sizes of farms. Until recently, in many cotton areas, for example, increasing the size of business commonly entailed simply using more mules, more half-row equipment, and more hoes.

The production conditions--including type of farming, technology, climate and soil conditions, and topography--all affect the kinds and sizes of equipment needed. Advantages from better utilization of machinery and equipment items, for instance, probably are important over a wider range of farm size on wheat than on tobacco farms. In cotton areas in which the conditions are suitable for using a cotton picker, the advantages to be derived from better utilization of machinery will be important over a wider range in farm size than in areas where the only practicable method of harvesting is by hand.

In industry, and to some extent in agriculture, the expertness that comes from concentrating upon a limited number of processes often leads to increased productivity. In many types of agriculture, however, this is soon counterbalanced by the difficulties of management and control. Difficulties of coordination vary materially with production conditions. But these relationships are difficult to measure quantitatively. It is known, for example, that the ease of planning and managing large operations is materially affected by such things as the extent to which operations can be standardized, the stability in farming practices, the yields and prices, and the acreages over which the supervision is spread. Management of large-scale operations, for instance, is perhaps somewhat easier on a

[14] *Scoville, O. J. Size of Farm and Utilization of Machinery, Equipment,* and Labor. Bur. Agr. Econ. p. 136 (unpublished).

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cotton farm in California where the practices do not need to be varied greatly from year to year and labor is concentrated on a smaller acreage than is the management of a large-scale farm in the general-farming areas of the Midwest, where the acreage per unit of labor is much larger and the farm organization and practices are often more variable and complex.

Operation of a large-scale unit frequently means that the farmer's net income will be somewhat more subject to external conditions than would be the case if he operated a smaller family-sized farm. This is particularly true where large increases in payments for hired labor, interest, and rent, are involved. The distribution of large-scale farms may be presumed to be related to the relative degree of fluctuations in income by large-scale units and to the level of capital accumulation and education of the farm operators in the area. On the commercial-family farm, the farmer generally looks on his farm as a home and a vocation as well as a business, which accentuates the disagreeableness of facing the losses that might result in business failure.

The variation in farm incomes due to changes in yields and prices varies materially with the production conditions in the different areas and on different types of farms. The variability in the risks

TABLE 10.--*Effects of 15-percent reduction in farm prices received on operator's net farm income, commercial-family and large-scale farm, wheat-small grain-livestock type, Northern Plains, 1947* [1]

Item	Unit	Commercial-family [2]			Large-scale [3]		
		1947	15 percent reduction in farm prices	Percentage change	1947	15 percent reduction in farm prices	Percentage change
Gross farm income	Dollars	13,355	11,468	- 14	38,094	32,590	- 14
Farm expenses	do.	2,064	[4] 2,052	- 1	11,612	[4] 11,578	0
Net farm income	do.	11,291	9,416	- 17	26,482	21,012	- 21
Rent and interest paid	do.	2,509	2,075	- 17	13,018	11,051	- 15
Operator's net farm income	do.	8,782	7,339	- 16	13,464	9,961	- 26

[1] Assumes all land above the 230 acres owned on the family-operated farm is operated on share rentals basis, and additional capital is borrowed.

[2] Based on unpublished data on farm returns and costs, commercial-family operated wheat-small grain-livestock farms, Northern Plains. This farm had 532 acres of land, 302 acres of harvested cropland, and paid $328 for hired labor in 1947. See *Farm Production Practices, Costs and Returns (15, p. 104)*, for definitions of terms.

[3] Unpublished data Bureau of Agricultural Economics. Data on farm organization, yields, and production were based on schedules of representative large-scale units taken in survey of this area in 1948. This farm had an average of 1,500 acres of land, 950 acres of harvested cropland, and paid $1,045 in hired wages.

[4] Assumes farm-grown seeds used for small grains. Expenses for other seeds were reduced 10 percent, prices of livestock purchased by 15 percent, feed concentrates by 5 percent, and other farm production expenses remained unchanged with the 15 percent reduction in farm prices.

of large-scale farming helps to explain why large-scale farming is more important on some types of farms than on others, but it is of most significance in areas where large-scale farming represents mainly an enlargement of family farms.

Fluctuations in farm prices or production are reflected in somewhat larger changes in operator's net farm income, if costs remain relatively fixed. The individual who has limited resources and who is increasing the size of his unit is particularly affected by changes in prices. For example, on a commercial family-operated farm devoted to wheat, small-grain, and livestock in the Northern Plains, a decline of 15 percent in farm prices, with cost rates remaining the same, would reduce net incomes about 16 percent (table 10). On this farm most of the capital and two-fifths of the land is owned; the remainder of the land is operated on a share rental basis. But on a large-scale unit in the same area the operator's net farm income would be reduced by more than one-fourth if there were a 15-percent reduction in farm prices, and additional labor is hired, additional land operated on a share rental basis, and other additional capital is borrowed.

It will be noted that on the large-scale farm the relative reduction "operator's net farm income" is greater than the reduction in "net farm income." Although the net rent and interest paid by the operator in this example would be reduced slightly more than in proportion to farm prices or gross farm incomes, the operating margins are decreased substantially.

The wide variation in production conditions in the United States and the associated differential effects of farm size, and such things as production efficiency and financial risks, may be regarded as influencing decidedly the relative number of large-scale farms. But it is to be remembered that a range in the size of farms is desirable in every area to fit the varying abilities of the individual operators. There is no one size of farm that is most efficient from the standpoint of all farm operators in an area or locality. Furthermore, the most efficient size of unit generally will vary through the life of the individual farmer.[15]

Large-Scale Wage-Operated and Highly Mechanized Units

In analyzing the kinds of large-scale farms and their distribution, the availability of data makes it convenient to discuss the large-scale unit as classified by the census and then to supplement this with a discussion of tenant plantations and single units in the South. Large-scale farms may be grouped into three broad types from the standpoint of labor organization.

(1) Large-scale highly mechanized units using relatively little labor.

(2) Large-scale wage-operated units.

(3) Large-scale tenant plantation or multiple units.

The regular census data pertain generally to the farms that are operated as highly mechanized or wage-operated units, although in the South they may sometimes include also parts of tenant plantations operated by hired or family labor. Large-scale farms, as classified by the census, are most common in the Mountain and

[15] For a discussion from the standpoint of factors affecting prevailing sizes of farm, see *Farm Management* (4, pp. 423–433).

Pacific regions (table 31, p. 67). In the Pacific region large-scale units represent about 9 percent of the total number of farms and they account for nearly three-fifths of the gross value of farm products. In the Mountain region they represent about 5 percent of the farms and account for 38 percent of the value of products. In other regions both the proportion of the farms classified as large-scale and the amount of resources controlled by these units are much smaller.

The Pacific region has the highest percentage of farms classified as large-scale in each of the specified types (table 11). However, nearly one-half of the large-scale farms in the Pacific region are of the vegetable, fruit and nut, and horticultural types. Another

TABLE 11.—*Number of large-scale farms by type of farm and by regions and the percentage that large-scale farms are of all farms of that type in each of the specified regions, 1945* [1]

Region	All types [2]	Field crops	Dairy	Poultry	Livestock	General	Fruits and veg.[3]	Other types [4]
	Number	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Northeast States	9,687	1,681	2,465	1,129	552	750	2,772	38
Corn Belt States	19,629	5,062	438	632	11,189	1,217	1,013	77
Lake States.....	3,073	499	270	191	999	338	753	20
Appalachian States.....	4,020	1,021	813	281	892	273	735	12
Southeast States	1,397	823	672	89	439	203	2,115	56
Delta States....	3,765	2,151	186	43	396	37	194	58
Southern Plains States.....	11,581	4,175	571	151	5,525	323	419	130
Northern Plains States.....	9,539	4,626	46	38	4,492	198	69	50
Mountain States.	10,619	3,741	356	148	5,479	276	569	50
Pacific States..	25,020	6,850	2,775	1,051	2,593	625	10,984	142
United States..	100,912	32,232	8,592	4,056	32,556	4,240	19,613	623
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Northeast States	1.8	3.8	1.8	2.0	2.5	1.6	6.5	[5]
Corn Belt States	1.9	3.2	.5	1.1	3.2	.6	5.4	.1
Lake States.....	.6	1.1	.1	.8	1.4	.3	4.5	[5]
Appalachian States.....	.4	.2	3.0	1.0	1.2	.4	5.1	[5]
Southeast States	.7	.2	9.5	.7	2.4	1.0	7.2	[5]
Delta States....	.6	.7	1.4	.5	1.8	.1	1.5	[5]
Southern Plains States.....	2.2	2.1	2.9	.6	7.7	.5	2.1	[5]
Northern Plains States.....	2.4	2.9	.4	.3	1.3	.2	4.2	.7
Mountain States.	5.1	6.2	1.9	1.8	9.9	1.3	1.9	.2
Pacific States..	9.2	20.5	7.4	4.4	10.0	4.4	14.4	.2
United States..	1.8	1.7	1.5	1.5	1.0	.6	8.1	.1

[1] Unpublished data 1945 Sample Census of Agriculture, used by permission of U. S. Bureau of Census.

[2] Excludes large-scale farms not classified by type.

[3] Includes fruits and nuts, vegetable and horticultural specialty types of farms.

[4] Forest products and subsistence types of farms.

[5] Less than 0.05 percent.

one-fourth are classified as "field crop farms," many of these are irrigated cotton, sugar beet, and potato farms. In the Mountain States more than 85 percent of the large-scale units are of field-crop and livestock types. These farms would include sheep and cattle ranches and farms growing wheat, potato, sugar beets, and other irrigated crops. It would seem probable that production conditions on these types of farms are more conducive to large-scale farming than is true in some other parts of the United States.

About three-fifths of the large-scale farms paid cash wages of $2,500 and over, in 1944, for the United States as a whole (table 32, p. 69). Many of the remaining two-fifths--or approximately 40,000 large-scale units--were operating highly mechanized farms. This type of organization was most common in the Corn Belt and the Great Plains where most of the large farms are of the general livestock and cash-grain types. The percentage of the large-scale units paying less than $2,500 in cash wages, in 1944, varies from 70 percent and 62 percent in the Corn Belt and Northern Great Plains to 26 percent or less in the Northeast, the Southeast, the Delta, and the Pacific region. The reasons for the small proportion of large-scale units using large amounts of hired labor in the Corn Belt and Northern Great Plains is partly technological. Less labor is required to operate large farms of the types common in these regions than is required to operate the types of farms most common in the Pacific region.

In general, the large-scale farms differ materially from the large and medium commercial-family farms in respect to the proportion of them that employ large amounts of hired labor. About 60 percent of the large-scale farms paid $2,500 or more for hired labor, in 1944. In contrast, only 13 percent of the large commercial-family farms paid more than $2,500 in wages that year. But these percentages should not cover up the wide variation in both groups in respect to the type of labor organization. The number of farms paying more than $2,500 in wages was about the same in both groups. Further, the variation among regions and types of farms is great. The labor organization varies materially with the degree of mechanization of the production process for the particular agricultural product and area.

Large-Scale Management Units in the South

In the Southern States it is necessary to consider the large-scale tenant plantation as well as the large-scale wage and family-operated units, when appraising large-scale farming. The recent tabulations of farms on a management-unit basis provide this information for most of the Southern States. The classification of farms in the South on this basis increases substantially the number and percentage of farms classified as large-scale, especially in the States where the plantation system is most common. The proportion of the farms classified as large-scale remains low, however, in comparison with other areas.

In Mississippi, for example, only about 1.5 percent of the management units were classified as large-scale, and in other States of the South the percentage was even lower. This is accounted for partly by the low productivity per man, which means that many plantations having several croppers failed to classify as large-scale units in terms of the value of the output. Most of the large-

scale units in the South are multiple units that use cropper or tenant labor (table 33, p. 69).

The multiple or tenant plantation units generally are organized to produce cotton or tobacco. Until recently at least, the production requirements of these crops have been of a type that is relatively susceptible to centralized planning. The machinery has been simple, the practices have fluctuated little from year to year because of climatic conditions, and crops have been relatively intensive in their use of labor and land. In addition, the payment of wages in the form of a share of the crop has reduced the financial risks materially. Technological changes that encourage diversification and mechanization are gradually altering this picture and increasing the advantages of mechanized farms operated primarily by family labor.

Trends in Large-Scale Farming

There has been some growth in the number of large-scale farms counted by the census whether measured by acres or by total value of products. Figure 6 indicates the trend in numbers of very large farms as measured by total acres of land and adjusted value of products.[16] This increase has stemmed largely from technological

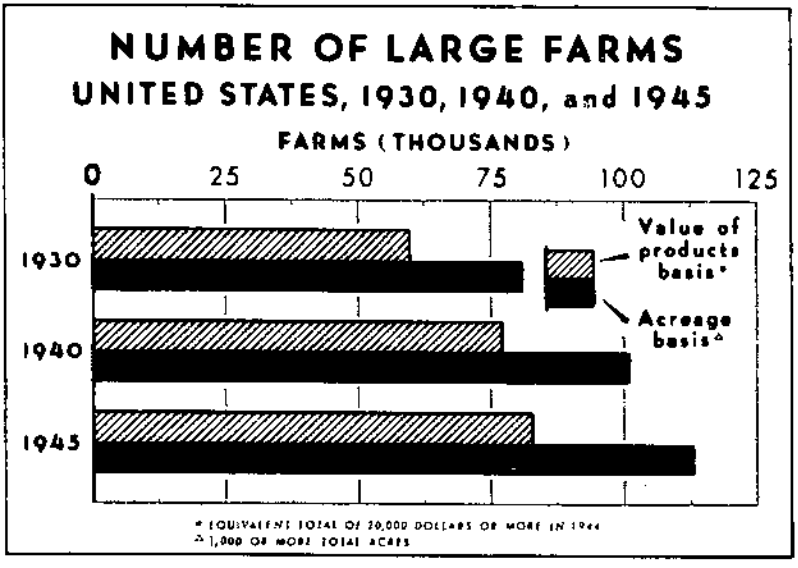

FIGURE 6.--Numbers of large farms counted by the census have increased somewhat over the last 15 years with the progress of mechanization and other technological improvements.

[16] Derived from U. S. census data on number of farms by acreage and value of product groups. Value of product groups were adjusted to 1944 levels on the basis of the total value of products reported for all farms in these years. See footnote 4 page 8.

changes favorable to the operation of large-scale, highly mechanized units in some areas. The trends in farms operated primarily by hired labor are less distinct and apparently vary by regions. Available evidence indicates that there has been a long-term downward trend in the number of large-scale units operated primarily by wage labor in the Corn Belt and Great Plains and an upward trend in the Pacific region. Production conditions and the economic structure of large-scale units in areas where a high degree of mechanization is possible perhaps discourage an increase in size of farm much above that which can be operated with family labor. Not only are management and coordination relatively difficult under these conditions but the possibilities of losses from unfavorable conditions are accentuated when the labor to operate the additional units of machinery must be hired.

A significant decrease in the number of large-scale tenant plantation units is indicated by available data (table 12). Comparison of the number of tenant plantations having six or more subunits in 1910 in selected areas with the number having five or more subunits in 1945 in similar areas indicates a decrease of approximately two-fifths. Although the data are not strictly comparable, it would appear that they perhaps understate rather than overstate the rate of decline. The decline has been most rapid in the Southeastern States.

COMMERCIAL-FAMILY FARMS

The commercial-family farms span a wide range from the standpoint of size. They include units from $1,200 to $20,000 total value of products sold and used in 1944. From a national stand-

TABLE 12.--*Number of plantations reporting specified numbers of tenants in 1910, in selected areas and numbers of multiple units reporting five or more subunits in 1945 in similar areas* [1]

Area	Selected counties 1910			Similar areas 1945 [3]		
	6 or more subunits [2]	11 or more subunits [2]	21 or more subunits [2]	5 or more subunits	10 or more subunits	20 or more subunits
Three Southeast States.....	19,019	5,519	1,166	8,837	1,686	281
Three Delta States	13,114	5,442	1,932	11,067	4,497	1,804
Total six States	32,133	10,961	3,098	19,904	6,183	2,085

[1] Derived from data U. S. Census of Agriculture 1910 *(16)* and Multiple Unit Census 1945. *(20)*

[2] The classification used by the 1910 census was on the basis of plantations having 5 or more tenants, but since each plantation included a home farm the multiple unit included 6 or more subunits. Similarly, plantations with 10 or more tenants would have 11 subunits and those with 20 or more tenants would have 21 or more subunits. Area included 35 counties in South Carolina, 70 counties in Georgia, 47 counties in Alabama, 15 counties in Mississippi, 29 parishes in Louisiana, and 23 counties in Arkansas.

[3] Based on data by type-of-farming areas within States. Although the areas are generally similar, some additional counties were included in the 1945 tabulations in cases where a considerable part of the type of farming area was included in the 1910 survey.

point the bulk of both the number of farms and the farm resources are included in the three classes of commercial family farms. These classes correspond to the general concept of a main body of farming units which remain after elimination of the relatively few large-scale units and the extremely small farming units.[17] A considerable part of agricultural research and farm policy is directly related to these middle groups of farming units.

Importance by Regions and by Type of Farm

Although the general concept of commercial-family farms is useful it has limitations and there are significant variations in the relative numbers by regions and type of farm. In some regions, as the Corn Belt and the Northern Great Plains, there is a pronounced tendency toward the concentration of farms in the commercial-family group. These three classes include the bulk of the farms and the bulk of the resources in the Midwestern areas (table 34, pp. 70-71). But this is not true in several other regions and in some smaller areas even in the Midwest. In the Appalachian, Southeastern, and Delta regions, for example, less than half of the farms were classified as commercial-family farms--one-fourth were classified as small-scale. Although the figures in table 34 are based on census farms, about the same proportions of management units were classified in the three classes of commercial-family farms.

In the Northeastern States the part-time and nominal units are numerous. Only about half of the farms were classified in the three groups of commercial-family farms. In the Pacific States the commercial-family farms account for less than half of the farms and only about two-fifths of the total value of products. In the Mountain States the bulk of the products are produced on commercial-family farms but they account for only about two-fifths of the land. Many of the large-scale units in this region are livestock ranches with large range lands.

The relative importance of the commercial-family farms in particular regions and in particular types of farms is influenced both by the conditions that tend to set an upper limit to size and the conditions encouraging a large number of small farming or residential units.

It is significant, in view of these influences, that the Corn Belt, Lake States, and Northern Plains States, account for more than two-fifths of the total number of commercial family farms (fig. 7). Residential units are relatively few in these areas, and progress in mechanization, the diversified nature of farm production, and the advantages of organizations that are adaptable to changing conditions of price and yield have been sufficient to encourage a concentration in the middle sizes. Commercial-family farms are most important in the livestock, dairy, general, and field-crop types in these regions (table 35, p. 72).

None of the circumstances that make for a large number of family-operated farms have prevented a rapid growth in the size of

[17] For studies of commercial family farms in selected areas see: *Farm Production Practices, Costs and Returns (15 pp. 75 to 101)*, and *Typical Family-Operated Farms 1930-45 (9)*, for a more detailed discussion of the organization and operation of these farms.

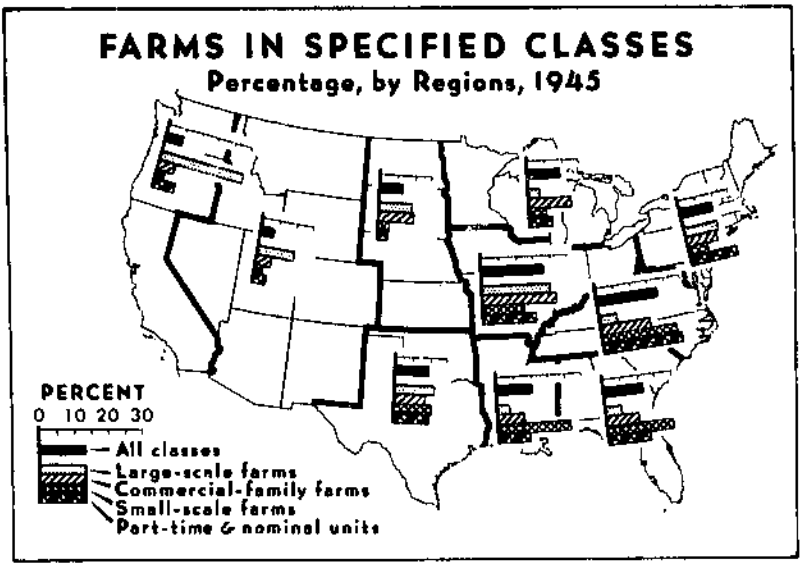

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FIGURE 7.--Significant geographic concentrations characterize the distributions of large-scale, commercial-family, and small-scale farms.

commercial-family farms in these regions. With modern power and machinery, wheat and corn producers in many areas, for example, are able to handle decidedly more land than they were a few decades ago.

The bulk of the commercial-family farms in the Corn Belt and Northern Plains States are in the medium and large classes. In the South, on the other hand, where mule power and hand labor still characterize farm production in many areas, and where the off-farm migration has not been sufficient to relieve a substantial pressure of population on the land, the small commercial farms are the most numerous. This is especially true of the field-crop types which are made up largely of cotton and tobacco farms. A high proportion of the farms in these regions are small commercial-family farms. Numbers of the medium and large commercial farms are increased somewhat in the South if management units, rather than regular census farms, are considered. But, even on a management-unit basis, more than two-thirds of them are classified as small.

The remarkable growth in the scale of operation of family farms in some areas in recent years has been associated with significant gains in efficiency. A study made by the Bureau of Agricultural Economics that summarizes information on 15 types of commercial-family farms, for example, reports that, in 1948, "Productivity (per hour of man labor) was more than 70 percent higher than the prewar 1935-39 average," *(15 p. 68)*.

Increases in productivity have stemmed mainly from the adoption of labor-saving machines and techniques, favorable weather, use of better seed and improved fertilizing and cropping practices,

and improvements in breeding, care, and feeding, of livestock. But gains in productivity have varied widely among areas and types of farms. Output per hour of man labor increased most on crop farms, except for cotton and tobacco farms on which progress in mechanization has been slow. Combination crop-and-livestock farms made somewhat smaller advances. Production per man hour of labor on livestock farms, in 1947, was still smaller, but averaged about 20 percent higher than a decade or so ago.

Characteristics of Commercial-Family Farms

Under present conditions the scale of operation and the relative importance of capital and labor in the organization of commercial-family farms varies greatly among regions and types of farms. Estimates of farm organization, income, and expenses, of different types of commercial-family farms have been prepared for 15 type-of-farming areas (*9*). The characteristics of these farms, in 1944, illustrate the wide differences of production and incomes among regions and types of farms.

At one extreme are the small cotton farms in the South. The general organizational characteristics of commercial-family cotton farms in the Mississippi Delta are, in many respects, similar to cotton farms throughout the eastern part of the United States. Investments in land and buildings and working assets are rather small compared with farms in other areas. Capital investments also are low relative to labor inputs (table 36, p. 73). With mule power and hand labor, commonly used on such farms, about 150 hours are required to harvest and grow an acre of cotton in this area. The typical commercial-family farm in the Black Prairie area of Texas represents in many respects a transition stage from small cotton farms in the eastern part of the Cotton Belt to the large mechanized units in the Southern Plains and of the western irrigated areas. Most of these farmers use tractor power for planting and cultivating but use considerable hand labor in hoeing and picking.

At the other extreme are the large cash-grain and hog-beef-fattening farms of the Corn Belt. Capital investment on these farms is several times larger than the capital investment on small cotton farms. Differences in income are somewhat less extreme as the labor used per unit of capital is much higher on the small cotton farms.

The comparison of commercial-family farms of different types and located in different regions is often needed in an analysis of the nature and kinds of problems of production adjustment. Such comparisons pose difficult problems because of the varying combinations and kinds of land, other capital, labor, and management. Data on these 15 kinds of commercial-family farms illustrate the importance of selecting a measure of size that will give the greatest degree of comparability and indicate a need for perhaps greater attention in the selection of comparable measures of sizes in studies in which results in different areas and types and sizes of farms are to be generalized.

The best measure of the relative size of the farm business of each of these types of farms is the net return to land, labor, capital, and management over a period of years. Such a measure is especially desirable because it avoids assigning an arbitrary value to

the land, labor, and management, which may not reflect the actual productivity of these factors. Because of wide differences in the combinations of labor and capital used on these farms, neither capital invested nor the labor used serves as an accurate guide as to the differences in the size or scale of operation.

Frequently it is desirable to develop a measure of the size of farm business from data available for only a single year. Any index of the size of the farm business that may be available from a cross section of characteristics in a single year has limitations. Strict comparability is impossible. But such a measure should reflect, more than labor or capital alone, the places where wide variations in types exist. But measures of returns for a single year, may be unduly influenced by unusual situations in regard to prices and yields.

Data that are strictly comparable to the census value of product sold, or to the total value of products sold and used, are not available, but the gross incomes are similar to data on the total value of farm products sold and used as given in the census. The major differences between these two measures is that the gross income is adjusted for changes in the inventories of livestock. Under the conditions that existed in 1944, the relationship between gross income and the long-term returns to labor and capital is closer than the relationship between specific inputs, such as labor used, or value of land and buildings, or total capital, and the long-term returns to labor and capital.

SPECIAL PROBLEMS OF SMALL-SCALE FARMS AND OTHER UNITS

Small-scale farms and part-time and nominal units share a common characteristic--small volume of farm production. Together these three classes comprise some 2 1/2 million farms or more than two-fifths of all units enumerated by the 1945 census (table 37, p. 74). They contribute less than 10 percent of the total farm production, however, and only 4.6 percent of the sales.

Families with no other income than that obtained from such farms probably would be considered as low-income families by almost any standard.[18] Generally speaking, farms that produced less than $1,200 worth of products in 1944 also would be too small to employ efficiently the full time of an average operator family.[19] But by no means all of the families who operate low-production farms depend primarily upon their farming. Many have substantial income from other sources. Some of these small farms probably are retirement units whose operators live from their savings. But others furnish the primary source of income and employment for a farm family.

Development of a comprehensive description of significant groups of low-production farms and the purpose of their operation, is one of the more important problems involved in providing a framework for analyzing agricultural resource use and adjustment needs. The economic classification, developed in connection with the 1945

[18] For an interesting discussion of "low-income families and economic stability" see *Materials on the Problems of Low-Incom Families (23)*.

[19] See p. 23 of this report for a discussion of the relation between farm size and efficiency of resource use.

census, marked considerable progress in this direction. Necessarily limited to characteristics available from the Agricultural Census, the distinctions between small-scale, part-time, and nominal units, in this classification, admittedly are rather arbitrary. Nevertheless, this classification provides a concrete basis for appraising the kinds of circumstances and adjustment problems confronting the families who operate each of the major groups of low-production farms.

Small-Scale Farming Units

As their comparatively low value of production ($500, to $1,200 in 1944) suggests, small-scale farming units are small in every respect, wherever located (table 38, p. 75). Although many of these farms are found in every region, nearly half of them are in the Appalachian, Southeast, and Delta States. In these regions, small-scale farms comprise from 20 to 30 percent of all census farms. Surprisingly perhaps, only about one-fourth of these units are share-cropper tracts. In fact, only in the Delta States does the percentage of cropper units classified as small-scale farms exceed that for all farms in the same region.

Judging from their operators' ages, relatively few of the small-scale farms appear to be retirement units or the operations of beginning farmers. Only one-fourth of these operators were over 65 years of age (table 39, p. 75). Another 3 percent were under 25. Comparable figures for large family farms, for example, are 8 and 2 percent, respectively. It seems significant that in the areas in which small-scale farms are concentrated most heavily, the percentage of small-scale farm operators who are more than 65 years old is considerably below the national average.

Most of the 923,000 small-scale farming units presumably provided the principal source of income and employment for a farm family although, in some cases, considerable nonfarm income may have been received from sources other than off-farm work. Few of their operators supplemented their meager farm incomes with other employment.[20] This indicates that most of the families on small-scale farms apparently are living on comparatively low incomes and their incomes generally are low because output per family is small.

Any lasting improvement in the relative income status of underemployed small-scale farm families must come from adjustments which will increase their productivity. For many this will mean transferring to nonfarm jobs, either full or part-time.[21] Only one-fourth of the farms classified as small-scale, in 1945, contained as many as 30 acres of cropland.[22] Merely to add capital in the form of machinery and livestock to so small a land base offers little promise for improving the net incomes of small-scale farmers

[20] Estimates for the Corn Belt summarized in table 25 indicate that the average net farm income from small-scale farms in 1944 was about $400--about 20 percent of the average for all farming units.

[21] Secretary Charles F. Brannan, in his statement December 15, 1949 before the subcommittee on Low-Income Families of the Joint Committee on the Economic Report *(6)* proposed several lines of public action to stimulate such adjustments. cf. p. 8ff.

[22] *Special Report, 1945 Sample Census of Agriculture (19, table 29).*

generally. And only if a substantial number of the now underemployed farm families are absorbed into nonfarm occupations will opportunities be available for those who remain to increase their efficiency and income by enlarging or reorganizing their farms.[23]

Some small-scale farmers, although perhaps in economic distress, cannot change advantageously to another occupation or enlarge their farms because of advanced age, physical handicap, or other reason. These special cases require separate consideration. Only detailed case studies, however, would reveal their numbers and particular needs. Such individual farm analyses would reveal also some small-scale farmers to be neither in poverty circumstances nor underemployed. But then, many families on small family farms and on nominal units would be found to be underemployed and in financial straits, or both, if they were appraised on an individual basis.

Notwithstanding apparent qualifying circumstances, small-scale farms reasonably may be considered the heart of the twin problems of underemployment and poverty in agriculture.[24] There is every reason to presume that low-income families and inefficiently utilized labor resources are concentrated heavily on small-scale farming units. Thus, this class of farms is a logical primary focus for research on ways and means for improving the allocation of resources between agriculture and the rest of the economy. Progress on this front would strike hard at the roots of the persistent disparity between farm and nonfarm incomes.

Part-time Units

Part-time farms are even smaller, in terms of farm production and resources, than are the small-scale units. From the standpoint of income and resource use, however, they represent a different situation. Their limited farming operations presumably are not the primary interest nor source of income for the 600,000 part-time farmers. All of them worked 100 or more days off their own farms in 1944. It seems reasonable to expect, therefore, that most of these families receive considerably higher incomes than do those on small-scale farms.

Research interest in part-time farms centers upon the nature and stability of the associated employment, and the income provided by the combination. Part-time farming generally is considered a desirable means for improving the welfare of many low-

[23] A paragraph from the report on *Agricultural Adjustments Toward An Efficient Agriculture in the South* is revealing in this context: ". . . the size of many operating units must be increased if the benefits of more efficient farm organization and operation and the advantages of mechanized production are to be attained . . . One of the conditioning factors to an increase in the size of small uneconomic units and the adoption of more efficient practices is that of easing the pressure of farm population on the land. Even though farm population had been reduced considerably by 1943 . . . it is suggested that the number of workers on farms should be still further reduced by 31 percent over the 1943 level. The excess population is more than 50 percent over the 1943 level. The excess population is more than 50 percent in some areas." (22)

[24] In *Reflections on Poverty in Agriculture*, T. W. Schultz (12) advances several thought-provoking propositions regarding the concepts and causes of rural poverty.

income farm families. The impact of such adjustments upon persons and institutions would be less severe than if transfers were made directly from farming to nonfarm employment. Relatively little is known at present, however, about the incomes of part-time farmers or how part-time farming develops or expands.

Stability of the nonfarm employment of part-time farmers becomes particularly important when considering agricultural adjustments, over a period of time. Underemployment probably is not serious among the operators of small farms who spend half or more of their time at nonfarm jobs. But they could find themselves entirely dependent upon their farming activities in the event of a major depression.

Nominal Units

The approximate 1 million farms which reported very low value of products in 1944, and were classified as "nominal units" are something of a puzzle. From the standpoint of employment and income conditions, they apparently are a mixture of the extremes of small-scale farms and part-time units, discussed in the previous sections. About one-fourth of the operators of nominal units reported working 100 or more days at other jobs.[25] Their "farms" are essentially rural residences. Among the 280,000 operators who were over 65 years of age would be found many who have retired from active work. Probably there are far more residential and retirement units than these two characteristics indicate. In their present use, residential and retirement units present no serious problems of resource use. But the next operator on one of these tracts may try to earn his living entirely from its output.

It was the improbability that a typical family would be able to live on the income from less than $250 worth of farm products that led to the exclusion of all "nominal units" from the broad groups of "farming units." But some families probably do live on such an income. How many are, in fact, as underemployed as their farm output and reported off-farm work would suggest cannot be learned from the 1945 census data. It would be a mistake, however, to exclude all nominal units from consideration in any program aimed toward improving the efficiency of resource use and the economic well-being of low-income farm families.

Family Characteristics and Adjustments

The personal characteristics of these farm families provide a primary insight into means for facilitating adjustments which would improve their productivity and income. And even the most detailed description of groups of families cannot answer adequately the crucial question: Why do not underemployed farm families move into higher paying jobs? If asked, each family probably would give a different reason--real or imagined.

This personal factor in vocational adjustment severely limits the effectiveness of programs that aim to attack the broad obstacles to off-farm migration. Nevertheless, knowledge of their

[25] See table 17, page 54 for source and for other characteristics of nominal units.

age, education, and other characteristics, which influence the desire and ability to make occupational adjustment, can indicate lines of action that would enhance the opportunities for these farm people to move into more productive employment. Study of the origin, personal characteristics, destination, and the nonfarm occupations and earnings, of persons who migrate from farms is an equally important aspect of research on resource adjustments.

Families engaged in part-time farming have two major points of significance in the present context. One relates to nonfarm jobs: What kinds of nonfarm employment are suited to combine with limited farming operations? The other concerns people: Why do some low-production farm operators supplement their meager farm incomes with off-farm work while others do not? How do they differ from those who leave farming completely for a nonfarm job? Answers to these and related questions would suggest approaches to an expansion of part-time farming as one means for reducing underemployment in agriculture.

But is an expansion of part-time farming actually in the public interest? Here we need to inquire into the employment and income provided by the combination, the stability of nonfarm employment, and particularly the opportunities provided for the children to obtain the schooling and associations conducive to their moving into gainful employment. Research in this field could be more meaningful if more were known about the development of part-time farming. Urban workers who move to "a place in the country" surely represent a different cultural group than do farmers who supplement their incomes with nonfarm work. It is this group which has the most direct significance to the study of adjustments in farm population.

This report cannot answer all the questions raised in the previous paragraphs. In fact, results of research to date will not answer fully any one of them. But they can throw some light on a few of the major aspects by drawing upon a study of data from a sample of matched population, agriculture, and housing, taken from the 1940 census schedules for 2,045 classified low-production farms in the 123 counties surveyed for the monthly report on the labor force.[46] How nearly the characteristics in these counties conform to a cross section of the United States and how the characteristics of low-production farm families would appear today, compared with those of a similar group in 1940, can be only guessed.

[46] In 1943, the Bureau of Census and Bureau of Agricultural Economics prepared cards for a sample of household living on farms and nonresident farm operator households in the 123 counties surveyed for the Monthly Report on the Labor Force; the total sample comprising approximately the equivalent of household per 1,000 in three categories in the United States. Each of the cards studied contained the principal items available from the schedules of the Population, Agriculture and Housing Census of 1940, respectively, for one farm; that is, the three schedules were matched for each farm in the sample. This cooperative study is discussed briefly in *Estimates of Farm Population and Farm Households: April 1944 and April 1940*. Series Census - BAE, No. 1(21).

Tables 13, 14, 15, and 40-43, inclusive, of this report were derived from information on the cards in this sample for farms reporting less than $520 total value of products in 1939, classified on the bases indicated by table 40, footnote 2. Each card was reviewed carefully in the process of classification and all questionable cases were eliminated from subsequent analyses. Of the 2,465 farms with a value of products of less than $520, a total of 2,042 were classified by major groups.

No more recent basis is available for a broad-scale study of the characteristics of families who operate particular kinds of low-production farms.

The groups of low-production farms used in the study of 1940 census data are not entirely comparable with the small-scale, part-time, and nominal units, defined in the 1945 economic classification. Considering the increase in the value of farm products between 1939 and 1944, the upper limit of low-production farms in 1940 was roughly comparable to that of the small-scale and part-time classes in the economic classification. However, with the help of available specific information on nonfarm wages of all family members, and other characteristics of the individual families and farms, nominal units were separated into the appropriate constituent groups. Table 40 indicates the composition of the resulting groups and the relative number and geographic distribution of farms in each group and subgroup. It will be noted that the term part-time farm refers to *all* low-production farms that had operators who reported 100 or more days work off the farm. The residential units included in this group were not identified separately in the 1945 economic classification.

"Small-scale farms" were reviewed more closely, to separate out the units used for farming purposes, than was possible on the basis of 1945 agricultural census data. All *families* reporting more income from wages (that is, all family members) than from farm-product sales were removed to a miscellaneous category "other low-production farms."[27] It is significant that the combination of rigorous appraisal for apparent incompleteness and apparent abnormality in important details and this separation on the basis of major source of cash *family* income did not eliminate nearly all of the very small farms which were classified as nominal units in 1945.

Low-production sharecropper units[28] have been considered separately from small-scale farms because of their unique vulnerability to technological displacement. Furthermore, these tracts usually are parts of larger operating units. Small-scale farms operated by persons more than 65 years old were carried as a subgroup throughout this analysis but the information usually is not shown separately in this report.

What significance can be attached to the characteristics of families on "other low production farms" is a moot question. As it now stands, this group spans an exceedingly wide range of employment and income conditions. But it can be said that the classification as a whole produced three reasonably homogeneous groups: part-time farms, small-scale farms, and low-production sharecropper units. Each has peculiar significance to the study of opportunities for resource adjustments.

Education Status.--Perhaps no other characteristic has such significance in the study of population adjustments as the educational attainment of the people who need to make these adjustments. Education furnishes a powerful stimulus to migration, particularly of younger people, out of overpopulated rural localities. It is likely

[27] Also operators who reported using other land. See notes to table 40.

[28] Reporting less than $520 in total value of products at 1939 prices, about half of the total number of farms enumerated by the 1940 Census of Agriculture were apparently in this group. (17)

to awaken both an awareness of job possibilities and a wish for the kind of living which the income from such jobs would support. In addition, schooling usually increases a person's productivity, hence increases his earning power and ability to compete successfully for renumerative nonfarm jobs. Conversely, lack of education impedes natural migration and limits the effectiveness of programs that are designed to encourage vocational adjustments. Low educational attainment unquestionably is both a cause and a consequence of low productivity and low income. In assigning cause and effect, however, one should not overlook the selective nature of the education process itself. Advancement through the higher grades is limited to a considerable extent by a person's natural ability to learn and to use schooling profitably.

The comparisons in table 13 highlight some of the more significant relations between education and resource adjustments. Families who operate part-time farms have received considerably more formal schooling than have those on other kinds of low-production farms. This is partly attributable, no doubt, to their proximity to urban centers. Unfortunately, there is no way of learning from these data how much of this apparent difference in education represents a tendency for the better educated low-production farm families to supplement their farming with other employment. It is only this positive influence of schooling which is directly significant to a study of resource adjustments.

Indications are that part-time farming provides its youth somewhat better educational opportunities than farm boys and girls have generally. On balance, the educational attainments of part-time farm youths compare rather favorably with those in nonfarm residence. Therefore, on the basis of the opportunity provided children for acquiring formal schooling there is no apparent reason to look with disfavor upon part-time farming.

TABLE 13.--*School years completed, classified farm operators and family members of specified ages by groups of low-production farms, with comparisons, United States, 1940* [1]

Class of farm and population group	Median school year completed		
	Persons 35 - over years of age	Persons 20 - 34 years of age	Persons 14 - 19 years of age
	Years	*Years*	*Years*
All classified low-production farms.	6.4	7.4	7.4
Part-time farms	7.3	8.6	8.9
Small-scale farms	6.4	7.2	7.4
Sharecropper units	4.3	5.7	5.6
Other low-production farms	6.9	7.8	8.0
Rural farm population	7.2	8.3	8.4
Rural nonfarm population	7.8	9.7	9.3
Urban population	8.1	10.6	10.1

[1] Data for classified low-production farms from a special tabulation of information for a sample of 7,000 households from the 1940 Census of Population, Housing and Agriculture used by permission of the United States Bureau of Census. See text p. 47. Data on rural farm, rural nonfarm, and urban based on published data Bureau of Census.

Two rather discouraging facts are apparent from the data on education of families on small-scale farms and sharecropper units *(21)*. First, the generally low education status of the older members suggests considerable inertia to vocational adjustments. Second, the relatively low levels of education of the younger members together with indications provided in the sample data that a substantial number of the youths on these farms have not acquired as much as 4 years of formal schooling, suggests the stagnating influences of underemployment. Low income itself handicaps the educational advancement of children in underemployed farm families. Some may fail to attend school regularly because they have inadequate clothing or are in poor health. But far more apparently discontinue their schooling at an early age in order to help bolster their family's meager income.

Small-scale farms and sharecropper units in the South present somewhat different adjustment problems. Families on small-scale farms appear to be rooted rather firmly. Technological progress in the past often has not displaced them but it has tended to worsen their relative economic position. The primary problem is how to encourage those who want to make vocational adjustments which would improve their productivity and income. Their education status is a significant indicator of their ability to make advantageous adjustments and of effective incentives. Sharecroppers, on the other hand, stand more directly in the path of technological improvements in cotton production. A great many of them almost certainly will be displaced over the next several years.[29] How can they be absorbed into other occupations? What kind of a training program would benefit them? Here we can do no more than to point out the problems created by lack of educational opportunities. They are real and complex and warrant high priority in research dealing with the small-farm problem.

Stability and Security of Tenure.--From the standpoint of stability and security of tenure, part-time farming is by no means an undesirable social institution. According to table 14, about half of the part-time farmers had been on the same farm for 6 or more years preceding 1940. This marked stability of tenure strongly suggests that if part-time farming is a step in the transition from farming to nonfarm employment, the process is a slow one. A natural counterpart of this stability of tenure is the high proportion of part-time farms that are owned by those who operate them (table 41). It would be interesting to know how and why part-time farmers acquire their units. Which comes first, farm ownership or nonfarm employment?

Insecure tenure scarcely can be considered as primarily responsible for the chronic economic distress that confronts many small-scale farm families. On the contrary, their characteristic stability and high percentage of farm ownership stand as major obstacles to effecting adjustments which require migration. Nearly 60 percent of the small-scale farmers under 65 years of age had not changed farms for at least 6 years prior to 1940. Two-fifths of them had operated the same unit for 10 or more years. This

[29] The total number of sharecroppers declined from a peak of 776,278 in 1930 to 446,956 in 1945. More than half of this reduction, 175,000 out of the total 330,060, came between 1935 and 1940. *1945 Census of Agriculture (18, V. II, ch. 3, table 5).*

suggests that there may be substantial inertia toward any adjustment that would necessitate changing their residence. These people generally do not have the habit of making changes. Their characteristic immobility probably is both a cause and a consequence of the high proportion of farm ownership among these families.

These data suggest several significant questions that warrant further study; first, why have so many of these farmers remained for a decade or more on the same inefficient farm? Perhaps the farm has not always been so small. But this we do not know. Second, why do apparently healthy, able-bodied farmers *begin* operating units which will provide them with so little employment and income? Who are they? Where do they come from? This group warrants particularly careful consideration. Many of them, perhaps, could be influenced relatively easily to make a more desirable vocational adjustment than beginning the full-time operation of an inadequate-sized farming unit.

And why did not more than one-sixth of the small-scale farmers, who owned some land, rent additional acreage? Much of the present discussion of adjustments toward more efficient operations in overpopulated areas is premised upon the assumption that small-farm operators will enlarge their units as migration progresses. But will they, unless given strong positive incentives? At least a partial answer might be found in the explanations offered by underemployed owners for not expanding their units by renting or buying more land.

Family Size and Age Composition.--Only the more direct implications of the relation between family size and age composition to adjustments on low-production farms can be covered in this report. Two characteristics seem particularly significant in this regard (tables 15 and 42).

(1) Roughly one-half of the sharecropper families and of those on small-scale farms with operators under 65 years contained four or more persons; one-fifth of them had six or more persons.

(2) Families on each of the general groups of low-production farms had an age composition roughly similar to that of the total farm population.

TABLE 14.--*Classified part-time and small-scale farms, by length of residence of present operator, 1940*[1]

Years on present farm	Part-time farms	Small-scale farms	
		All farms	Farms with operator under 65
	Percent	*Percent*	*Percent*
1 year	13.9	10.2	12.0
2 - 5 years	36.6	27.1	31.0
6 - 9 years	15.3	12.4	15.0
10 or more years	34.2	50.3	42.0
All years [2]	100.0	100.0	100.0

[1] Data from a special tabulation of information for a sample of 7,000 households from the 1940 Census of Population, Housing and Agriculture. Used by permission of the U. S. Bureau of Census. See text page 47.

[2] Farms with operators beginning operation of present farm in 1940 were not classified. See footnote 3, table 40.

Difficulty in making vocational adjustments undoubtedly varies directly with the size of family. The initial expense of moving a large family and getting established in another location stands as a major obstacle to the migration of many underemployed farm families. In addition, these families have had little chance to accumulate the necessary savings. This combination of circumstances suggests that in the absence of assistance, a great many farm children will have limited opportunity to acquire the education, the health, and the associations which would enable them to earn an income that would support an "American standard of living." The size distribution of sharecropper families assumes special significance in view of prospective technological displacements among this segment of the farm-labor force.

The sample data upon which these tables are based also indicate that a substantial number of children are to be found in families on small-scale farms operated by persons over 65 years of age. This probability further emphasizes the importance of inquiring into the particular circumstances of all low-production farm families when adjustments are being appraised. Knowledge that underemployed farm families have much the same age structure as farm families generally, tells us a lot about their ability to make the adjustments that would improve their productivity and income. These data indicate that, generally speaking, the operators of unproductive small-scale farms are not retired and are not young men just getting started in farming. Acquired skills, financial resources, education, and the other products of private and public investment in people apparently mark principal points of difference in comparison with the characteristics of the farm population as a whole. Improvements on these points should contribute most directly to progress toward the elimination of underemployment and poverty among farm people.

Off-Farm Employment of Part-Time Farmers.--This brief survey of low-production farms and families should not be left without a word on the other jobs that are associated with part-time farming. Several interesting facts are revealed in table 43. For example, work on other farms was a comparatively unimportant source of supplemental income. And relatively few part-time

TABLE 15.--*Classified low production farms by size of farm operator family* [1]

Persons in family	Small-scale farms		Share-croppers	Part-time farms	Other low production farms
	All farms	Farms with operator under 65			
	Percent	*Percent*	*Percent*	*Percent*	*Percent*
1	8.2	6.6	2.0	2.1	5.9
2	28.5	23.6	23.0	16.1	20.5
3	20.5	20.0	20.7	18.5	19.3
4	14.6	16.0	17.5	20.1	17.5
5	10.6	12.7	11.7	14.3	13.1
6 or more	17.6	21.1	19.1	28.9	23.7
All sizes	100.0	100.0	100.0	100.0	100.0

[1] Data from a special tabulation of information for a sample of 7,000 households from the 1940 Census of Population, Housing and Agriculture, used by permission of the U. S. Bureau of Census, see text p. 47.

farmers, in 1939, were employed as "laborers" in nonfarm industries. This is particularly true of those who devoted essentially their full time to nonfarm jobs. Most of those engaged in other occupations were craftsmen, operatives, and other related kinds of industrial workers.

Indications are that a high percentage of the "laborers" (except farm) were employed on emergency public works projects. It would be helpful from the standpoint of encouraging vocational adjustments to know how many of these persons had been engaged previously in nonfarm work. Did they seek W. P. A. jobs because they were "unemployed" in their nonfarm occupation or to supplement their farm earnings? The low entry-skill requirement would have been conducive to the latter movement. But, probably, many were experienced workers temporarily out of work.

A comprehensive study of the nonfarm jobs of part-time farmers could provide real insight into the development of part-time farming. But much of the supplemental information needed for such a study is not now available. A part of it could be obtained from a survey covering a period of years which would be aimed toward explaining existing situations in terms of changes through time. Recent developments in part-time farming apparently have been of two kinds: (1) Movement of people employed in industry into rural residences with a small farm acreage, and (2) increased numbers of small farm operators supplementing their farm incomes with off-farm work. Knowledge of the relative importance of each of these developments and the kinds of nonfarm occupations associated with each becomes particularly important in appraising part-time farming as an adjustment alternative for underemployed farm families.

The conditions conducive to the development of a stable and efficient part-time farming economy well may differ significantly between parts of the country. Characteristics of farming, the people themselves, and the concentration of industry undoubtedly are among the chief factors influencing the development and desirability of part-time farming in a particular locality. Comparatively little specialized research has been done on the economics of part-time farming--too little, certainly, to answer many of the questions being raised with increasing frequency as the course of economic development brings agriculture into ever closer relation with other segments of the economy.

APPENDIX

TABLE 16.--*Number of farms and information used in classifying farms by economic class, 1945* [1]

Economic class	Number of farms	Information used in classifying farms		
		Value of products	Value of land and buildings	Work off farm by operator
	Thousands	*Dollars*	*Dollars*	*Days*
Farming units:				
Large-scale farms	102.1	(a. 20,000 and over	15,000 and over	--
		(b. 8,000 - 19,999	70,000 and over	--
Commercial-family farms				
Large	408.9	(a. 8,000 - 19,999	Under 70,000	--
		(b. 3,000 - 7,999	30,000 - 69,999	--
		(c. 20,000 and over	5,000 - 14,999	--
Medium	1,173.0	(a. 3,000 - 7,999	Under 30,000	--
		(b. 1,200 - 2,999	20,000 - 29,999	--
		(c. 20,000 and over	Under 5,000	--
Small	1,661.9	(a. 1,200 - 2,999	Under 20,000	--
		(b. 500 - 1,199	8,000 - 19,999	--
Small-scale farms	923.5	500 - 1,199	Under 8,000	Under 100
Other units:				
Part-time units	602.2	250 - 1,199	Under 8,000	100 and over
Nominal units [2]	987.3	(a. Under 500	Under 8,000	Under 100
		(b. Under 250	Under 8,000	100 and over
		(c. Under 500	8,000 - 19,999	--
		(d. Under 1,200	20,000 - 69,999	--
		(e. 1,200 - 2,999	30,000 - 69,999	--
		(f. Under 8,000	70,000 and over	--

[1] In addition certain farms were selected for individual examination and classification. For details see *Special Report 1945 Sample Census of Agriculture (19 p. 16)*.

[2] Categories a, b, and c account for about 96 percent of the farms classified as nominal.

TABLE 17.--*Selected characteristics of nominal units, United States, 1945*

Item	Number of farms
	Thousands
Under 10 acres [1]	651
Operators reporting work off farm [2]	306
Operators reporting 100 days or more work off farm [2]	233
Operators over 65 years of age [2]	261
Nonresident operators [2]	121
All nominal units [1]	987

[1] *Special Report 1945 Sample Census of Agriculture (19, table 29)*.

[2] Unpublished data, 1945 Sample Census of Agriculture, used by permission of the Census.

TABLE 18.--*Comparison of average farm acreage, value of implements and machinery, and net income of farm operators from farming for all census farms and for farming units, by regions, 1944*[1]

Region[2]	Farm acreage		Value of implements, and machinery		Operator's realized net income from agriculture and Government payments	
	All census farms	Farming units [3]	All census farms	Farming units [3]	All census farms	Farming units [3]
	Acres	*Acres*	*Dollars*	*Dollars*	*Dollars*	
Northeast	99	129	1,290	1,874	1,795	2,495
Corn Belt	136	163	1,156	1,443	2,775	3,410
Lake	139	158	1,501	1,842	2,595	3,085
Appalachian	79	97	304	419	1,435	1,915
Southeast	102	123	326	410	630	800
Delta	80	89	371	446	1,360	1,675
Southern Plains	327	432	745	983	2,040	2,610
Northern Plains	463	497	1,719	1,866	3,075	3,350
Mountain	1,160	1,187	1,473	1,877	3,365	4,205
Pacific	257	361	1,365	1,914	4,675	6,225
United States	196	248	899	1,163	2,218	2,810

[1] Derived from "*Net Income of Farm Operators from farming, by States, 1943-44.*" *(14, July 1946)* and *Special Report Sample Census of Agriculture (19, pp. 120-159).*

[2] States included in regions are as follows: *Northeast:* Maine, N. H., Vt., Mass., R. I., Conn., N. Y., N. J., Del., Pa., Md. *Appalachian:* Va., W. Va., N. C., Ky., Tenn. *Southeast:* S. C., Ga., Fla., Ala. *Delta:* Ark., La., Miss. *Corn Belt:* Ohio, Ind., Ill., Iowa, Mo., *Lake:* Mich., Wis., Minn. *Northern Plains:* N. Dak., S. Dak., Nebr., Kans., *Southern Plains:* Okla., Texas: *Mountain:* Mont., Idaho, Wyo., Colo., N. Mex., Ariz., Utah, Nev., *Pacific:* Wash., Oreg., and Calif.

[3] Includes large-scale; large, medium, and small commercial-family farms; and small-scale farms.

TABLE 19.--*Estimated man equivalents of available operator and family labor and of labor hired, and capital per man equivalent of all labor by economic class, United States, 1944* [1]

Economic class	Family labor	Wage labor hired	Total labor resources	Investment per man equivalent
	Man equivalents	*Man equivalents*	*Man equivalents*	*Dollars*
Farming units:				
Large-scale farms	1.4	5.8	7.2	13,387
Commercial-family farms				
Large	1.4	1.1	2.5	13,457
Medium	1.4	.4	1.8	8,330
Small	1.3	.2	1.5	4,562
Small-scale farms	1.2	.1	1.3	2,324
Other units:				
Part-time units	.5	[2]	.5	5,914
Nominal units	.9	[2]	.9	4,292
All farms	1.2	.3	1.5	6,945

[1] Estimated. Available operator and family labor based on population over 14 years of age on farms by economic class adjusted for nonoperator families, work off the farm by the operator, sex and age differences in availability for farm work. In this calculation, operators over 65 years were estimated at 0.4 man equivalents; other operators 1.0 man equivalents minus man years of work off the farm; other males over 16 at 0.7 man equivalents, and females over 16 at 0.2 man equivalents. Man equivalents of wage labor hired are based on total wage bill by economic class and wage rates by States, adjusted for wage rate differentials by size of farm.

[2] Less than 0.1 of one man equivalent.

TABLE 20.--*Percentage of farms reporting specified facilities, by economic class, United States, 1945*[1]

Economic class	Tractor	Auto	Truck	Electricity	Telephone	Running water	Kitchen sink[2]	Mechanical refrigerator	Power washer
Farming units:	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Large-scale farms	86	91	82	80	72	76	84	78	80
Commercial-family farms:									
Large	86	91	58	76	67	58	75	64	81
Medium	69	84	34	62	50	38	59	42	71
Small	30	62	18	41	27	22	34	24	40
Small-scale farms:	9	39	10	28	15	13	20	14	20
Other units:									
Part-time units	14	65	15	58	26	35	45	38	48
Nominal units	9	43	10	41	21	24	33	26	30
All farms	34	62	22	48	32	29	42	32	46

[1] In farm dwelling. *Special Report 1945 Sample Census of Agriculture. (19, table 29, pp. 120-159),* except as noted.

[2] Based on unpublished data from 1945 sample Census of Agriculture, used by permission of the Bureau of Census. Data for kitchen sink with drain, mechanical refrigerator, and power-driven washing machine relate only to farms with resident operators.

TABLE 21.--*Percentage distribution of farms by type, by economic class, United States, 1945* [1]

Economic class	All classified farms	Type of farm [2]						
		Field crop	Livestock	General	Dairy	Poultry	Family living [3]	Other types [4]
Farming units:								
Large scale farms.....	100.0	31.0	32.3	4.2	8.5	4.0	0.5	19.5
Commercial-family farms:								
Large.....	100.0	34.2	28.9	11.9	11.9	5.0	.2	7.9
Medium.....	100.0	31.9	22.0	19.3	18.0	3.9	.2	4.7
Small.....	100.0	44.5	13.6	16.4	11.7	4.5	5.0	4.3
Small-scale farms.....	100.0	42.6	8.8	9.5	5.6	5.1	24.6	3.8
Other units:								
Part-time units.....	100.0	10.0	7.2	4.6	4.4	6.7	62.6	4.5
Nominal units.....	100.0	13.9	6.0	2.6	1.8	4.5	67.5	3.6
All farms.....	100.0	32.3	14.1	12.0	9.7	4.8	22.4	4.7

[1] Based on unpublished data the 1945 Sample Census of Agriculture, used by permission of the Bureau of Census.

[2] For a discussion of the basis for classifying farms by type see *"Value of Farm Products and Type of Farm," United States Census of Agriculture, 1945 (18, V. 2, ch. 10).*

[3] Farms that produce products primarily for own household use.

[4] Includes fruit-and-nut farms, vegetable farms, horticultural-specialty farms, and forest-products farms.

TABLE 22.--*Number of farms by economic class, by regions, 1945* [1]

Region	All farms	Farming units					Other units	
		Large-scale farms	Commercial-family farms			Small-scale farms	Part-time units	Nominal units
			Large	Medium	Small			
	Thousand	*Thousand*	*Thousand*	*Thousand*	*Thousand*	*Thousand*	*Thousand*	*Thousand*
Northeast.....	548.0	9.7	45.6	122.7	110.8	48.0	86.8	124.4
Corn Belt.....	1,052.7	19.7	131.1	287.7	267.8	106.0	85.1	155.3
Lake.....	542.2	3.1	33.5	194.4	166.4	42.8	41.1	60.9
Appalachian.....	1,031.0	4.8	21.5	123.6	314.3	200.7	138.2	227.9
Southeast.....	657.9	4.5	9.7	53.5	228.0	175.2	70.4	116.6
Delta.....	591.5	3.4	8.5	31.9	211.1	194.0	46.0	96.7
Southern Plains..	549.7	11.6	31.2	90.5	159.1	99.0	62.8	95.5
Northern Plains..	391.2	9.5	59.2	159.7	101.9	25.6	11.1	24.2
Mountain.....	212.6	10.7	28.1	54.8	49.9	15.9	19.1	34.1
Pacific.....	282.1	25.1	40.5	54.2	52.7	16.3	41.6	51.7
United States...	[2] 5,858.9	102.1	408.9	1,173.0	1,661.9	923.5	602.2	987.3

[1] *Special Report 1945 Sample Census of Agriculture*, (19, Table 29).
[2] Region totals will not add to U. S. total in some cases because figures have been rounded.

TABLE 23.--*Percentage distribution of farms by economic class by tenure status of operator, United States, 1945* [1]

Economic class	All tenures	Full owners	Part owners	Managers	Tenants				
					Cash	Share cash	Share	Croppers [2]	Other [3]
Farming units:									
Large-scale farms	1.7	1.1	5.0	28.4	1.1	1.9	1.4	0.1	1.0
Commercial family farms:									
Large	7.0	4.8	16.6	27.1	5.0	17.5	10.2	.8	5.5
Medium	20.0	16.3	34.9	24.1	14.7	41.2	29.4	10.4	16.8
Small	28.4	26.1	26.1	10.0	23.9	28.9	33.5	46.0	29.5
Small-scale farms	15.8	15.9	8.1	1.4	17.2	6.5	14.4	29.9	18.3
Other units:									
Part-time units	10.3	13.9	4.4	.6	16.2	.9	2.9	3.0	8.5
Nominal units	16.8	21.9	4.9	8.4	21.9	3.1	8.2	9.8	20.4
All farms	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1] Based on unpublished data from the 1945 Sample Census of Agriculture, used by permission of the Bureau of the Census.
[2] Southern States only.
[3] Includes unspecified tenants, that is, those whose method of payment was not reported.

TABLE 24.--*Selected farm expenditures as a percentage of total value of products and total value of products sold, farming units by economic class, United States, 1944* [1]

Economic class	Hired labor	Feed purchased	Livestock and poultry bought	Commercial fertilizer, lime, and seed
	Percent	*Percent*	*Percent*	*Percent*
	Percentage of total value of products			
Farming units:				
Large-scale farms	18.5	10.6	9.7	3.3
Commercial-family farms:				
Large	10.9	14.1	8.3	3.5
Medium	7.9	14.0	6.1	3.9
Small	5.9	12.3	5.1	5.1
Small-scale farms	3.9	11.7	4.1	5.9
	Percentage of total value of products sold			
Farming units:				
Large-scale farms	18.8	10.8	9.9	3.4
Commercial-family farms:				
Large	11.4	14.7	8.6	3.6
Medium	8.6	15.3	6.7	4.3
Small	7.3	15.2	6.3	6.3
Small-scale farms	5.9	17.9	6.3	8.9

[1] Based on unpublished data from the 1945 Sample Census of Agriculture, used by permission of the Bureau of Census.

TABLE 25.--*Estimates of average farm income and expenses for farming units, by economic class, Corn Belt States, 1944*

Item		Large-scale	Commercial-family farms			Small-scale
			Large	Medium	Small	
Number of farms[1]	1,000	19.7	131.1	287.7	267.8	106.0
		Averages per farm[2]				
Total land[1]	acres	462	257	170	119	79
Cropland[1]	do.	308	173	98	52	24
Total capital[3]	dollars	101,839	44,703	20,980	10,413	4,812
Family labor resources[3]	man eqs.	1.4	1.1	1.3	1.2	1.1
Net farm income	dollars	11,400	5,011	2,578	960	437
Gross farm income	do.	32,020	10,548	5,098	2,147	973
Expenses:						
Wages[1]	do.	2,981	618	226	88	31
Feed[1]	do.	4,577	1,308	709	355	182
Livestock and poultry[1]	do.	6,278	1,086	356	141	62
Fertilizer, lime, and seeds[1]	do.	859	350	195	99	11
Machinery operation and depr., building maintenance, taxes, and miscellaneous	do.	5,922	2,175	1,034	504	217
Total farm expenses	do.	20,620	5,537	2,520	1,187	536

[1] Based on unpublished and published data, 1945 Sample Census of Agriculture, used by permission of the Bureau of Census.

[2] Average for all farms in each class.

[3] Estimated. Capital includes estimated value of working capital. Government payments based on total for the region allocated to the various classes on the basis of farm acreage. Machinery operation and depreciation expenses based on totals for regions as reported by BAE. Motor vehicle operating expenses allocated on basis of tractor and auto numbers adjusted for fuel consumption. Machinery maintenance and motor vehicle depreciation expenses allocated on basis of relative values of implements and machinery, expenses for taxes based on BAE estimates of total taxes allocated to the classes on the basis of relative amounts of total capital. Building depreciation based on BAE estimates of total building depreciation allocated to the various classes on basis of estimated value of farm buildings. Miscellaneous operating expenses based on estimated total allocated among economic classes largely on the basis of relative value of farm products sold.

[4] Estimated. Includes reported value of farm products sold and used in home and estimated Government payments and rental value of farm dwelling.

TABLE 26.--*Average farm acreage, value of land and buildings and value of implements and machinery, census farms and management units, selected area, 1945*[1]

Economic class	Land in farm		Cropland harvested		Value of land and buildings		Value of implements and machinery	
	Census farms	Management units	Census farms	Management units	Census farms	Management units	Census farms	Management units
Farming units:	*Acres*	*Acres*	*Acres*	*Acres*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Large-scale farms	1,181.7	1,244.7	111.0	544.0	59,999	64,702	8,127	7,274
Commercial-family farms:								
Large	127.3	412.6	142.7	158.7	18,841	17,410	2,884	2,290
Medium	140.4	177.3	52.8	65.7	5,937	7,045	[illegible]	843
Small	76.8	96.9	29.7	33.3	2,977	3,349	284	330
Small-scale farms	56.7	68.0	18.9	19.7	1,634	1,686	132	145
Other units:								
Part-time units	41.1	40.8	9.4	9.0	1,373	1,722	141	133
Nominal units	53.5	54.2	9.6	9.1	1,963	1,817	113	109
All farms[2]	81.7	111.1	27.7	37.7	3,139	4,179	331	439

[1] Unpublished data from the 1945 Census of Agriculture, used by permission of the Bureau of Census. Selected area includes Alabama, Arkansas, Mississippi, Louisiana, Georgia, North Carolina, South Carolina, and the selected multiple-unit areas in Virginia and Missouri. Data for multiple units in Arkansas and North Carolina relate only to the area included in the multiple-unit study. See *Multiple Unit Operations, U. S. Census of Agriculture, 1945 (20, fig. 5, p. 14).*

[2] Average of all farms in each class.

TABLE 27.--*Single units and multiple units by economic class, selected area, 1945* [1]

Economic class	Management units		Multiple units		Single units	
	Number	Percentage of total	Number	Percentage of total	Number	Percentage of total
	Thous.	*Percent*	*Thous.*	*Percent*	*Thous.*	*Percent*
Farming units:						
Large-scale farms	12.5	1.1	8.8	6.2	3.7	0.4
Commercial-family farms:						
Large	39.8	3.5	25.1	17.7	14.8	1.5
Medium	145.5	12.9	61.1	43.3	84.3	8.5
Small	353.6	31.4	38.1	27.0	315.5	32.0
Small-scale farms	264.8	23.5	5.8	4.1	259.0	26.2
Other units:						
Part-time units	119.8	10.6	1.4	1.0	118.4	12.0
Nominal units	191.9	17.0	1.0	.7	190.9	19.4
All farms	1,127.9	100.0	141.3	100.0	986.6	100.0

[1] Based on unpublished data from 1945 Census of Agriculture, used by permission of the Bureau of Census. Selected area includes Alabama, Arkansas, Mississippi, Louisiana, Georgia, North Carolina, South Carolina, and the selected multiple-unit areas in Virginia and Missouri. Data for multiple units in Arkansas and North Carolina relate only to the area included in the multiple-unit study. See *Multiple Unit Operations, U. S. Census of Agriculture, 1945 (20, fig. 5, p. 14).*

TABLE 28.--*Percentage of multiple units and single units classified as field-crop farms by economic class, selected area, 1945* [1]

Economic class	Multiple units	Single units
	Percent	*Percent*
Farming units:		
Large-scale farms	91.1	13.9
Commercial-family farms:		
Large	90.8	59.8
Medium	90.5	76.0
Small	79.9	74.1
Small-scale farms	57.7	72.6
Other units:		
Part-time units	42.9	15.0
Nominal units	25.3	17.4
All farms	85.1	30.1

[1] Based on unpublished data from 1945 Census of Agriculture, used by permission of the Bureau of Census. Selected area includes Alabama, Arkansas, Mississippi, Louisiana, Georgia, North Carolina, South Carolina, and the selected multiple-unit areas in Virginia and Missouri. Data for multiple units in Arkansas and North Carolina relate only to the area included in the multiple-unit study. See *Multiple Unit Operations, U. S. Census of Agriculture, 1945 (20, fig. 5, p. 14).*

TABLE 29.--*Average number of subunits per multiple unit by economic class, cash wages paid for hired labor per multiple unit and per single unit, selected area, 1945* [1]

Economic class	Multiple units		Single unit
	No. of subunits [2]	*Cash wages paid*	*Cash wages paid*
Farming units:			
Large-scale farms...	15	$ 4,800	$ 8,452
Commercial-family farms:			
Large.....	5	1,100	1,545
Medium.....	3	339	359
Small.....	2	105	87
Small-scale farms...	2	46	21
Other units:			
Part-time units.....	2	73	19
Nominal units.....	2	40	19
All farms.....	1	673	125

[1] Based on unpublished data from 1945 Census of Agriculture, used by permission of the Bureau of Census. Selected area includes Alabama, Arkansas, Mississippi, Louisiana, Georgia, North Carolina, South Carolina, and the selected multiple-unit areas in Virginia and Missouri. Data for multiple units in Arkansas and North Carolina relate only to the area included in the multiple-unit study. See *Multiple Unit Operations, U. S. Census of Agriculture, 1945 (20, fig. 5, p. 14)*.

[2] Includes the home farm.

TABLE 30.--*Effect of management units on number of farms, by economic class, Delta and Southeast States*[1]

Economic class	Census farms		Management units[2]	
	Number (Thousands)	*Percent*	*Number* (Thousands)	*Percent*
	Delta States			
Farming units:				
Large-scale farms	3.4	0.6	5.6	1.4
Commercial-family farms:				
Large	8.5	1.4	11.3	2.8
Medium	32.0	5.4	35.7	9.0
Small	211.0	35.7	119.0	29.8
Small-scale farms	194.0	32.8	112.3	28.2
Other units:				
Part-time	46.0	7.8	41.6	10.4
Nominal units	96.7	16.3	73.3	18.4
All farms	591.6	100.0	398.8	100.0
	Southeast States			
Farming units:				
Large-scale farms	1.5	.7	6.3	1.2
Commercial-family farms:				
Large	9.7	1.5	16.7	3.3
Medium	53.5	8.1	58.3	11.4
Small	228.0	34.7	155.9	30.5
Small-scale farms	175.2	26.6	121.6	23.8
Other units:				
Part-time units	70.3	10.7	61.1	12.0
Nominal units	116.6	17.7	90.8	17.8
All farms	657.8	100.0	510.7	100.0

[1] Based on unpublished data, 1945 Census of Agriculture, used by permission of the Bureau of Census. Selected area includes Alabama, Arkansas, Mississippi, Louisiana, Georgia, North Carolina, South Carolina, and the selected multiple-unit areas in Virginia and Missouri. Data for multiple units in Arkansas and North Carolina relate only to the area included in the multiple-unit study. *See Multiple Unit Operations, U. S. Census of Agriculture,* 1945 (20, Fig. 5, p. 14).

[2] For selected area; census farms used for counties outside multiple-unit area.

TABLE 31.--*Percentages of all farms, selected resources and value of farm products, large-scale farm, by regions, 1945* [1]

Region	Number of farms [2]	All labor resources [3]	All land [2]	Harvested cropland [2]	Gross value of farm products [2]
	Percent	*Percent*	*Percent*	*Percent*	*Percent*
Northeast States.....	1.8	11.4	5.9	7.3	22.1
Corn Belt States.....	1.9	5.1	6.3	8.0	15.4
Lake States.....	.6	3.2	2.3	2.6	6.8
Appalachian States....	.5	2.8	3.6	4.4	8.1
Southeast States.....	.7	6.6	14.3	6.6	19.0
Delta States,.....	.6	5.6	10.3	11.5	11.8
Southern Plains States	2.1	8.7	42.5	14.6	24.9
Northern Plains States	2.1	5.8	11.0	8.9	16.7
Mountain States.....	5.0	19.3	51.0	22.5	38.0
Pacific States.....	8.9	36.1	52.4	51.7	58.8
United States.....	1.7	8.3	25.8	11.1	21.9

[1] Data pertain to farms, as classified by census. This corresponds to what is termed large-scale wage labor, and mechanized units.

[2] *Special Report 1945 Sample Census of Agriculture (19).*

[3] Estimated.

TABLE 32.--*Number of farms, cash wages paid per farm, and percentage reporting specified cash wages paid, large-scale and large commercial-family farms, by regions, 1945* [1]

Region	Number of farms	Cash wages paid per farm		Percent of farms reporting		
		All farms	Farms reporting wages	Any wages	$1,000 or more	$2,500 or more
	Number	*Dollars*	*Dollars*	*Percent*	*Percent*	*Percent*
	Large-scale farms					
Northeast States...	9,687	10,737	10,931	98.2	95.7	85.1
Corn Belt States...	19,705	2,984	3,187	93.7	66.5	29.1
Lake States.....	3,073	8,585	8,919	96.3	83.3	60.6
Appalachian States.	4,836	5,650	7,022	80.5	76.4	59.9
Southeast States...	4,476	11,236	12,046	93.3	88.6	77.9
Delta States.....	3,380	9,577	10,449	91.7	86.6	74.7
Southern Plains States.....	11,635	4,950	5,202	95.2	81.2	56.0
Northern Plains States.....	9,547	3,037	3,200	94.9	72.3	37.6
Mountain States....	10,705	7,343	7,758	94.7	87.8	68.8
Pacific States.....	25,092	11,052	11,546	95.7	88.8	74.1
United States.....	102,136	7,262	7,696	94.4	81.9	59.6
	Large commercial-family farms					
Northeast States...	45,639	1,634	1,865	87.6	56.7	22.2
Corn Belt States...	131,050	618	751	82.2	23.3	3.8
Lake States.....	33,464	979	1,106	88.6	37.0	8.0
Appalachian States.	21,529	1,187	1,313	90.4	44.0	13.7
Southeast States...	9,716	2,013	2,362	85.2	60.8	33.2
Delta States.....	8,529	2,383	2,801	85.1	68.3	37.5
Southern Plains States.....	31,239	1,541	1,692	91.1	53.9	22.2
Northern Plains States.....	59,152	736	835	88.2	26.0	5.5
Mountain States....	28,083	1,442	1,581	91.2	54.0	18.0
Pacific States.....	40,515	2,009	2,277	88.2	59.2	31.0
United States.....	408,914	1,143	1,319	86.7	39.5	13.5

[1] Based on unpublished data 1945 Sample Census of Agriculture, used by permission of the Bureau of Census.

TABLE 33.--*Number of large-scale multiple and single units, specified Southern States* [1]

State	Multiple units	Single units
	Number	*Number*
Arkansas	1,431	544
Louisiana	594	754
Mississippi	2,190	120
Alabama	532	390
Georgia	1,136	756
South Carolina	864	188
North Carolina	1,610	743
Total	8,357	3,495

[1] Unpublished data from 1945 Census of Agriculture used by permission of the Bureau of Census.

TABLE 34.--*Percentage of all farms, selected resources and value of farm products, commercial-family farms, by regions, 1945*

Region	Number of farms [1]	All labor resources [2]	All land [1]	Harvested cropland [1]	Gross value of farm products [1]
	Percent	*Percent*	*Percent*	*Percent*	*Percent*
	All commercial-family farms				
Northeast States	50.9	62.7	67.8	74.7	71.8
Corn Belt States	65.1	74.8	79.8	85.0	80.3
Lake States	72.7	82.4	85.3	90.0	89.1
Appalachian States	44.6	55.7	60.3	69.2	74.7
Southeast States	44.3	53.4	55.7	64.6	62.7
Delta States	42.5	51.0	52.1	59.4	64.3
Southern Plains States	51.1	62.0	46.7	75.2	65.8
Northern Plains States	82.0	85.3	81.4	88.0	81.5
Mountain States	62.5	64.4	43.7	72.1	59.0
Pacific States	52.2	48.7	40.5	43.7	38.5
United States	55.4	63.8	60.5	78.4	70.6
	Large				
Northeast States	8.3	15.9	15.7	18.8	28.9
Corn Belt States	12.4	17.8	23.5	29.8	33.0
Lake States	6.2	9.7	12.4	15.2	19.4
Appalachian States	2.1	4.4	7.2	8.4	11.4
Southeast States	1.5	4.1	9.2	6.9	8.8
Delta States	1.4	4.5	9.1	9.8	9.2
Southern Plains States	5.7	11.1	15.6	21.2	20.4
Northern Plains States	15.1	19.4	26.0	7.8	31.4
Mountain States	13.2	19.3	21.0	29.4	27.4
Pacific States	14.3	20.2	21.2	24.0	21.7
United States	7.0	11.5	18.3	22.3	23.5
	Medium				
Northeast States	22.4	28.6	31.9	36.1	31.9
Corn Belt States	27.3	32.3	34.1	27.0	24.4
Lake States	35.9	43.2	45.5	50.3	51.0
Appalachian States	12.0	16.5	19.1	23.5	29.5
Southeast States	8.1	11.8	15.1	16.9	19.1
Delta States	5.4	8.3	11.6	12.8	14.6
Southern Plains States	16.5	22.5	15.9	30.1	26.5
Northern Plains States	40.8	42.6	39.3	44.2	39.5
Mountain States	25.8	27.2	15.0	28.7	23.3
Pacific States	19.2	17.5	11.6	12.7	12.4
United States	20.0	24.2	24.1	34.4	30.0

TABLE 34.--*Percentage of all farms, selected resources and value of farm products, commercial-family farms, by regions, 1945--Continued*

Region	Number of farms [1]	All labor resources [2]	All land [1]	Harvested cropland [1]	Gross value of farm products [1]
	Percent	*Percent*	*Percent*	*Percent*	*Percent*
			Small		
Northeast States ...	20.2	18.2	20.2	19.8	11.0
Corn Belt States ...	25.4	24.7	22.2	18.2	12.9
Lake States	30.7	29.5	27.4	24.5	18.7
Appalachian States .	30.5	34.8	34.0	37.3	33.8
Southeast States ...	34.7	37.5	31.4	40.8	34.8
Delta States	35.7	38.2	31.4	36.8	40.5
Southern Plains States	28.9	28.4	15.2	23.9	18.9
Northern Plains States	26.1	23.3	16.1	16.0	10.6
Mountain States	23.5	17.9	7.7	14.6	8.3
Pacific States	18.7	11.0	7.7	7.0	4.4
United States	28.4	28.1	18.1	21.7	17.1

[1] *Special Report on 1945 Sample Census of Agriculture, (19, table 29, pp. 120-159).*

[2] Estimated.

TABLE 35.--*Percentage of all farms of specified types classified as commercial family farms, by regions, 1945*[1]

Region	All types [2]	Field crops	Dairy	Poultry	Live-stock	General	Family living	Other types
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
				All commercial - family farms				
Northeast States	52.2	51.5	90.9	64.9	51.5	77.2	5.5	57.7
Corn Belt States	66.4	78.3	75.3	35.6	81.0	81.9	5.2	52.4
Lake States	73.9	58.9	87.2	50.5	84.0	89.3	6.4	57.7
Appalachian States	45.4	70.8	63.0	50.5	59.7	64.9	6.6	49.8
Southeast States	45.0	59.5	59.0	62.5	54.0	61.1	9.2	56.6
Delta States	43.0	54.7	64.2	45.2	46.0	55.2	7.7	46.2
Southern Plains States	51.9	72.2	61.5	41.5	59.0	71.1	6.0	54.3
Northern Plains States	83.0	90.4	68.8	40.1	84.9	90.8	9.1	38.1
Mountain States	64.1	79.6	73.0	56.6	70.9	83.4	6.0	59.2
Pacific States	53.9	62.8	74.2	67.9	60.6	73.6	5.9	67.3
United States	56.4	67.3	81.5	51.7	74.3	79.3	6.7	58.3

[1] Unpublished data from 1945 Sample Census of Agriculture. Used by permission of the Bureau of Census.
[2] Excludes farms not classified by type.

TABLE 36.--*Farm size characteristics of commercial family-operated farms, selected areas* [1]

Area and type of farm	Total land in farms 1944	Acres of cropland 1944	Total labor used 1944	Land and buildings 1944	Working capital 1944	Return to land, labor and capital		Gross income 1944
						1930-47 average	1944	
	Acres	*Acres*	*Hours*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Corn Belt farms:								
Cash grain	230	180	4,128	34,960	9,619	4,531	7,276	9,162
Hog-beef fattening	210	139	4,915	21,840	11,176	3,776	6,428	8,329
Hog-beef raising	177	93	4,000	11,151	6,581	2,223	3,422	4,524
Hog-dairy	140	90	5,589	14,000	7,554	2,902	4,251	5,572
Dairy farms:								
Central New York	145	54	5,179	6,670	6,519	2,373	4,382	7,043
Southern Wisconsin	122	71	5,514	11,224	7,389	2,828	5,353	6,949
Spring wheat farms (Northern Plains):								
Wheat-corn-livestock	401	243	4,066	10,787	7,140	2,923	5,643	7,013
Wheat-small grain-livestock	518	285	3,865	9,187	7,865	3,038	6,164	7,637
Wheat-roughage-livestock	644	250	4,497	7,896	7,131	2,493	5,081	6,302
Winter-wheat farms (Southern Plains):								
Wheat	595	266	3,152	19,040	7,020	3,808	7,403	8,787
Wheat-grain sorghums	685	433	3,326	20,550	6,658	4,319	11,924	12,865
Cotton farms:								
Southern Plains	221	153	3,706	9,945	3,028	2,278	4,458	5,436
Black Prairie	142	112	4,304	9,940	3,422	1,736	2,475	3,291
Delta of Mississippi	44	33	3,491	4,224	1,014	1,361	2,229	2,520
Intermountain Region:								
Cattle ranch	1,697	195	5,122	20,706	25,094	3,535	5,242	7,074

[1] *Typical Family-Operated Farms, 1930-45 (9).*

TABLE 37.--*Percentage of all farms, selected resources, and value of farm products, specified economic classes, by regions, 1945* [1]

Region	No. of farms [2]	All labor resources [3]	All land [2]	Harvested cropland [2]	Gross value of product [2]
	Percent	*Percent*	*Percent*	*Percent*	*Percent*
			Small-scale farms		
Northeast States	8.8	7.1	6.4	5.3	2.0
Corn Belt States	10.1	8.6	5.8	3.3	2.2
Lake States	7.9	6.3	4.7	3.2	2.0
Appalachian States	19.5	19.3	15.5	14.2	9.3
Southeast States	26.6	23.8	16.4	19.2	12.3
Delta States	32.8	29.4	21.9	21.1	18.0
Southern Plains States	18.0	15.2	5.0	6.3	5.2
Northern Plains States	6.6	4.7	2.3	1.9	1.1
Mountain States	7.5	5.4	1.4	2.2	1.1
Pacific States	5.8	3.5	1.1	.9	.6
United States	15.8	13.7	5.8	5.7	4.2
			Part-time units		
Northeast States	15.8	5.6	7.2	5.3	2.6
Corn Belt States	8.1	2.9	2.5	1.2	1.2
Lake States	7.6	2.4	2.7	1.6	1.3
Appalachian States	13.4	5.9	6.6	4.5	4.4
Southeast States	10.7	3.8	4.1	3.4	3.5
Delta States	7.8	2.7	4.6	2.7	3.0
Southern Plains States	11.4	3.5	1.5	1.2	2.4
Northern Plains States	2.8	.8	.4	.3	.3
Mountain States	9.0	2.4	.6	1.0	1.0
Pacific States	14.8	3.4	1.5	1.2	1.1
United States	10.3	3.6	2.3	1.7	1.9
			Nominal units		
Northeast States	22.7	13.2	12.7	7.4	1.5
Corn Belt States	14.8	8.6	5.6	2.5	.9
Lake States	11.2	5.7	5.0	2.6	.8
Appalachian States	22.1	16.3	14.0	7.7	3.5
Southeast States	17.7	12.4	9.5	6.2	2.5
Delta States	16.3	11.3	11.1	5.3	2.9
Southern Plains States	17.4	10.6	4.3	2.7	1.7
Northern Plains States	6.2	3.4	1.9	.9	.4
Mountain States	16.0	8.5	3.3	2.3	.9
Pacific States	18.3	8.3	4.5	2.4	1.0
United States	16.8	10.6	5.6	3.1	1.4

[1] Data pertain to farms as classified in the regular census.
[2] *Special Report 1945 Sample Census of Agriculture (19)*.
[3] Estimated.

TABLE 38.--*Number and important characteristics of small-scale farms, by regions, 1945*

Region	Number of farms	Average per farm [1]						
		Total value of products [2]	Total land [2]	Harvested cropland [2]	All labor resources [3]	Value of land and buildings [3]	Value of power and machinery [3]	Value of productive livestock [3]
	Thous.	*Dollars*	*Acres*	*Acres*	*Man equivalent*	*Dollars*	*Dollars*	*Dollars*
Northeast	148.0	787	72	23	1.3	3,425	662	516
Corn Belt	106.0	826	79	24	1.0	3,281	347	608
Lake	42.8	839	83	29	1.2	3,226	506	676
Appalachian	200.7	812	63	16	1.4	2,197	311	273
Southeast	175.2	834	63	22	1.4	1,706	326	194
Delta	194.0	845	53	18	1.3	1,461	278	248
Southern Plains	99.0	810	89	26	1.3	2,488	325	511
Northern Plains	25.6	844	162	58	1.1	3,536	505	848
Mountain	15.9	813	223	33	1.3	3,451	514	805
Pacific	16.3	791	49	9	1.1	3,917	299	378
United States	923.5	825	72	22	1.3	2,305	349	375

[1] Average of all farms in each class.
[2] *Special Report 1945 Sample Census of Agriculture (19).*
[3] Estimated.

TABLE 39.--*Percentage of small-scale farm operators reporting specified years of age and days work off farm, by regions, 1945* [1]

Region	Age of operator		Work off farm by operator		
	65 years and over	Under 25 years	None [2]	1 - 49 days	50 - 99 days
	Percent	*Percent*	*Percent*	*Percent*	*Percent*
Northeast	36	1	87	8	5
Corn Belt	35	2	88	7	5
Lake States	31	2	82	10	8
Appalachian	23	3	89	6	5
Southeast	19	5	87	7	6
Delta	16	5	83	10	7
Southern Plains	22	2	86	8	6
Northern Plains	31	4	82	13	5
Mountain	22	2	80	10	10
Pacific	31	1	83	9	8
United States	23	3	86	8	6

[1] Unpublished data from the 1945 Sample Census of Agriculture, used by permission of the Bureau of the Census.
[2] Includes farms not reporting on this item.

TABLE 40.--*Number and percentage of classified low-production farms in sample, by specified groups, 1940*[1]

Item	Number	Percentage
All classified low-production farms[2]	2,042	100.0
Part-time farms[3]	611	29.9
Small-scale farms[4]	729	35.7
Sharecropper units[5]	290	14.2
Other low-production farms[6]	413	20.2

[1] Data from a special tabulation of information for a sample of 7,000 households from the 1940 Census of Population, Housing and Agriculture. Used by permission of the U. S. Bureau of Census. See text p. 47.

[2] Farms reporting less than $520 total value of products sold and used, in 1939. Corresponds approximately to $1,200 at 1941 prices and yields; the upper limit of economic classes V and VI. About one-sixth of all farms in sample were "not classified" because they reported one or more of the following characteristics: Nonresident operator; began operating in 1940; unusual values of land and buildings, machinery, cash wages paid; unusually large numbers of some principal livestock; apparent incompleteness; or would have been small-scale but reported no sales or no value of home-used products.

[3] Low-production farms with operator reporting more than 100 days work off the farm, in 1939.

[4] Low-production farms, except sharecropper units, on which: (a) operator reported less than 100 days work off farm, (b) operator owned no other land, and (c) wages and salary reported for all family members was less than sales of farm products.

[5] Includes only sharecroppers reporting less than $520 total value of products, in 1939 and includes about half the total number enumerated by the 1940 Census of Agriculture *(17)*.

[6] Low-production farms not classified as small-scale farms by reason of (b) or (c) under footnote 4.

TABLE 41.--*Percentage distribution of classified part-time and small-scale farms, by tenure of operator, 1940* [1]

Tenure of operator	Small-scale farms		Part-time farms
	All farms	Farms with operator under 65	
	Percent	*Percent*	*Percent*
Full owner	57.1	51.7	69.6
Part owner	8.4	9.5	5.3
Cash tenant	11.8	12.8	17.5
Share tenant	14.7	17.1	2.6
Other tenant	8.0	8.9	5.0
All tenure	100.0	100.0	100.0

[1] Data from a special tabulation of information from a sample of 7,000 households from the 1940 Census of Population, Housing and Agriculture. Used by permission of the U. S. Bureau of Census. See text p. 47.

TABLE 42.--*Age distribution of persons in farm operator families by groups of classified low-production farms, with comparison, 1940*[1]

Classes of farm and population group	All ages	35 years and over	20-34 years	14-19 years	5-13 years	Under 5 years
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Part-time farms...	100.0	31.8	21.4	13.5	21.2	12.1
Small-scale farms.	100.0	45.6	17.0	11.2	16.1	10.1
Sharecropper units	100.0	26.6	25.3	15.1	19.7	13.3
Other low-production farms.....	100.0	42.8	22.8	14.4	11.3	8.7
All classified low-production farms.....	100.0	37.8	20.8	13.1	17.3	11.0
Rural farm population.....	100.0	36.1	21.2	13.4	19.3	10.0
Rural nonfarm population.....	100.0	38.2	25.0	11.0	16.5	9.3
Urban population..	100.0	43.4	26.5	10.3	13.1	6.7
Total population.	100.0	40.6	25.0	11.2	15.2	8.0

[1] Data for classified low-production farms from a special tabulation of information from a sample of 7,000 households from the 1940 Census of Population, Housing and Agriculture. Used by permission of the U. S. Bureau of Census. See text p. 47. Data on total rural farm, rural nonfarm, and urban based on published data, U. S. Bureau of Census.

TABLE 43.--*Percentage distribution of classified part-time farm operators working specified number of days off farm, by principal occupation in which off-farm work was performed, 1940*[1]

Occupation	Operators working off farm	
	100 days and over	200 days and over
	Percent	*Percent*
Farm laborer.....	10.9	9.4
Laborers, except farm.....	28.0	15.6
All other.....	61.1	75.0
All occupations.....	100.0	100.0

[1] Data from a tabulation of information from a sample of 7,000 households from the 1940 Census of Population, Housing and Agriculture. Used by permission of U. S. Bureau of Census. See text p. 47.

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