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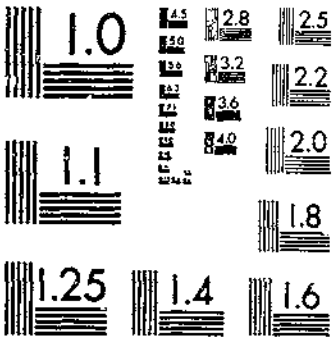

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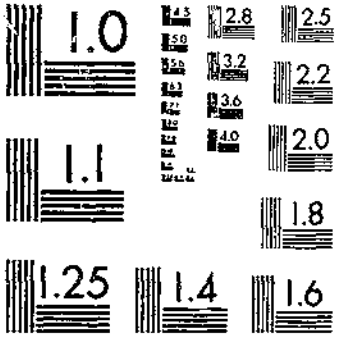

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FARM LABOR INPUTS, 1964

U.S. DEPARTMENT OF AGRICULTURE•ECONOMIC RESEARCH SERVICE•STATISTICAL BULLETIN NO. 438

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PREFACE

In 1964, Congress authorized an expanded program of research on the use of pesticides in agriculture. To meet this need for information, the Economic Research Service undertook a nationwide sample survey of farms in early 1965 with questions pertaining to pesticides and general farm operations in 1964. This survey included detailed data on labor inputs for most farm types, economic classes of farms, and farm production regions.

The Standards and Research Division of the Statistical Reporting Service designed the nationwide sample from which farmers were selected for interview. The Data Collection Branch of the Survey and Data Division of SRS assisted in developing the final format of the questionnaires and supervised the collection of data through their State Statistical Offices throughout the country.

Publication of the results of the research was unavoidably delayed, but the 1964 findings and relationships are still valid. Such results do not change as rapidly as other types of information, such as costs, for example.

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Washington, D. C. 20250 June 1969

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HIGHLIGHTS

Family workers, always a main source of farm labor, accounted for 70 percent of all hours worked on nearly 10,000 larger-than-average commercial farms surveyed on 1964 operations. Even so, two-thirds of these farms hired labor at some time during the year. As farm sales increased above $10,000 a year, family labor as a percentage of the total labor declined rapidly.

Type of farm operation and region influenced hiring practices more than other factors. Labor-intensive Southern cotton and tobacco farms hired the most labor, although these farms were smaller than the U.S. average. Livestock (other than poultry and dairy) and Midwestern farms hired the least labor--only 12 percent of all hours worked on Midwestern farms were hired.

Farmwork weeks were long, compared with industry. Farmers in the sample who did not hire labor averaged 59 hours weekly; farmers who did, averaged 55 hours. Hired workers averaged 53 hours, but at every sales level, operators worked more hours than the individual hired worker. There was a wide spread around these averages, again depending on type of farm, region, and size of operation--from 40 hours on farms selling $2,500 to $4,999/year to 61 hours with sales of $20,000 to $39,999. The operator's workweek generally did not increase beyond 64 hours, no matter how large the operation. Hired workers in three Southern regions worked fewer hours per week than workers in other regions.

Seasonality of farm labor needs ranged from 300 hours in February to 750 hours in July--usually the peak month.

The lowest labor requirement per $100 sales was on cash grain and general farms; the highest was on tobacco farms. Although hourly wage rates were lower in the South, the labor input cost per acre and per $100 sales was highest.

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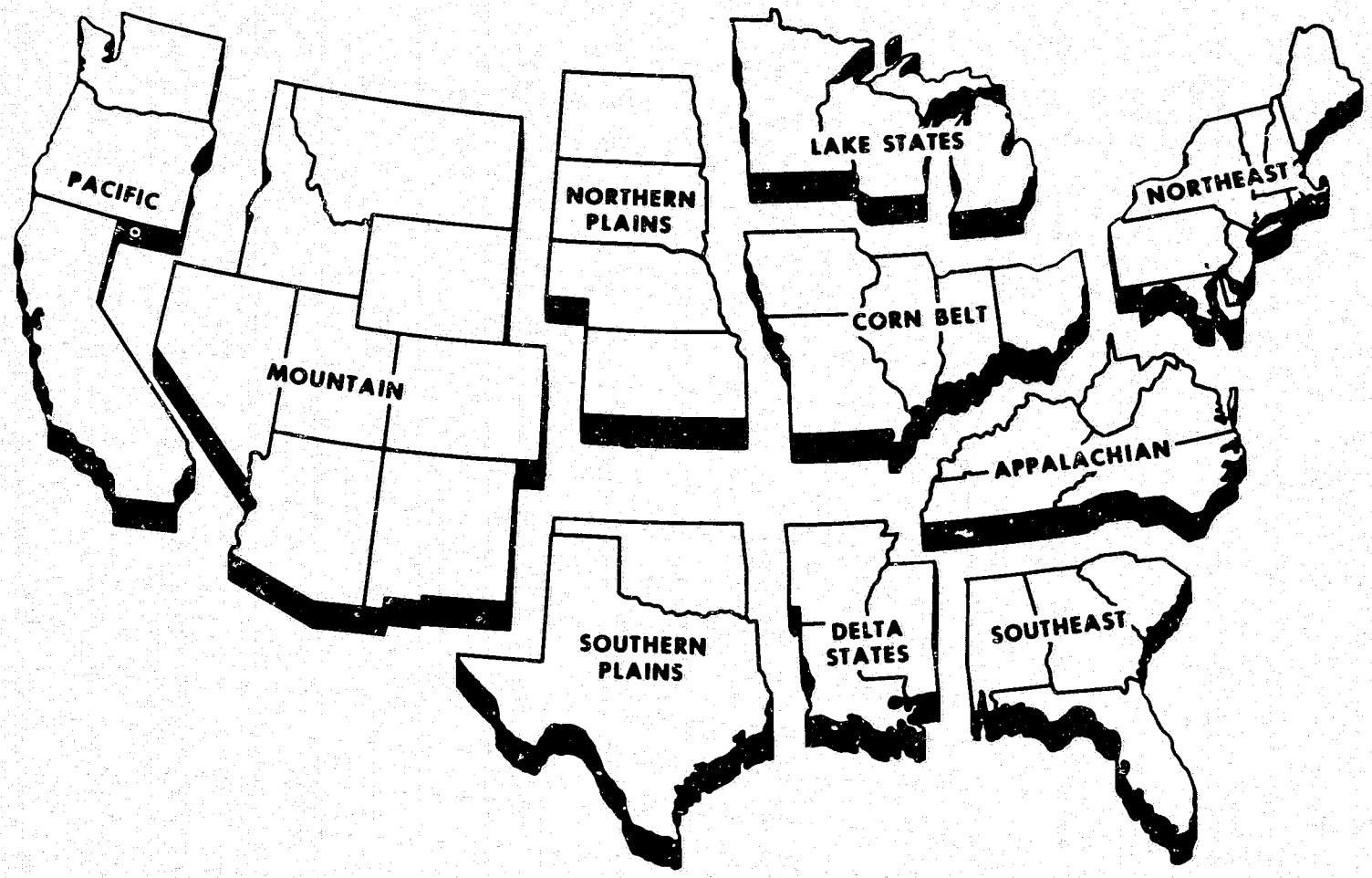
FARM PRODUCTION REGIONS



U. S. DEPARTMENT OF AGRICULTURE

NEG. ERS 1399A-62 (8) ECONOMIC RESEARCH SERVICE

FARM LABOR INPUTS, 1964

by

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INTRODUCTION

Modern technology has eliminated the need for much human labor once needed in agriculture. In 1964, only 6 percent of the total U.S. labor force was engaged in agricultural production.

Recurring questions asked by labor policymakers and researchers include: What proportion of the Nation's farms must hire labor? What is the demand for hired workers? How does the amount of hired labor compare with family labor?

The information in this bulletin should help answer such questions. Some aspects of the farm labor situation discussed in this bulletin include: (1) the proportion of labor performed by the farm operator and his family, compared with hired labor; (2) seasonal demands for labor; (3) the relation of farm size to labor efficiency; (4) unit labor needs for different types of farms; and (5) the concentration of production and hired labor on certain groups of farms.

Findings in this report are based on information obtained in a nationwide survey enumerated in 1965 based on 1964 farm operations.

Usable questionnaires were obtained from 10,800 farmers in 417 counties throughout the 48 contiguous States. Labor information was obtained from 9,896 farms that specialized in farming operations other than fruit and nut, vegetable, or poultry production. Farmers were selected for interviews on the basis of a stratified random sample designed to represent larger commercial farms which accounted for 90 percent of farm products sold. The survey included farmers with annual gross sales of $5,000 or more in all FPED, ERS production regions except the Appalachian, Southeast, and Delta States Regions. In these regions, farms reporting gross sales of $2,500 a year or more were included. Nearly 1 percent of all farmers in the classes described in the report were included in the sample. The States included in each of the ERS farm production regions discussed in this report are shown on the map, page vi.

While units included in the survey accounted for 90 percent of total agricultural production, only about half of all farms as defined by the census of agriculture were represented in the survey. The survey represents 1.5 million larger commercial farms. Information was not obtained for 640,000 smaller commercial farms, nor for the approximately 1.0 million noncommercial farms. Unless otherwise indicated, the data presented in this report apply only to the survey sample.

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SOURCES OF FARM LABOR

Farm labor is performed by the farm operator, by unpaid members of his family, and by hired workers. The operator and his family have historically provided most of the labor required in agricultural production. Findings in the survey indicated the farm operator and his family were still the major source of farm labor in 1964.

The farms surveyed required an average of 5,652 hours of labor during 1964 (table 1). The annual labor requirement averaged 3,819 hours for farms with sales of $2,500 to $4,999 a year (table 1), to 72,417 hours for farms with sales over $500,000 (appendix table 18).

Family Workers

In this report, family labor comprises that of the operator, his wife, and other unpaid family members. Although two-thirds of the farms surveyed used some hired labor during the year, unpaid family workers accounted for slightly over 70 percent of all labor hours needed. Of all the family and hired farmwork hours, operators accounted for 49 percent, farm wives for 7 percent, and other family members for 16 percent (table 1).

On smaller farms ($2,500 to $19,999 sales) the family contributed over 80 percent of the labor. As farms increased sales above $20,000, the proportion of total labor contributed by the operator and his family decreased rapidly to only 6 percent for farms with over a half million dollars of sales (fig. 1).

Table 1.--Total hours worked per year by all workers, percentage of hours contributed by family and hired workers, and percentage of farms using hired labor by value of farm products sold, 48 State survey, 1964 1/

Value of farm products sold	Total hours worked per farm by all workers during year 2/	Percentage of total hours contributed by-- Family workers: Total	Operator	Wife	Other	Hired workers	Percentage of farms using hired labor
	Hours	Percent					
$2,500-$4,999 3/-	3,819	80	49	12	19	20	80
$5,000-$9,999----	4,348	86	59	10	17	14	57
$10,000-$19,999--	5,005	83	57	8	18	17	60
$20,000-$39,999--	6,619	68	47	5	16	32	74
$40,000 and over-	12,034	37	26	2	9	63	89
All groups-----	5,652	72	49	7	16	28	65

1/ Fruit and nut, vegetable, and poultry farms excluded.
2/ Includes farms using hired labor and those not using hired labor.
3/ Appalachian. Southeast, and Delta States Regions only.

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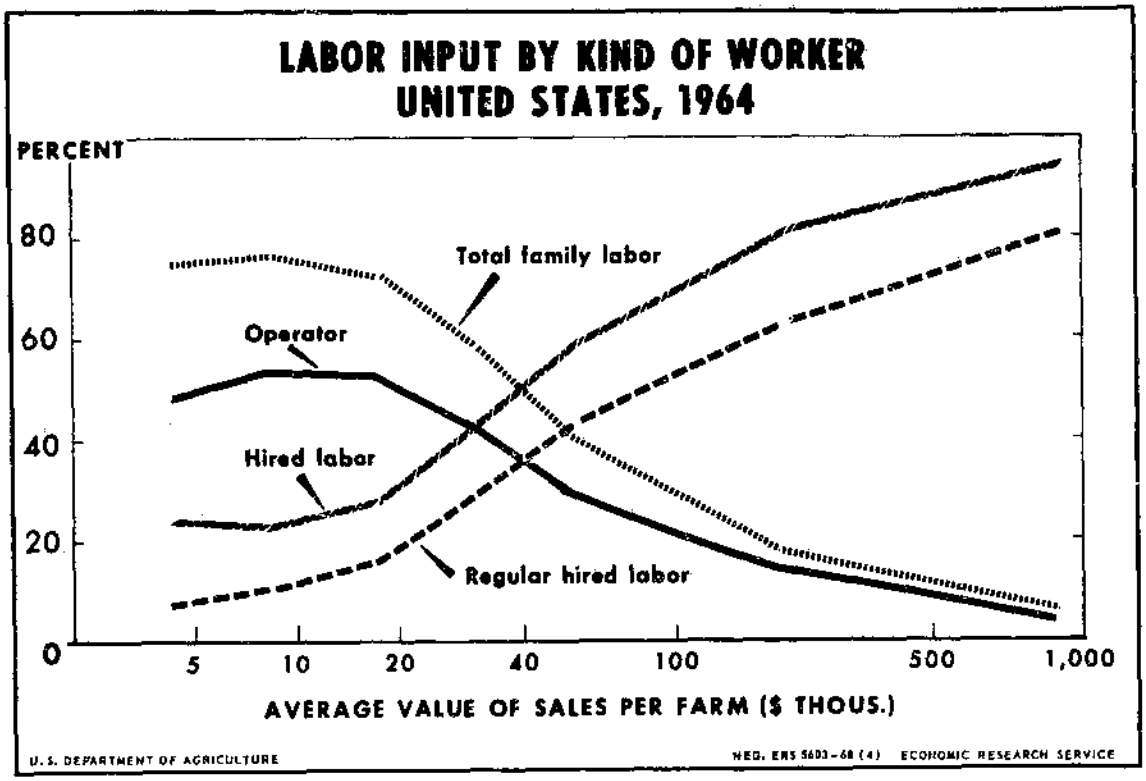

Figure 1

Farm operators accounted for about half of the hours worked on farms included in the survey. Operators contributed about 4 percent of the total work hours on farms with sales over $500,000 a year, and nearly 60 percent on farms with sales of $5,000 to $19,999 a year.

Participation by wives and other family members diminished as the volume of sales per farm increased. Farm wives contributed 2 percent of the hours worked on the larger farms and 12 percent on the smallest farms; other family members contributed from 9 percent on the larger farms to 19 percent on the smallest farms.

Even on farms using hired labor, family workers performed most of the farmwork. They accounted for 61 percent of the hours worked on these farms (table 2). On livestock farms (other than dairy and poultry) which used hired labor, family workers put in 74 percent of all farmwork hours. However, family workers accounted for only 38 percent of the work hours for cotton farms which hired labor.

Farm operators contributed the largest share of total labor on miscellaneous livestock farms and the least on cotton farms. Wives of dairy and tobacco farmers accounted for a larger share of the farmwork than wives of other types of farmers. Wives did the least farmwork on farms specializing in cotton and miscellaneous field crops. The contribution by other family members was most important on tobacco farms and least important on cotton farms.

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Table 2.--Percentage of total annual hours of farmwork contributed by family and hired workers on farms which hired labor, by type of farm, 48 State survey, 1964 1/

Type of farm	Percentage of total hours contributed by--				
	Family workers				Hired workers
	Total	Operator	Wife	Other	
	Percent				
Cash grain	63	49	4	10	37
Cotton	38	28	2	8	62
Tobacco	62	37	9	16	38
Other field crops	53	39	2	12	47
Dairy	69	47	9	13	31
Livestock ranches	58	40	5	13	42
Other livestock	74	56	6	12	26
General	54	40	4	10	46
All farms 2/	61	44	6	11	39

1/ Fruit and nut, vegetable, and poultry farms excluded.
2/ Includes farms with farm product sales of $5,000 a year or more in all regions except the South. Appalachian, Southeast, and Delta States Regions include farms with sales of $2,500 or more.

Hired Workers

As farms increase in size and become more specialized, the family is less able to do all the farmwork; a majority of the farmers surveyed relied on some hired work during 1964.

Size and Type of Farm: Effect on Hired Labor

Of the farmers surveyed, 65 percent reported hiring some labor in 1964 (table 3). The proportion of farms hiring labor was lowest in the $5,000 to $9,999 sales class. Farms with $2,500 to $4,999 sales were more likely to use hired labor mainly because they represented cotton, tobacco, and other labor-intensive enterprises. With this exception, the larger the farm, the more likely hired labor was used. All farms with sales of more than $500,000 a year used some hired labor (appendix table 18). There were a few farms with sales of $100,000 to $499,999 a year that relied solely on family labor.

Dairy, cash grain, and livestock farms were the least likely to use hired labor. Only 57 percent of the dairy farms used hired workers (table 3). Tobacco, cotton, and other field crop farms were most likely to use hired labor. Over 90 percent of these farms used some hired labor in 1964.

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Table 3.--Percentage of farms using hired labor by value of farm products sold, and by type of farm, 48 State survey, 1964 1/

Type of farm	Percentage of farms hiring labor with sales of--					Percentage of farms in all sales groups hiring labor
	$2,500 to $4,999 2/	$5,000 to $9,999	$10,000 to $19,999	$20,000 to $39,999	$40,000 and over	
	Percent					
Cash grain	3/	42	56	76	91	59
Tobacco	84	95	96	100	100	92
Cotton	83	89	91	99	96	91
Other field crops	3/	89	92	96	100	92
Dairy	3/	44	55	69	94	57
Livestock ranches	3/	44	59	62	88	60
Other livestock	73	53	57	67	82	62
General	3/	58	54	72	87	64
All types	80	57	60	74	89	65

1/ Fruit and nut, begetable, and poultry farms are excluded.
2/ Includes farms in the Appalachian, Southeast, and Delta States Regions only.
3/ Insufficient farms in this category to determine a percentage.

Although most of the large farms, regardless of farm type, hired some help, the proportion of small farms hiring labor varied considerably by type. Nearly all of the other field crop farms (sales of $5,000 to $9,999) hired labor, but less than 50 percent of similar size livestock ranches, cash grain, and dairy farms hired labor.

Regardless of farm size, most cotton and tobacco farms hired labor during 1964. For the United States, over 80 percent of the smallest cotton and tobacco farms (those with sales of $2,500 to $4,999) hired labor, and nearly 100 percent of such farms with sales of more than $20,000 used hired help that year.

Regular and Seasonal Hired Workers

Although 65 percent of the farmers surveyed used hired labor, hired workers accounted for only 28 percent of the hours worked on all farms. On farms which hired labor, hired workers accounted for 14 percent of the hours worked on farms with sales of $5,000 to $9,999 a year to 63 percent on farms with sales over $40,000 (table 4).

Regular hired workers accounted for 6 percent of the total hours on small farms and 51 percent on farms with sales over $40,000. Seasonal hired workers did a slightly greater proportion of the work on small farms than they did on the larger farms--14 and 12 percent.

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Table 4.--Percentage of total hours of farm labor contributed by family and hired workers, for all farms by value of farm products sold, 48 State survey, 1964 1/

Value of farm products sold	Percentage of total hours contributed by--			
	All family workers 2/	Hired workers 2/		
		Total	Regular	Seasonal
	Percent			
$2,500-$4,999 3/	80	20	6	14
$5,000-$9,999	86	14	6	8
$10,000-$19,999	83	17	10	7
$20,000-$39,999	68	32	21	11
$40,000 and over	37	63	51	12
All groups	72	28	18	10

1/ Fruit and nut, vegetable, and poultry farms excluded.
2/ Average for all farms surveyed, including farms hiring labor and those not hiring labor.
3/ Includes farms in the Appalachian, Southeast, and Delta States Regions only.

Hired workers provided 59 percent of the work hours on cotton farms, but only 17 percent on livestock farms (other than dairy) and livestock ranches (table 5).

The contribution of regular hired workers ranged from 13 percent of total hours on tobacco and other livestock farms to 31 percent on cotton farms. Seasonal workers, like regular workers, were also most important on cotton farms, where they accounted for 28 percent of all hours worked. On dairy and livestock farms, seasonal workers accounted for only a small percentage of the total labor input, reflecting the year-round demand for labor on such farms.

Regional Differences in Use of Hired Labor

Southern farmers were more likely to hire labor than farmers in other regions (fig. 2). Midwestern farmers used the least hired labor in terms of proportion of farms using hired labor and in proportion of work performed by hired workers (fig. 3).

Of the 9,896 farms surveyed, 5,384 or 54 percent were in the Midwest, 25 percent in the South, 14 percent in the West, and 7 percent in the Northeast (table 6).

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Table 5.--Percentage of total annual hours of farm labor contributed by family and regular and seasonal hired workers, for all farms, by type of farm, 48 State survey, 1964 1/

Type of farm	Percentage of total hours contributed by-- 2/			
	Family workers	Hired workers		
		Total	Regular	Seasonal
	Percent			
Cash grain	75	25	16	9
Tobacco	65	35	13	22
Cotton	41	59	31	28
Other field crops	55	45	22	23
Dairy	81	19	16	3
Livestock ranches	70	30	24	6
Other livestock	83	17	13	4
General	66	34	21	13
All types 3/	72	28	18	10

1/ Fruit and nut, vegetable, and poultry farms are excluded.

2/ Average for all farms surveyed, including farms hiring labor and those not hiring labor.

3/ Includes farms with farm product sales of $5,000 a year or more in all areas except the South. Appalachian, Southeast, and Delta States Regions include farms with sales of $2,500 or more.

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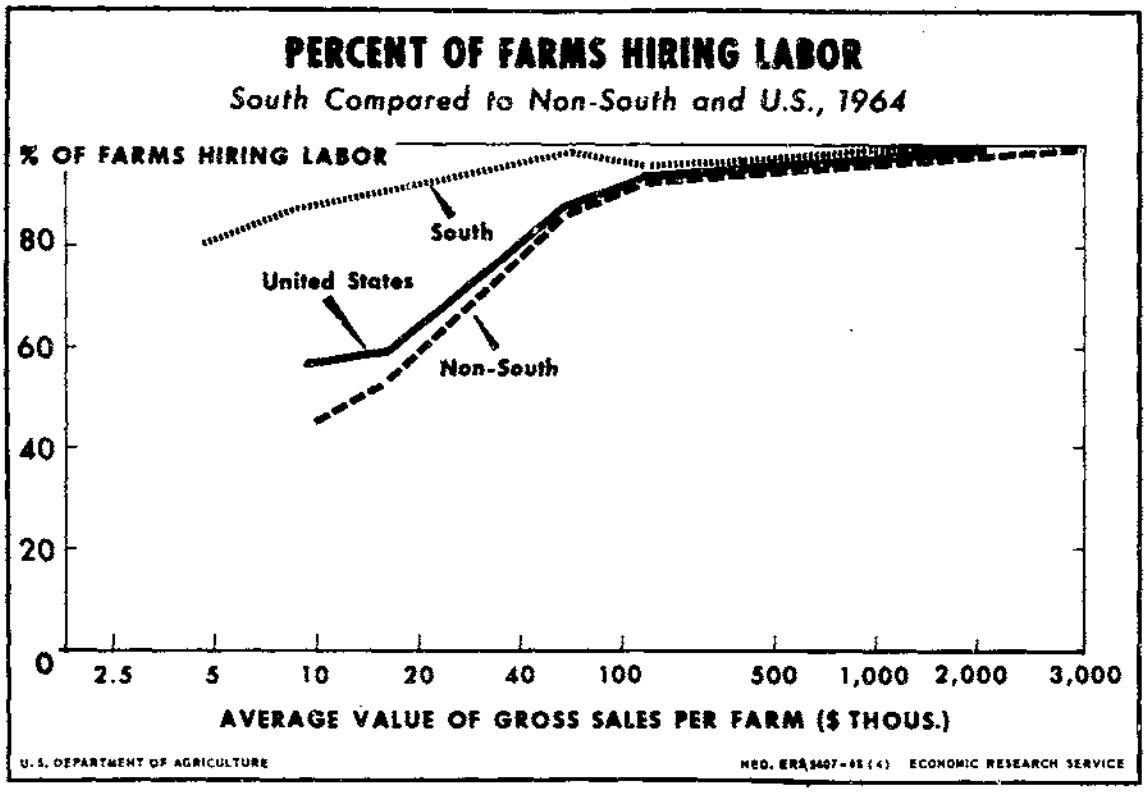

Figure 2

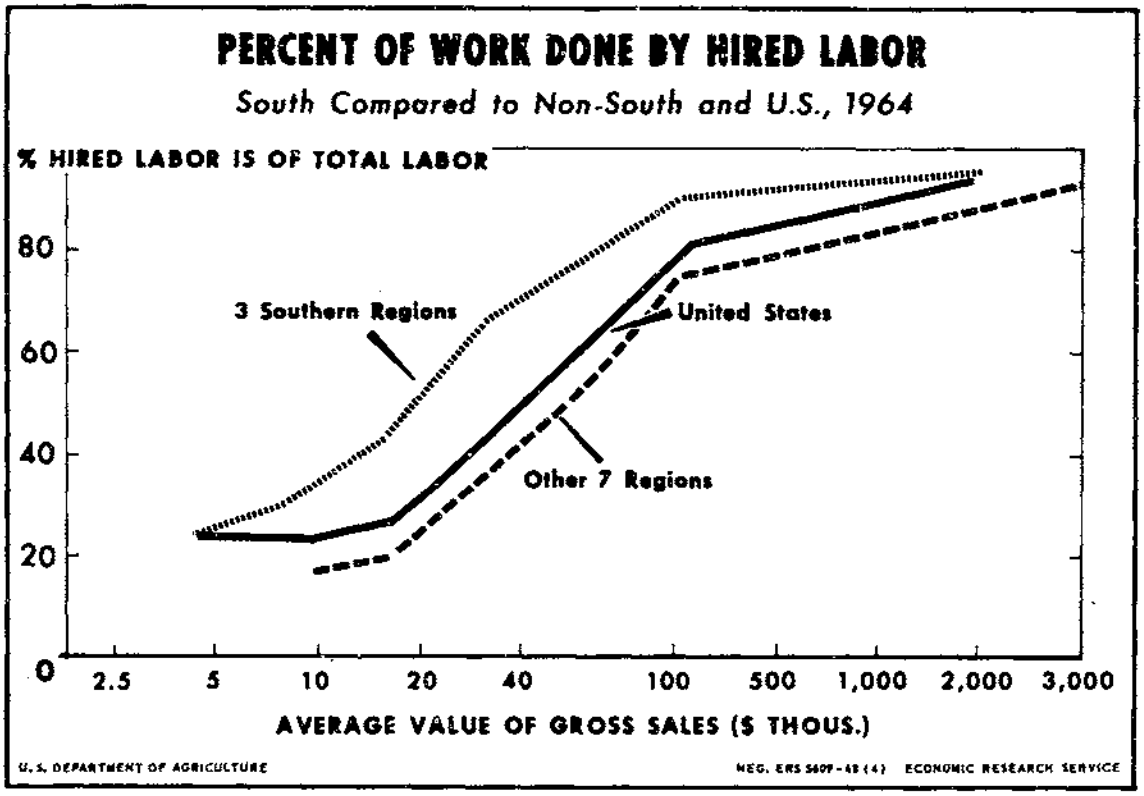

Figure 3

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Table 6.--Farms included in survey and farms using hired labor, by regions, 48 State survey, 1964 1/

Region 3/	Total number of farms surveyed 2/	Distribution of farms	Farms hiring labor		
			Number	Distribution of farms	Percentage of farms in region
	Number	Percent	Number	Percent	Percent
Northeast	634	7	423	6	67
South	2,471	25	2,172	34	88
Midwest	5,384	54	2,780	43	52
West	1,407	14	1,082	17	77
48 States	9,896	100	6,457	100	65

1/ Fruit and nut, vegetable, and poultry farms are excluded.
2/ Includes farms with farm product sales of $5,000 a year or more in all regions except the South. Appalachian, Southeast, and Delta States Regions include farms with sales of $2,500 or more.
3/ Areas are defined in appendix.

Of farms surveyed, 6,457 hired some labor in 1964. Eighty-eight percent of the Southern farmers hired labor compared with 52 percent of those in the Midwest. However, Southern farms accounted for only 34 percent of U.S. farms hiring labor, while the Midwest accounted for 43 percent of the total. Thus, the South accounted for only 25 percent of all farms in the survey, but 34 percent of the farms hiring labor. On the other hand, the Midwest accounted for 54 percent of all farms, but only 43 percent of those hiring labor.

Total hours of farmwork amounted to about 56 million hours on the farms surveyed. Hired workers accounted for about 28 percent of all the hours required.

Southern and Western farmers hired workers for 46 and 45 percent of all the hours required, while Midwestern farmers hired workers for only 12 percent of the work hours (table 7).

In the South, even the smallest farmers hired a considerable amount of work. Hired workers on Southern farms with sales of only $2,500 to $4,999 accounted for 20 percent of the labor input. They accounted for 27 percent of the hours on the $5,000 to $9,999 farms in the South, compared with 5 percent in the Midwest; and 42 percent on Southern farms with sales of $10,000 to $19,999, compared with only 7 percent in the Midwest. Farms in the South with sales up to $100,000 generally used much more hired labor than those in other regions. Above this level, most labor was hired in all regions.

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Table 7.--Percentage of farms hiring labor and labor input for all farms by region and by value of farm products sold, 48 State survey, 1964 1/

Value of farm products sold	Percentage of farms hiring labor					Percentage of hours performed by hired workers 3/				
	Northeast 2/	South	Midwest	West	All regions	Northeast	South	Midwest	West	All regions
	Percent									
$2,500-$4,999 4/	---	80	---	---	80	---	20	---	---	20
$5,000-$9,999	55	88	39	66	57	12	27	5	19	14
$10,000-$19,999	66	91	49	73	60	19	42	7	27	17
$20,000-$39,999	75	95	65	86	74	36	64	16	42	32
$40,000-$99,999	97	99	80	91	88	57	79	31	59	55
$100,000-$499,999	100	97	92	96	95	88	91	55	83	81
$500,000 and over	---	100	100	100	100	---	95	78	99	94
All groups	67	88	52	77	65	28	46	12	45	28

1/ Fruit and nut, vegetable, and poultry farms are excluded.
2/ Areas are defined in appendix.
3/ Average for all farms surveyed, including farms hiring labor and those not hiring labor.
4/ Includes farms in the Appalachian, Southeast, and Delta States Regions only.

The higher proportion of work performed by Southern hired workers was not entirely or even primarily attributable to the types of farming operations predominant there. Farms of almost every type in the South used proportionately more hired labor than other areas. For example, 61 percent of the labor required on Southern cash grain farms was performed by hired workers, compared with 13 percent in the Midwest and 45 percent in the West (table 8). On Southern livestock farms (other than dairy farms or ranches), 38 percent of the work was performed by hired workers, compared with 17 percent in the Northeast and 13 percent in the Midwest.

Several types of Western farms hired about as much labor as their Southern counterparts. Dairy farms in the West used more hired labor than those in the South. Only Northeastern farms specializing in other field crops hired less than similar farms in the Midwest.

Several related causal factors could help explain the greater use of hired labor in the South: (1) Farms there are generally smaller and less likely to be mechanized, (2) there has been a general oversupply of labor, partly because of the high birth rates, partly because of changes in cotton technology and shifts in cotton production to other areas, and partly because modern industry cannot utilize much of the available unskilled labor, and (3) hired labor probably is necessary even on small farms because of specialized crops which have sharp seasonal work peaks.

The high use of hired labor in the West can be attributed in part to the proportionately greater number of larger farms in that area.

FARM WORKWEEK

Workers on farms surveyed put in a long average workweek in 1964 compared with industry. Farm operators who relied solely on family help averaged 59 hours a week (table 9). Those who used hired labor worked 55 hours. Thus, farm operators who relied entirely on family labor did not work many more hours a week than farmers who hired labor. This was true for farms of nearly all sizes. Regular hired workers averaged 53 hours a week.

Operators and Family Workers

Operators of farms using hired labor with sales of $20,000 to $39,999 a year averaged 50 percent more hours a week than those with sales of $2,500 to $4,999 a year. Operators of farms in all sales groups over $40,000 a year worked about the same number of hours a week as those with sales of $20,000 to $39,999 a year. Although the operator's proportion of total hours was considerably less for larger than for smaller farms, all operators of farms averaged a longer workweek than the regular hired workers.

The workweek of the farm operators varied considerably in different sections of the country. In the Southeast, farmers who hired labor averaged 45 hours a week, compared with 70 hours in the Northeast (table 10). This difference is largely a function of type of farm, with dairy farming predominant in the Northeast and crop farming in the Southeast.

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Table 8.--Percentage of farms hiring labor and labor input hired, for all farms by region and by type of farm, 48 State survey, 1964 1/

Type of farm	Percentage of farms hiring labor in-- 2/					Percentage of hours performed by hired workers in-- 3/				
	Northeast	South	Midwest	West	All regions 3/	Northeast	South	Midwest	West	All regions 3/
	Percent									
Cash grain	---	69	54	73	59	---	61	13	45	25
Tobacco	---	92	---	---	92	---	35	---	---	35
Cotton	---	89	---	94	91	---	60	---	56	59
Other field crops	50	93	89	91	91	31	49	35	40	45
Dairy	66	72	46	69	56	26	34	9	37	19
Livestock ranches	---	---	51	80	60	---	---	12	54	30
Other livestock	63	83	57	---	61	17	38	13	---	17
General	75	90	45	75	64	65	53	13	43	34
All farms 4/	67	88	52	77	65	28	46	12	45	28

1/ Fruit and nut, vegetable, and poultry farms are excluded.
2/ Average for all farms surveyed including farms using hired labor and those not using hired labor.
3/ Regions are defined in appendix.
4/ Includes farms with farm product sales of $5,000 a year or more in all regions except the South. Appalachian, Southeast, and Delta States Regions include farms with sales of $2,500 or more.

Table 9.--Average weekly hours of farmwork performed by family and hired workers, by value of farm products sold, 48 State survey, 1964 1/

Value of farm products sold	Average weekly hours worked per worker on-- 2/						
	Farms hiring labor				Farms not hiring labor		
	Family			Regular hired workers	Family		
	Operator	Wife	Other		Operator	Wife	Other
	Hours						
$2,500-$4,999 3/	40	28	42	34	40	27	34
$5,000-$9,999	51	27	41	42	56	25	39
$10,000-$19,999	58	24	40	50	62	25	41
$20,000-$39,999	61	22	44	52	64	26	47
$40,000-$99,999	61	20	49	58	63	29	44
$100,000-$499,999	62	25	56	57	62	36	46
$500,000 and over	60	16	49	57	---	---	---
All groups	55	25	43	53	59	25	41

1/ Fruit and nut, vegetable, and poultry farms are excluded.
2/ Hours per week for the weeks that the workers performed farmwork.
3/ Includes farms in the Appalachian, Southeast, and Delta States Regions only.

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Table 10.--Average weekly hours of farmwork performed by family and hired workers on farms which hired labor, by production regions, 48 State survey, 1964 1/

Production region	Average hours worked per worker by--			
	Family workers			Regular hired workers
	Total	Operator	Wife	
	Hours			
Northeast	53	70	24	59
Appalachian	43	46	31	44
Southeast	43	45	25	50
Delta States	44	47	28	52
Corn Belt	46	57	21	50
Lake States	51	67	26	61
Northern Plains	49	60	20	54
Southern Plains	48	52	26	53
Mountain	54	61	22	60
Pacific	51	60	28	65
48 States 2/	47	55	25	53

1/ Fruit and nut, vegetable, and poultry farms are excluded.
2/ Includes farms with farm product sales of $5,000 a year or more in all except the South. Appalachian, Southeast, and Delta States Regions include farms with sales of $2,500 or more.

Farm wives averaged about 25 hours of farmwork a week (table 9). This was the same for farms using hired labor as for those not using hired labor. Generally, for farms employing hired labor, the larger the farm sales, the shorter the wife's farmwork week. For farms relying solely on family labor, the wife's farmwork week was not greatly affected by differences in farm size with sales under $100,000. Wives of farmers who hired labor averaged only 20 hours of farmwork a week in the Northern Plains, but they worked 28 hours a week in the Delta and Pacific Regions, and 31 hours a week in the Appalachian Region.

Other family members averaged 43 hours of farmwork a week on farms that used hired labor. The average workweek for other family members on farms using hired labor was about the same for all farms with sales of less than $40,000 a year. Above this sales level, other family members' weekly hours did increase, but individually, they never worked as many hours as the farm operator. For farms relying solely on family help, other family members generally put in a longer workweek as the farm size increased.

Hired Labor

Farmworkers hired on a regular basis averaged 53 hours a week. The workweek for regular hired workers ranged from 34 hours on farms with sales of $2,500 to $4,999 a year to about 58 hours on farms with sales over $40,000 a

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year. Regionally, the hired farm employees' workweek ranged from 44 hours in the Appalachian to 65 hours in the Pacific Region.

Number of Weeks Worked

The length of the workweek overstates the annual contribution of farm wives, other family members, and hired workers. While these people worked a reasonably long week, they did not perform any farmwork during many weeks of the year (table 11). Farm operators, on the other hand, worked nearly every week during the year, averaging 49 weeks of farmwork a year, whether they used hired labor or not. However, farm wives averaged only 14 weeks of farmwork for farms hiring labor and 19 weeks on farms not hiring labor. Other family members averaged 17 weeks of farmwork on farms hiring labor and 29 weeks on farms not hiring labor. Regular hired workers averaged 30 weeks a year.

The number of weeks worked during the year by the operator, farm wives, and other family members did not differ greatly by size of farm. However, the largest farms used over 1,000 weeks of regular hired workers' time, compared with 8 weeks on the smallest farms.

SEASONAL VARIATION IN FARM LABOR

The need for farm labor varies greatly during the year, due mainly to the seasonality of crop production and harvesting. Average total monthly family and hired labor requirements for all farms surveyed ranged from over 300 hours in February to about 750 hours in July (fig. 4). Figures 5 and 6 illustrate the seasonal labor distribution for small and large farms.

Total hours of work performed per month by all workers on the smallest farms ranged from 131 to 519 hours (table 12). On the largest farms, the monthly labor requirement ranged from 4,775 to 8,408 hours. In relative terms, the smallest farms used 4 times as much labor in the peak month as in the low month, and the largest farms used only 1.75 times as much labor in the high versus the low month.

Operator and Family Workers

Farms with sales of less than $20,000 a year demanded more of the operator's time in July than in any other month. Work during May demanded more of the operator's time on farms with sales of $20,000 to $499,999. September was the high labor month for operators of farms with sales over $500,000.

The peak monthly labor input for the operator averaged 271 hours and ranged from 199 hours on the smallest farms to 295 on farms with sales of $20,000 to $39,999. Operators of farms larger than this worked fewer hours in the peak month than those of smaller farms.

Hours worked by operators in the low month went up continually as farm size increased, ranging from 90 hours on the smallest farms to 190 hours on the largest farms. Thus, operators of the largest farms averaged over twice as many hours as the operators of the smallest farms in the low labor month. On the other hand, in the highest labor month, large farm operators put in half again as many hours as the small farm operators.

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Table 11.--Average number of weeks of farmwork performed during the year by family and hired workers, by value of farm products sold, 48 State survey, 1964 1/

Value of farm products sold	Number of weeks worked during year on--						
	Farms hiring labor				Farms not hiring labor		
	Farm operator	Farm wife	Other family members	Regular hired workers	Farm operator	Farm wife	Other family members
	Weeks						
$2,500-$4,999 2/	47	15	16	8	48	18	31
$5,000-$9,999	48	15	15	11	49	19	22
$10,000-$19,999	49	17	17	17	49	19	31
$20,000-$39,999	49	14	18	37	49	19	40
$40,000-$99,999	49	8	19	75	46	13	47
$100,000-$499,999	48	4	17	236	44	7	23
$500,000 and over	44	15	29	1,020	---	---	---
All groups	49	14	17	30	49	19	29

1/ Fruit and nut, vegetable, and poultry farms are excluded.
2/ Includes farms in the Appalachian, Southeast, and Delta States Regions only.

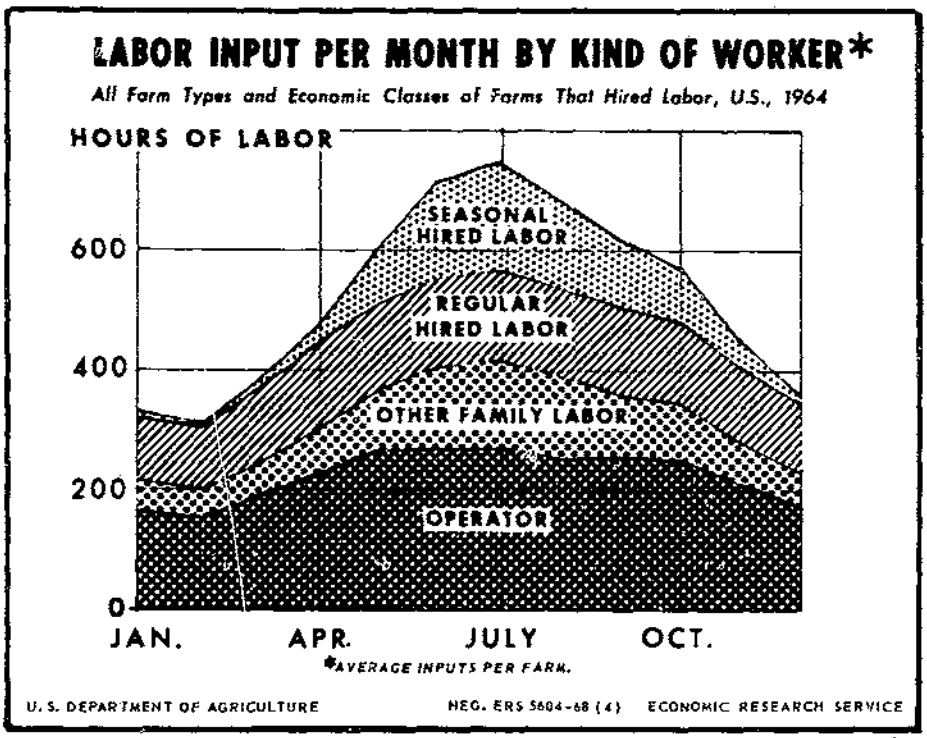

Figure 4

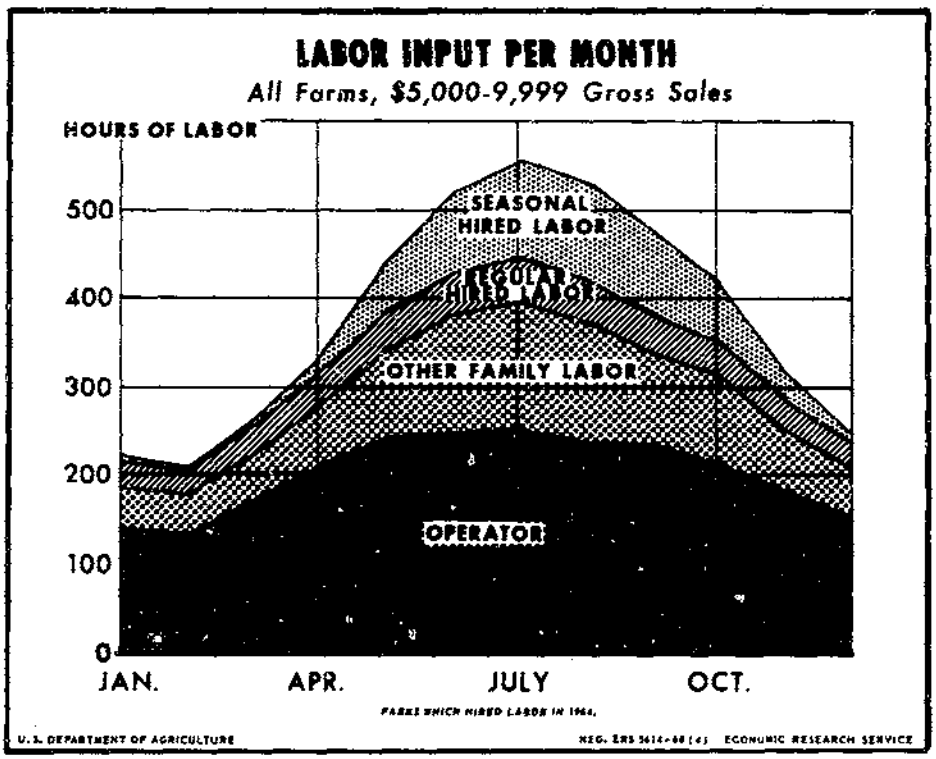

Figure 5

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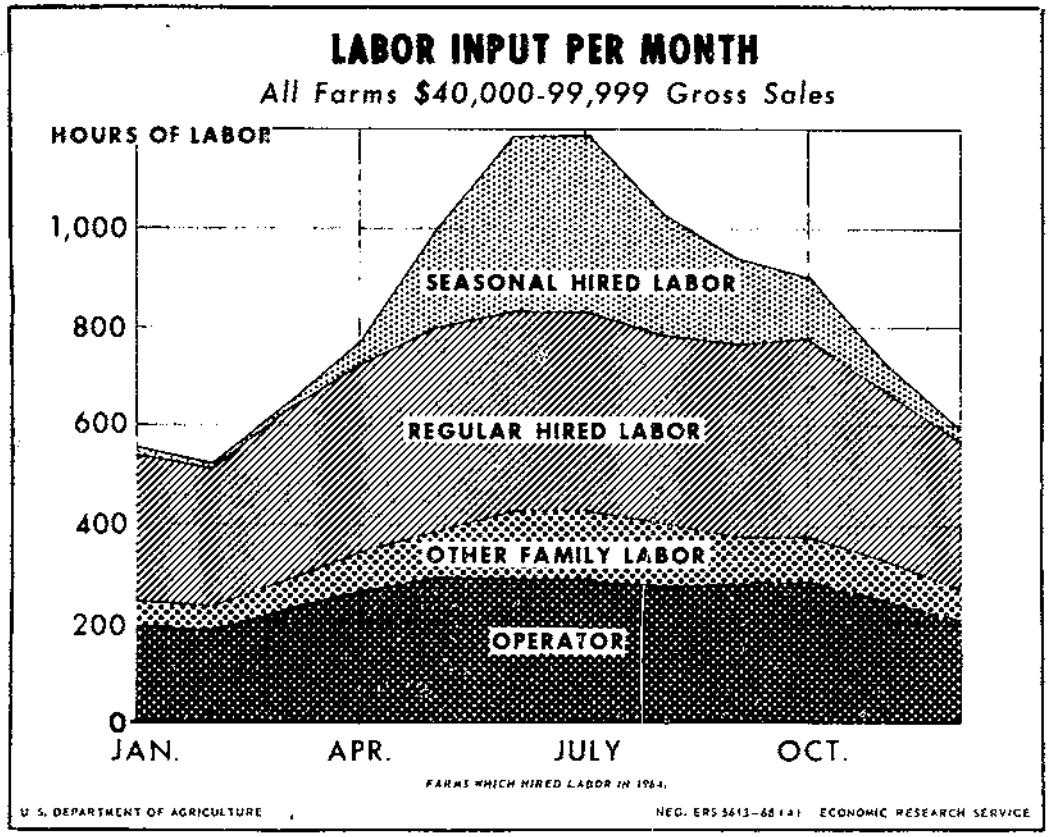

Figure 6

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Table 12.--Hours worked per month on the farm in the high and low labor months, by farm operators, farm wives, other family members, and hired workers, for farms which hired labor, by value of farm products sold, 48 State survey, 1964 1/

Value of farm products sold	Hours worked per month by-- 2/									
	All workers		Operator		Wife		Other family members		All hired workers	
	High month	Low month	High month	Low month	High month	Low month	High month	Low month	High month	Low month
	Hours									
$2,500-$4,999 3/	4/519	131	199	90	4/56	8	105	16	4/189	16
$5,000-$9,999	555	208	252	134	48	18	95	24	160	30
$10,000-$19,999	657	266	288	162	46	20	102	29	219	54
$20,000-$39,999	828	365	5/295	178	32	15	106	42	394	129
$40,000-$99,999	1,192	523	5/290	182	18	7	120	48	766	285
$100,000-$499,999	6/2,521	1,189	5/280	194	6/12	6	119	50	6/2,116	938
$500,000 and over	8,408	4,775	4/239	190	20	19	7/138	102	4/8,025	4,463
All groups	745	308	271	154	41	16	103	32	328	105

1/ Fruit and nut, vegetable, and poultry farms are excluded.
2/ July was the high or tied for high labor month and February was the low month, unless footnoted otherwise.
3/ Includes farms in the Appalachian, Southeast, and Delta States Regions only.
4/ High month was September.
5/ High month was May.
6/ High month was June.
7/ High month was August.

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Thus, the operators of larger farms are more fully employed on the farm throughout the year than the small farm operator. The latter, however, may have had more off-farm employment.

Farm wives did most of their farmwork in July, when they averaged 41 hours. Farmwork performed by the wife decreased steadily as farm size increased, from 56 hours a month on the smallest farms to 12 hours on farms with sales of $100,000 to $499,999 a year. Generally, wives did very little farmwork during any month on farms with sales of more than $40,000 a year.

The farmwork performed by other family members varied more during the year than that for the farm operator or his wife. Other family members worked more than 3 times as many hours in the high month as the low month. The farm operator's wife worked over twice as many hours in the high as in the low month. During the slack season on farms with less than $10,000 sales, other family members worked about as many hours per month as the hired workers, but during the months of peak labor demand, regular hired workers did many more hours work per month. On farms with sales over $5,000, hired workers averaged more hours even in the low labor month than the other family members.

Hired Labor

The greatest demand for regular hired workers occurred on most farms in July. However, the smallest and largest farms in terms of sales required more hired work during September. On farms of all sizes, hired workers averaged fewer hours in February. Hired labor in the peak month ranged from 160 hours on the $5,000 to $9,999 sales group to over 8,000 hours on the largest farms.

Work hours for hired workers varied more during the year than for any of the family members. The demand for hired labor was subject to the widest seasonal variation on the smallest farms. These farms used 12 times as much hired labor in the peak month as they did in the low labor month, while the largest farms used only 80 percent more hours.

Operators with sales under $20,000 contributed more hours of work--even in peak months--than their hired workers. On farms with sales of $20,000 to $39,999, the operator hired more labor than he put in, in most months. Hired workers put in more hours than operators, even in the low labor months, on farms with sales over $40,000.

Labor requirements increased steadily from February to July--100 percent for the family and 50 percent for regular hired labor (table 13). The demand for seasonal labor increased much more during this period--from 4 hours in February to 174 hours in July, or from 1 to 23 percent of the total labor input.

The peaks of labor input and the composition of that labor are not only affected by region and farm size (based on value of sales) but also by type of farm. The kind of worker used for seasonal labor depends to a great extent upon the type of farm. Figure 7 shows the seasonal farm labor pattern for cash grain farms. Seasonal hired labor rises sharply, peaking in June. On dairy farms, peak seasonal demand for labor utilizes family labor and some seasonal hired help. The regular hired labor does not change with the seasons (fig. 8).

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Table 13.--Monthly hours worked on farms which hired labor and distribution between family and hired workers, 48 State survey, 1964 1/

Month 2/	Hours of farmwork				Percentage of hours by--		
	Total	Family	Hired		Family	Hired	
			Regular	Seasonal		Regular	Seasonal
	Hours	Hours	Hours	Hours	Percent	Percent	Percent
January------	327	214	106	7	66	32	2
February-----	308	203	101	4	66	33	1
March--------	380	249	122	9	66	32	2
April--------	474	308	136	30	65	29	6
May----------	610	366	149	95	60	24	16
June---------	713	406	151	156	57	21	22
July---------	745	417	152	176	56	20	24
August-------	685	393	146	146	58	21	21
September----	616	361	144	111	59	23	18
October------	571	346	140	85	61	24	15
November-----	447	283	125	39	63	28	9
December-----	355	233	110	12	66	31	3
Total------	6,232	3,780	1,584	868	61	25	14

1/ Fruit and nut, vegetable, and poultry farms are excluded.
2/ For detail on hours worked per month by economic class, see appendix table 20.

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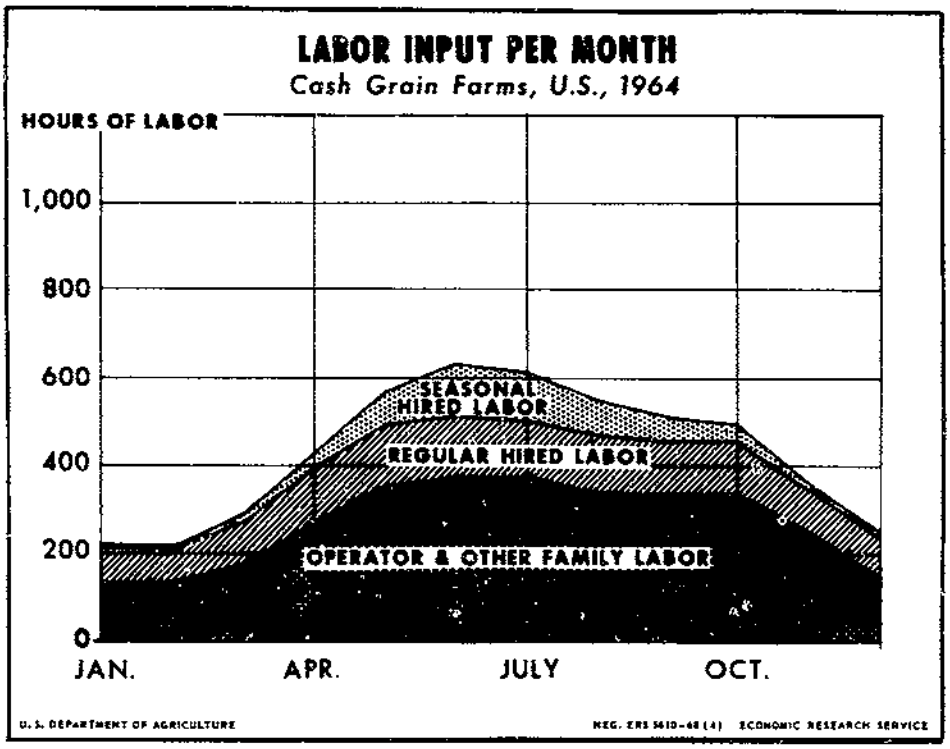

Figure 7

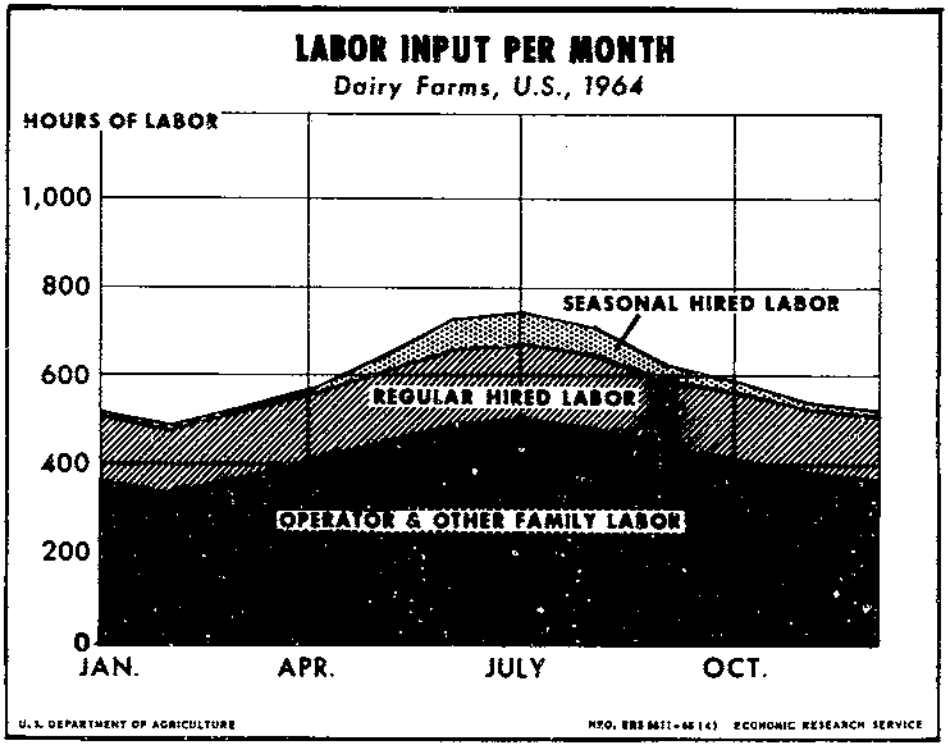

Figure 8

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However, on tobacco farms between June and September there is a sharp increase in use of hired labor, particularly seasonal help. Although there are seasonal increases in both family and regular hired help, most of the tobacco farms' seasonal increase comes from temporary hired workers employed to harvest, barn, and prepare tobacco for market (fig. 9).

LABOR EFFICIENCY

While technological innovations have greatly reduced the need for labor in farm production, labor is still a major farm input. Thus, labor efficiency continues to concern farm operators.

An efficient farmer or any other manager seeks to maximize returns to capital and labor. Labor efficiency can be measured in several ways. In this report, efficiency is measured in terms of labor input per acre of cropland and per $100 of gross sales.

Labor Input Per Acre of Cropland

One method of improving efficiency under certain conditions is to increase the scale of operation. Increases or decreases in input costs associated with differences in farm size are an indication of returns to scale. An increase in the labor required per acre associated with smaller farm size suggests labor disutility and less mechanization or a lower capital investment-to-labor ratio on the smaller farms.

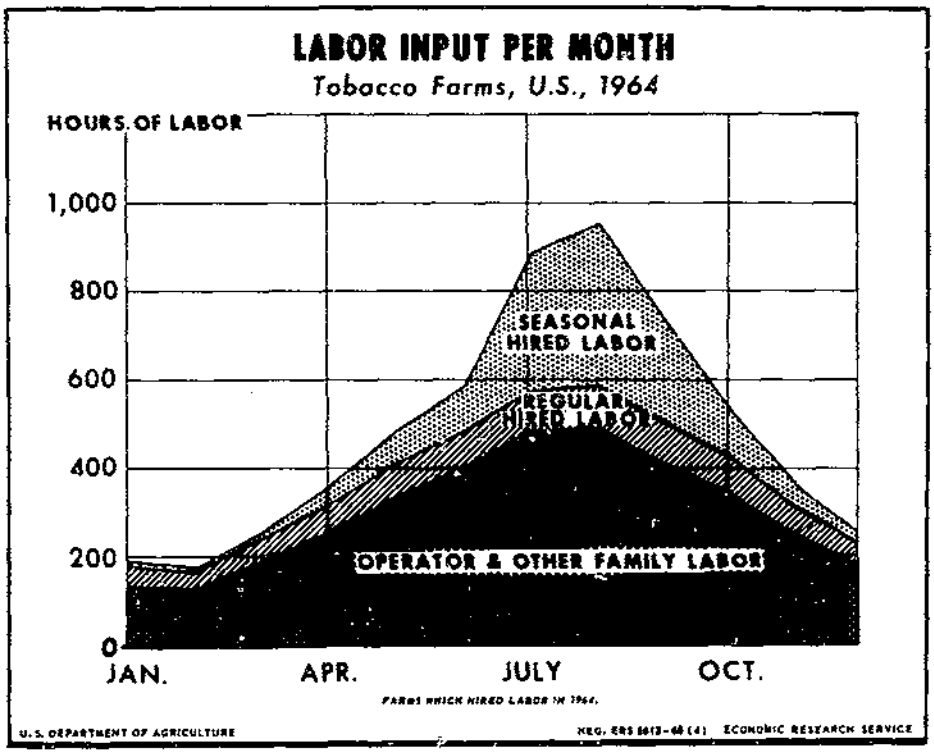

Figure 9

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Among the farms surveyed, those with the highest total labor used per acre were tobacco, dairy, and cotton farms. Hired labor used per acre was highest on tobacco, cotton, and other field crop farms.

Total labor per acre went down for most types of farms as farm size increased, indicating that there may have been considerable inefficiency in the use of farm equipment, especially on small farms (table 14). The smallest farms required more than seven times as many hours of labor per acre as the largest farms. On the other hand, hours of hired labor per acre generally remained the same or increased with farm size for most types of farms as sales went above $5,000 a year, reflecting the tendency for large farms to depend relatively more on hired labor. Farms with sales less than $5,000 a year generally used more hired labor per acre than any larger farms. When the surveyed farms were grouped by type, some differences appeared. For cash grain farms, total man-hours required to produce an acre of crops decreased from 39 hours for the smallest (Southern) farms to 9 hours for farms with sales of $20,000 a year or more (table 14). Also, hired labor required per acre was highest on cash grain farms with sales of $2,500 to $4,999 and least for farms with sales of $5,000 to $19,999 a year.

Hours of labor per acre required on tobacco farms was high at all sales levels, reflecting inability to mechanize tobacco farming. Total labor per acre on tobacco farms with sales over $40,000 a year was only two-thirds the labor used per acre on farms with sales less than $5,000 a year.

Use of hired labor per acre for most types of farms increased with value of sales, yet all commercial farms remained constant up to $40,000 and over. The high use of hired labor on small farms ($2,500 to $4,999) indicates that these are primarily part-time farms. The operator has a nonfarm job and hires much of his farmwork done.

On cotton farms, man-hours per acre decreased as farm size increased. At 24 hours per acre, labor requirements per acre for hired help was highest for farms in the $5,000 and under group--double the requirements for farms with $5,000 to $19,999, and somewhat higher than the largest farms. Most labor on cotton farms with sales over $20,000 was hired.

There was a very low ratio of hired man-hours per acre on livestock ranches and it did not change as size of farms increased. Other livestock farms also had a low hired labor per acre ratio and low manpower requirements per $100 of gross sales. There was a downward trend in total man-hour requirements from the smallest farm size to the largest. The same number of hired man-hours per acre was required on the small farms as on the large farms. However, the wage bill was much less per $100 sales on the large farms. Thus, the gross returns per hour of hired labor was about 5 times greater for the large other livestock farms (appendix table 21).

When dairy farms were classified by size in terms of gross sales, total hours per acre fluctuated between 35 and 45 hours. However, hired labor requirements increased with increasing farm size. Consequently, the dairy farm wage bill per $100 sales went up rapidly as farm size increased.

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Table 14.--Hours worked per acre of cropland on farms which hired labor, by value of farm products sold, and type of farm, 48 State survey, 1964 1/

Type of farm	Hours per acre on farms with sales of--					
	$2,500 to $4,999 2/	$5,000 to $9,999	$10,000 to $19,999	$20,000 to $39,999	$40,000 and over	Average of all farms
	Hours					
All labor						
Cash grain	39	13	11	9	10	16
Tobacco	91	90	85	72	60	82
Cotton	103	34	24	27	23	32
Other field crops	86	40	28	29	18	30
Dairy farms	45	41	35	35	36	40
Livestock ranches	2	6	6	2	1	3
Other livestock	24	22	20	20	17	20
General farms	47	7	5	3	4	6
All farms	53	19	15	10	7	13
Hired labor						
Cash grain	13	2	2	3	7	6
Tobacco	19	24	37	48	47	31
Cotton	24	12	11	19	20	20
Other field crops	32	11	12	19	14	14
Dairy farms	3	7	7	13	23	14
Livestock ranches	3/	1	1	1	1	1
Other livestock	7	4	4	5	7	5
General farms	13	2	2	2	3	3
All farms	13	4	4	4	7	5

1/ Fruit and nut, vegetable, and poultry farms are excluded.
2/ Includes farms in the Appalachian, Southeast, and Delta States Regions only.
3/ Data not available for livestock ranches at this sales level.

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Labor Input Per $100 Gross Sales

The results of this survey tend to confirm, in the farming sector of the economy, the classical economic concept of returns to scale. As farms increased in size, the hours of labor required per $100 sales decreased rapidly. On farms that used hired workers, the labor input decreased from an average of 80 hours per $100 sales for farms with sales of $2,500 to $4,999 a year to 14 hours for farms with sales of over $40,000 a year (table 15).

While the labor input requirement was less for larger farms of all types, returns to scale were most evident for livestock ranches where large-scale operation is essential to labor efficiency. Livestock ranches with sales of over $40,000 a year required about one-tenth as much labor per $100 sales as ranches with sales of $2,500 to $4,999 a year.

Returns to scale should be reflected on farms which have taken advantage of technological innovation. However, farms specializing in cotton, where many technological advances have occurred, showed less improvement in labor efficiency than most other farm types as size of farms increased. On the other hand, livestock ranches and other livestock farms, where technological advances have been fewer, substantial gains in labor efficiency occurred with each increase in farm size.

Table 15.--Hours worked per $100 gross sales on farms which hired labor, by value of farm products sold, and type of farm, 48 State survey, 1964 1/

Type of farm	Hours per $100 gross sales on farms with sales of--					
	$2,500 to $4,999 2/	$5,000 to $9,999	$10,000 to $19,999	$20,000 to $39,999	$40,000 and over	Average of all farms
	Hours					
Cash grain	72	30	22	17	13	19
Cotton	104	56	33	28	24	33
Tobacco	87	60	46	34	---	53
Other field crops	76	50	33	22	18	29
Dairy	63	59	40	29	14	34
Livestock ranches	103	53	37	25	11	24
Other livestock	67	39	26	17	9	20
General	75	41	26	19	10	19
All farms	80	48	33	24	14	27

1/ Fruit and nut, vegetable, and poultry farms are excluded.
2/ Includes farms in the Appalachian, Southeast, and Delta States Regions only.

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Labor requirements per $100 sales were highest for tobacco farms, and returns to scale were least evident on these farms. The high labor requirement is due to the need for much hand labor in tobacco production. Tobacco is harvested in much the same way as it has always been. However, there is considerable research and development underway on equipment for harvesting certain varieties which should drastically reduce the labor requirements.

Gross receipts for cotton farms with $2,500 to $5,000 sales a year amounted to less than $1 per hour worked. For every $100 of gross sales, a small Southern cotton farmer used about 26 hours of hired labor, 42 hours of his own time and over 36 hours of unpaid family help--a total of 104 hours. With a labor input of 104 hours per $100 gross sales, the farm operator and his family receive little compensation for their work after production expenses have been paid. Farmers operating under such conditions would find it difficult to pay hired help a competitive wage rate.

CONCENTRATION OF LABOR

Many economists have noted for some time the great concentration of agricultural production among a few large farms, which, in turn, use most of the hired labor. Due to the small sample of farms on which this study is based, and because labor questions on two of the most labor-intensive types of farming (fruits and nuts, and vegetables) were excluded, the results are not as pronounced as those shown in the 1964 Census of Agriculture special survey. 1/ However, even the data in this study indicate a concentration of workers on a relatively small number of farms which account for the major proportion of production value. About 26 percent of the farms produced 57 percent of the commodities sold. These farms required 64 percent of the total man-hours of hired labor and utilized 74 percent of the man-hours of regular hired labor (table 16).

This concentration of labor is primarily on large farm enterprises with sales over $20,000. Farms with sales less than $10,000 comprised 39 percent of the farms, but only used one-sixth of the total hired man-hours and accounted for only one-sixth of gross farm sales.

1/ The 1964 Census of Agriculture special labor survey indicated 7.3 percent of the farms paid 80 percent of the wage bill and accounted for 42 percent of farm sales.

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Table 16.--Number of farms, man-hours of hired labor, and value of farm products sold by economic class, 48 State survey, 1964

Value of farm products sold	Farms	Man-hours of hired labor			Value of farm products sold		
		Total	Regular hired	Seasonal hired	Total	Crop value	Livestock value
	Number						
All farms 1/	2/8,870	13,030,030	8,204,750	4,825,280	194,253,000	80,495,250	113,757,750
	Percent						
$2,500-$4,999 3/	7	4	1	7	2	3	1
$5,000-$9,999	32	12	8	20	14	15	13
$10,000-$19,999	35	21	17	24	27	26	27
$20,000-$39,999	18	25	25	23	24	24	24
$40,000 and over	8	38	49	26	33	32	35

1/ Data exclude fruit and nut, vegetable, and poultry farms. Had those farms been included, the data would show a much greater percentage of hired labor on relatively few large farms.

2/ Data on value of sales acquired from only 8,870 farms. Therefore, number of farms and man-hours of labor are somewhat lower than if total farms surveyed had been included, and as shown previously.

3/ Includes farms in the Appalachian, Southeast, and Delta States Regions only.

APPENDIX A, STATISTICAL TABLES

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Appendix table 17.--Annual hours worked and percentage contributed by family and hired workers on farms which hired labor, by type of farm and value of farm products sold, 48 State survey, 1964 1/

Type of farm and value of farm products sold	Annual hours of farmwork per farm	Percentage of total hours contributed by--						
		Family workers				Hired workers		
		Total	Operator	Wife	Other	Total	Regular	Seasonal
	Hours	Percent						
Cash grain								
$2,500-$4,999	3,176	67	64	2	1	33	10	23
$5,000-$9,999	3,181	84	68	7	9	16	6	10
$10,000-$19,999	4,049	80	63	5	12	20	11	9
$20,000-$39,999	5,084	69	54	4	11	31	21	10
$40,000 and over	11,779	35	26	1	8	65	49	16
All cash grain farms	5,111	63	49	4	10	37	26	11
Cotton								
$2,500-$4,999	4,408	70	40	9	21	30	3	27
$5,000-$9,999	5,014	65	44	5	16	35	8	27
$10,000-$19,999	6,025	52	40	3	9	48	24	24
$20,000-$39,999	9,784	32	27	1	4	68	31	37
$40,000 and over	21,552	15	12	1	2	85	53	32
All cotton farms	8,325	38	28	2	8	62	32	30
Tobacco								
$2,500-$4,999	3,901	79	48	12	19	21	8	13
$5,000-$9,999	5,202	73	42	12	19	27	8	19
$10,000-$19,999	7,063	56	32	8	16	44	16	28
$20,000-$39,999	10,890	33	24	8	11	67	26	41
$40,000 and over	12,815	21	17	1	3	79	50	29
All tobacco farms	5,757	62	37	9	16	38	14	24
Other field crops								
$2,500-$4,999	5,161	61	36	4	22	38	15	23
$5,000-$9,999	4,676	73	42	12	19	27	8	19
$10,000-$19,999	6,648	56	32	8	16	44	16	28
$20,000-$39,999	7,793	33	22	3	8	67	26	41
$40,000 and over	9,823	21	17	1	3	79	50	29
All other field crop farms	6,583	53	39	2	12	47	23	24
Dairy								
$2,500-$4,999	3,860	94	63	20	11	6	1	5
$5,000-$9,999	5,629	83	55	14	14	17	13	4
$10,000-$19,999	6,351	79	55	10	14	21	17	4
$20,000-$39,999	8,452	64	43	6	14	36	32	4
$40,000 and over	13,687	36	25	2	9	64	59	5
All dairy farms	7,234	69	47	9	13	31	27	4

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Appendix table 17.--Annual hours worked and percentage contributed by family and hired workers on farms which hired labor, by type of farm and value of farm products sold, 48 State survey, 1964 1/--Continued

Type of farm and value of farm products sold	Annual hours of farmwork per farm	Percentage of total hours contributed by--						
		Family workers				Hired workers		
		Total	Operator	Wife	Other	Total	Regular	Seasonal
	Hours	Percent						
Livestock ranches								
$2,500-$4,999	3,668	89	89	0	0	11	0	11
$5,000-$9,999	4,878	78	56	9	13	22	13	9
$10,000-$19,999	5,706	84	57	8	19	16	12	4
$20,000-$39,999	6,415	64	45	4	15	36	29	7
$40,000 and over	14,694	31	22	1	8	69	59	10
All livestock ranches	7,611	58	40	5	13	42	34	8
All other livestock								
$2,500-$4,999	3,241	72	53	7	12	28	14	14
$5,000-$9,999	3,709	80	63	7	10	20	13	7
$10,000-$19,999	4,141	82	65	7	10	18	14	4
$20,000-$39,999	5,238	76	58	6	12	24	19	5
$40,000 and over	7,258	59	42	2	15	41	35	6
All other livestock farms	4,677	74	56	6	12	26	20	6
General								
$2,500-$4,999	3,884	73	50	11	12	27	4	23
$5,000-$9,999	4,259	74	57	7	10	26	11	15
$10,000-$19,999	5,364	70	54	6	10	30	16	14
$20,000-$39,999	7,379	54	39	3	12	46	31	15
$40,000 and over	14,023	30	22	1	7	70	49	21
All general farms	6,767	54	40	4	10	46	29	17
All farm types								
$2,500-$4,999	3,901	76	48	11	17	24	7	17
$5,000-$9,999	4,534	77	54	9	14	23	10	13
$10,000-$19,999	5,381	73	54	7	12	27	16	11
$20,000-$39,999	7,025	59	44	4	11	41	27	14
$40,000 and over	12,878	12	8	1	3	88	73	15
All farm types of all sizes 2/	6,232	61	44	6	11	39	25	14

1/ Fruit and nut, vegetable, and poultry farms are excluded.
2/ Includes farms with farm sales of $5,000 or more in all regions except the South. Appalachian, Southeast, and Delta States Regions include farms with sales of $2,500 or more.

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Appendix table 18.--Annual hours worked and percentage contributed by family and hired workers on farms hiring labor, by regions and by value of farm products sold, 48 State survey, 1964 1/

Region and value of farm products sold	Annual hours of farmwork per farm	Percentage of total performed by--					
		Family workers			Hired workers		
		All	Operator	Other	All	Regular	Seasonal
	Hours	Percent					
Northeast							
$2,500-$4,999	---	---	---	---	---	---	---
$5,000-$9,999	5,665	78	53	25	22	16	6
$10,000-$19,999	6,468	71	52	19	29	24	5
$20,000-$39,999	8,952	54	40	14	46	39	7
$40,000-$99,999	12,327	41	30	11	59	55	4
$100,000-$499,999	57,726	12	7	5	88	28	60
$500,000 and over	---	---	---	---	---	---	---
All Northeast	7,709	61	43	18	39	31	8
Lake States							
$2,500-$4,999	---	---	---	---	---	---	---
$5,000-$9,999	5,181	86	58	28	14	9	5
$10,000-$19,999	6,045	85	56	29	15	11	4
$20,000-$39,999	7,341	76	49	27	24	18	6
$40,000-$99,999	7,987	63	42	21	37	27	10
$100,000-$499,999	19,274	19	14	5	81	30	51
$500,000 and over	---	---	---	---	---	---	---
All Lake States	6,178	81	54	27	19	13	6
Corn Belt							
$2,500-$4,999	---	---	---	---	---	---	---
$5,000-$9,999	3,412	90	70	20	10	5	5
$10,000-$19,999	4,096	88	68	20	12	8	4
$20,000-$39,999	5,588	77	56	21	23	18	5
$40,000-$99,999	6,714	65	45	20	35	27	8
$100,000-$499,999	10,116	42	30	12	58	54	4
$500,000 and over	36,823	22	11	11	78	18	60
All Corn Belt	4,871	78	58	20	22	16	6
Northern Plains							
$2,500-$4,999	---	---	---	---	---	---	---
$5,000-$9,999	3,830	88	72	16	12	6	6
$10,000-$19,999	4,562	85	65	20	15	9	6
$20,000-$39,999	5,433	72	54	18	28	19	9
$40,000-$99,999	6,985	60	45	15	40	31	9
$100,000-$499,999	18,743	56	35	21	44	41	3
$500,000 and over	26,830	23	11	12	77	76	1
All Northern Plains	4,997	76	59	17	24	16	8

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Appendix table 18.--Annual hours worked and percentage contributed by family and hired workers on farms hiring labor, by regions and by value of farm products sold, 48 State survey, 1964 1/--Con.

Region and value of farm products sold	Annual hours of farmwork per farm	Percentage of total performed by--					
		Family workers			Hired workers		
		All	Operator	Other	All	Regular	Seasonal
	Hours	Percent					
Appalachian							
$2,500-$4,999	3,672	80	54	26	20	9	11
$5,000-$9,999	4,741	75	47	28	25	12	13
$10,000-$19,999	6,190	62	38	24	38	18	20
$20,000-$39,999	9,132	39	28	11	61	38	23
$40,000-$99,999	13,564	25	18	7	75	47	28
$100,000-$499,999	29,627	8	8	0	92	67	25
$500,000 and over	---	---	---	---	---	---	---
All Appalachian	5,866	58	38	20	42	23	19
Southeast							
$2,500-$4,999	4,437	68	41	27	32	5	27
$5,000-$9,999	5,467	61	40	21	39	9	30
$10,000-$19,999	7,628	39	30	9	61	26	35
$20,000-$39,999	10,875	26	23	3	74	37	37
$40,000-$99,999	12,959	23	21	2	77	58	19
$100,000-$499,999	22,365	8	6	2	92	84	8
$500,000 and over	34,215	15	11	4	85	85	0
All Southeast	7,035	44	31	13	56	27	29
Delta							
$2,500-$4,999	4,073	73	45	28	27	6	21
$5,000-$9,999	5,247	61	38	23	39	20	19
$10,000-$19,999	5,128	60	46	14	40	24	16
$20,000-$39,999	8,600	34	30	4	66	35	31
$40,000-$99,999	19,291	16	14	2	84	51	33
$100,000-$499,999	35,259	9	8	1	91	60	31
$500,000 and over	129,914	2	2	0	98	65	33
All Delta	8,195	38	27	11	62	34	28
Southern Plains							
$2,500-$4,999	---	---	---	---	---	---	---
$5,000-$9,999	3,877	73	58	15	27	14	13
$10,000-$19,999	5,228	64	51	13	36	21	15
$20,000-$39,999	6,969	50	40	10	50	33	17
$40,000-$99,999	10,739	34	28	6	66	52	14
$100,000-$499,999	18,527	18	17	1	82	68	14
$500,000 and over	14,559	14	14	0	86	86	0
All Southern Plains	6,274	52	42	10	48	34	14

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Appendix table 18.--Annual hours worked and percentage contributed by family and hired workers on farms hiring labor, by regions and by value of farm products sold, 48 State survey, 1964 1/--Con.

Region and value of farm products sold	Annual hours of farmwork per farm	Percentage of total performed by--					
		Family workers			Hired workers		
		All	Operator	Other	All	Regular	Seasonal
	Hours	Percent					
Mountain							
$2,500-$4,999	---	---	---	---	---	---	---
$5,000-$9,999	4,768	72	55	17	28	14	14
$10,000-$19,999	6,586	68	48	20	32	18	14
$20,000-$39,999	8,123	55	38	17	45	28	17
$40,000-$99,999	11,394	40	26	14	60	45	15
$100,000-$499,999	29,905	18	11	7	82	70	12
$500,000 and over	---	---	---	---	---	---	---
All Mountain	9,231	47	33	14	53	40	13
Pacific							
$2,500-$4,999	---	---	---	---	---	---	---
$5,000-$9,999	4,564	73	59	14	27	20	7
$10,000-$19,999	4,984	68	55	13	32	23	9
$20,000-$39,999	6,910	54	41	13	46	32	14
$40,000-$99,999	10,406	40	32	8	60	51	9
$100,000-$499,999	26,043	14	13	1	86	72	14
$500,000 and over	---	---	---	---	---	---	---
All Pacific	8,152	45	36	9	55	44	11
48 States							
$2,500-$4,999	3,901	76	48	28	24	7	17
$5,000-$9,999	4,534	77	54	23	23	10	13
$10,000-$19,999	5,383	73	53	20	27	16	11
$20,000-$39,999	7,025	59	44	15	41	27	14
$40,000-$99,999	10,089	41	30	11	59	43	16
$100,000-$499,999	21,648	19	14	5	81	62	19
$500,000 and over	72,417	6	4	2	94	80	14
All 48 States 2/	6,232	61	44	17	39	25	14

1/ Fruit and nut, vegetable, and poultry farms are excluded.
2/ Includes farms with farm product sales of $5,000 a year or more in all regions except the South. Appalachian, Southeast, and Delta States Regions include farms with sales of $2,500 or more.

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Appendix table 19.--Hours worked per week by family and hired workers by region and value of farm products sold on farms which hired labor, 48 State survey, 1964 1/

Region and value of farm products sold	Family workers			Regular hired workers
	All	Operator	Wife	
	Hours			
Northeast				
$2,500-$4,999	---	---	---	---
$5,000-$9,999	53	64	35	49
$10,000-$19,999	49	70	22	58
$20,000-$39,999	57	73	23	59
$40,000-$99,999	60	75	18	63
$100,000-$499,999	60	75	6	61
$500,000 and over	---	---	---	---
Northeast, all classes	53	70	24	59
Appalachian				
$2,500-$4,999	38	40	29	34
$5,000-$9,999	43	46	32	42
$10,000-$19,999	46	49	32	43
$20,000-$39,999	49	52	27	47
$40,000-$99,999	50	50	31	45
$100,000-$499,999	52	52	---	42
$500,000 and over	---	---	---	---
Appalachian, all classes	43	46	31	44
Southeast				
$2,500-$4,999	30	37	27	35
$5,000-$9,999	43	45	25	39
$10,000-$19,999	46	49	22	51
$20,000-$39,999	46	50	19	52
$40,000-$99,999	52	54	---	51
$100,000-$499,999	48	55	---	60
$500,000 and over	49	72	27	55
Southeast, all classes	43	45	25	50
Delta States				
$2,500-$4,999	38	41	25	36
$5,000-$9,999	41	44	31	37
$10,000-$19,999	46	49	29	43
$20,000-$39,999	50	52	24	48
$40,000-$99,999	55	53	---	63
$100,000-$499,999	59	53	---	51
$500,000 and over	57	57	---	55
Delta States, all classes	44	47	28	52

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Appendix table 19.--Hours worked per week by family and hired workers by region and value of farm products sold on farms which hired labor, 48 State survey, 1964 1/--Con.

Region and value of farm products sold	Family workers			Regular hired workers
	All	Operator	Wife	
	Hours			
Corn Belt				
$2,500-$4,999	---	---	---	---
$5,000-$9,999	41	49	21	28
$10,000-$19,999	45	56	20	46
$20,000-$39,999	49	63	21	50
$40,000-$99,999	51	61	21	54
$100,000-$499,999	54	61	18	57
$500,000 and over	88	78	---	62
Corn Belt, all classes	46	57	21	50
Lake States				
$2,500-$4,999	---	---	---	---
$5,000-$9,999	49	27	27	50
$10,000-$19,999	50	26	26	61
$20,000-$39,999	55	23	23	66
$40,000-$99,999	54	17	17	61
$100,000-$499,999	52	---	---	82
$500,000 and over	---	---	---	---
Lake States, all classes	51	26	26	61
Northern Plains				
$2,500-$4,999	---	---	---	---
$5,000-$9,999	47	20	20	47
$10,000-$19,999	49	20	20	52
$20,000-$39,999	49	20	20	50
$40,000-$99,999	54	17	17	59
$100,000-$499,999	61	28	28	62
$500,000 and over	38	4	4	55
Northern Plains, all classes	49	20	20	54
Southern Plains				
$2,500-$4,999	---	---	---	---
$5,000-$9,999	39	24	24	44
$10,000-$19,999	42	26	26	52
$20,000-$39,999	44	31	31	53
$40,000-$99,999	55	20	20	56
$100,000-$499,999	31	21	21	56
$500,000 and over	41	---	---	39
Southern Plains, all classes	48	26	26	53

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Appendix table 19.--Hours worked per week by family and hired workers by region and value of farm products sold on farms which hired labor, 48 State survey, 1964 1/--Con.

Region and value of farm products sold	Family workers			Regular hired workers
	All	Operator	Wife	
	Hours			
Mountain				
$2,500-$4,999	---	---	---	---
$5,000-$9,999	48	54	25	49
$10,000-$19,999	53	64	26	56
$20,000-$39,999	54	62	16	56
$40,000-$99,999	58	62	19	60
$100,000-$499,999	63	67	17	65
$500,000 and over	---	---	---	---
Mountain, all classes	54	61	22	60
Pacific				
$2,500-$4,999	---	---	---	---
$5,000-$9,999	48	55	34	45
$10,000-$19,999	49	59	24	50
$20,000-$39,999	48	58	29	58
$40,000-$99,999	54	65	20	88
$100,000-$499,999	70	74	27	63
$500,000 and over	---	---	---	---
Pacific, all classes	51	60	28	65
48 States				
$2,500-$4,999 2/	38	40	28	34
$5,000-$9,999	44	51	27	42
$10,000-$19,999	48	58	24	50
$20,000-$39,999	51	61	22	52
$40,000-$99,999	54	61	20	58
$100,000-$499,999	59	62	25	57
$500,000 and over	49	60	16	57
48 States, all classes	47	55	25	53

1/ Fruit and nut, vegetable, and poultry farms are excluded.
2/ Includes farms in the Appalachian, Southeast, and Delta States Regions only.

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Appendix table 20.--Monthly hours worked by family and hired workers on farms which hired labor, by value of farm products sold, 48 State survey, 1964 1/

Value of farm products sold and month	Total hours 2/	Family workers				Hired workers		
		Total	Operator	Wife	Other	Total	Regular	Seasonal
	Hours							
$2,500-$4,999 3/								
January	140	120	95	9	16	20	13	7
February	131	115	90	8	16	16	12	4
March	188	163	127	10	24	25	19	6
April	260	222	162	22	37	38	25	13
May	375	297	189	45	62	78	30	48
June	441	346	195	50	100	95	27	68
July	482	356	199	51	105	126	30	96
August	475	337	192	51	94	138	31	107
September	519	329	193	56	79	189	29	160
October	417	293	180	52	61	122	26	96
November	294	219	146	38	34	73	21	52
December	175	151	111	17	22	24	14	10
Total for 1964	3,901	2,954	1,884	414	654	947	283	664
$5,000-$9,999								
January	220	187	141	19	26	33	28	5
February	208	178	134	18	24	30	27	3
March	260	222	170	21	30	38	33	5
April	333	278	211	28	38	55	38	17
May	440	340	243	42	54	100	44	56
June	522	381	247	45	88	141	47	94
July	555	396	252	48	95	159	49	110
August	533	373	238	46	89	160	48	112
September	475	338	235	44	58	135	44	91
October	420	313	224	41	47	105	39	66
November	317	251	183	33	34	65	34	31
December	247	207	154	24	28	39	31	8
Total for 1964	4,534	3,471	2,439	415	617	1,061	468	593
$10,000-$19,999								
January	283	224	171	21	31	59	55	4
February	266	212	162	20	29	54	51	3
March	327	259	200	23	34	68	63	5
April	414	321	247	31	42	93	72	21
May	521	379	282	40	56	142	81	61
June	616	421	284	42	93	195	84	111
July	657	438	288	46	102	219	86	133
August	613	413	271	44	97	200	83	117
September	522	371	270	42	58	150	76	74
October	485	358	266	40	51	126	71	55
November	370	289	221	28	40	80	61	19
December	303	240	183	23	33	63	55	8
Total for 1964	5,383	3,928	2,850	405	672	1,454	843	611

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Appendix table 20.--Monthly hours worked by family and hired workers on farms which hired labor, by value of farm products sold, 48 State survey, 1964 1/--Continued

Value of farm products sold and month	Total hours 2/	Family workers				Hired workers		
		Total	Operator	Wife	Other	Total	Regular	Seasonal
	Hours							
$20,000-$39,999								
January	386	250	189	16	44	136	129	7
February	365	236	178	15	42	129	123	6
March	439	281	215	17	48	158	147	11
April	546	343	262	23	57	203	167	36
May	683	393	295	31	66	290	182	108
June	789	427	293	32	102	362	189	173
July	828	434	295	32	106	394	191	203
August	748	411	278	30	101	337	181	156
September	659	377	281	30	65	281	170	111
October	642	376	282	31	62	265	168	97
November	517	321	243	23	53	195	147	48
December	418	266	200	17	47	152	132	20
Total for 1964	7,025	4,120	3,016	303	799	2,904	1,930	974
$40,000-$99,999								
January	557	252	193	8	51	305	290	15
February	523	238	182	7	48	285	274	11
March	649	287	221	8	56	362	345	17
April	770	343	262	12	68	427	382	45
May	1,002	387	290	15	81	615	411	204
June	1,184	422	287	18	116	762	408	354
July	1,192	426	287	18	120	766	404	362
August	1,032	403	272	16	113	629	383	246
September	947	375	278	17	79	571	393	178
October	900	377	284	18	74	523	401	122
November	729	323	246	13	63	404	350	54
December	598	268	205	9	54	329	306	23
Total for 1964	10,089	4,107	3,012	164	930	5,980	4,353	1,627
$100,000-$499,999								
January	1,284	266	205	6	53	1,018	975	43
February	1,189	251	194	6	50	938	916	22
March	1,427	300	232	7	61	1,127	1,082	45
April	1,748	334	256	7	69	1,414	1,145	269
May	2,266	365	280	8	77	1,901	1,228	673
June	2,521	405	274	11	119	2,116	1,209	907
July	2,460	405	273	12	119	2,055	1,205	850
August	2,080	382	257	12	112	1,697	1,142	555
September	1,860	360	271	11	77	1,499	1,194	305
October	1,879	367	277	10	79	1,511	1,223	288
November	1,619	323	249	7	65	1,295	1,126	169
December	1,309	285	218	6	59	1,023	1,017	6
Total for 1964	21,648	4,048	2,992	109	946	17,599	13,467	4 132

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Appendix table 20.--Monthly hours worked by family and hired workers on farms which hired labor, by value of farm products sold, 48 State survey, 1964 1/--Continued

Value of farm products sold and month	Total hours 2/	Family workers				Hired workers		
		Total	Operator	Wife	Other	Total	Regular	Seasonal
	Hours							
$500,000 and over								
January	5,124	335	204	20	109	4,789	4,789	---
February	4,775	312	190	19	102	4,463	4,463	---
March	5,231	344	210	20	113	4,887	4,887	---
April	5,131	342	211	20	110	4,789	4,788	---
May	5,964	372	232	20	119	5,592	5,009	583
June	6,010	382	227	20	135	5,728	4,895	833
July	6,200	379	226	20	131	5,821	5,003	818
August	5,598	388	230	20	138	5,209	4,895	314
September	8,408	382	239	20	122	8,025	4,914	3,111
October	8,129	375	229	20	125	7,753	4,912	2,841
November	6,705	355	218	20	116	6,349	4,794	1,555
December	5,137	341	207	20	113	4,795	4,795	---
Total for 1964	72,417	4,312	2,628	245	1,439	68,105	58,150	9,955
All sales groups								
January	327	214	163	17	33	113	106	7
February	308	203	154	16	32	105	101	4
March	380	249	192	18	38	131	122	9
April	474	308	234	26	47	166	136	30
May	609	365	267	36	61	244	149	95
June	712	405	268	39	97	307	151	156
July	745	417	271	41	103	328	152	176
August	684	393	256	39	97	291	146	145
September	615	360	257	38	64	253	142	111
October	571	346	252	37	56	225	140	85
November	447	283	212	27	43	163	124	39
December	355	232	175	20	36	122	110	12
Total for 1964	6,232	3,779	2,707	359	712	2,452	1,584	868

1/ Fruit and nut, vegetable, and poultry farms are excluded.
2/ Due to rounding components may not add to total figure.
3/ Includes farms in the Appalachian, Southeast, and Delta States Regions only.

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Appendix table 21.--Hours worked per $100 of farm sales on farms which hired labor, by type of farm and value of farm products sold, 48 State survey, 1964 1/

Type of farm and value of farm products sold	All workers	Family workers			Hired workers		
		Total	Operator	Other	Total	Regular	Seasonal
	Hours						
Cash grain							
$2,500-$4,999	72	54	44	10	18	5	13
$5,000-$9,999	30	28	23	5	2	1	1
$10,000-$19,999	22	20	15	5	2	1	1
$20,000-$39,999	17	13	10	3	4	3	1
$40,000 and over	13	4	3	1	9	8	1
All cash grain farms	19	14	11	3	5	3	2
Tobacco							
$2,500-$4,999	89	73	43	30	16	6	10
$5,000-$9,999	60	44	25	19	16	5	11
$10,000-$19,999	46	27	15	12	19	7	12
$20,000-$39,999	34	12	8	4	22	9	13
$40,000 and over	---	---	---	---	---	---	---
All tobacco farms	53	35	20	15	18	7	11
Cotton							
$2,500-$4,999	105	79	43	36	26	2	24
$5,000-$9,999	56	38	26	12	18	3	15
$10,000-$19,999	33	19	14	5	14	6	8
$20,000-$39,999	28	9	8	1	19	9	10
$40,000 and over	24	4	3	1	20	13	7
All cotton farms	33	14	10	4	19	9	10
Other field crops							
$2,500-$4,999	76	51	27	24	25	9	16
$5,000-$9,999	50	35	26	9	15	4	11
$10,000-$19,999	33	19	14	5	14	5	9
$20,000-$39,999	22	10	8	2	12	8	4
$40,000 and over	18	8	6	2	10	5	5
All other field crop farms	29	16	12	4	13	6	7
Dairy							
$2,500-$4,999	63	60	39	21	3	1	2
$5,000-$9,999	59	55	35	20	4	3	1
$10,000-$19,999	40	35	22	13	5	4	1
$20,000-$39,999	29	22	13	9	7	6	1
$40,000 and over	14	6	4	2	8	7	1
All dairy farms	34	28	18	10	6	5	1

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Appendix table 21.--Hours worked per $100 of farm sales on farms which hired labor, by type of farm and value of farm products sold, 48 State survey, 1964 1/--Continued

Type of farm and value of farm products sold	All workers	Family workers			Hired workers		
		Total	Operator	Other	Total	Regular	Seasonal
	Hours						
Livestock ranches							
$2,500-$4,999	103	92	92	---	11	11	---
$5,000-$9,999	53	51	37	14	2	1	1
$10,000-$19,999	37	34	23	11	3	2	1
$20,000-$39,999	25	19	12	7	6	4	2
$40,000 and over	11	5	3	2	6	5	1
All livestock ranches	24	19	13	6	5	4	1
Other livestock							
$2,500-$4,999	67	53	39	14	14	5	9
$5,000-$9,999	39	36	27	9	3	2	1
$10,000-$19,999	26	23	17	6	3	2	1
$20,000-$39,999	17	14	10	4	3	2	1
$40,000 and over	9	6	4	2	3	2	1
All other livestock farms	20	17	12	5	3	2	1
General							
$2,500-$4,999	75	60	40	20	15	3	12
$5,000-$9,999	41	35	26	9	6	2	4
$10,000-$19,999	26	22	16	6	4	2	2
$20,000-$39,999	19	12	8	4	7	5	2
$40,000 and over	10	4	3	1	6	4	2
All general farms	19	13	10	3	6	4	2
All farm types							
$2,500-$4,999 2/	80	64	44	20	16	4	12
$5,000-$9,999	48	40	28	12	8	3	5
$10,000-$19,999	33	24	17	7	9	4	5
$20,000-$39,999	23	13	9	4	10	6	4
$40,000 and over	14	5	4	1	9	7	2
All farm types	27	18	12	6	9	5	4

1/ Fruit and nut, vegetable, and poultry farms are excluded.
2/ Includes farms with farm product sales of $5,000 a year or more in all regions except the South. Appalachian, Southeast, and Delta States Regions include farms with sales of $2,500 or more.

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APPENDIX B, DEFINITIONS AND EXPLANATIONS

Farmwork--Includes time spent tending crops and livestock, overhead jobs such as constructing and repairing fences and farm buildings, maintaining and repairing machinery, and similar farm-maintenance jobs. Note: Time for planning and managing the farm operations is excluded. Examples: Farm recordkeeping, attending educational or farm business meetings, making farm financial arrangements, and housework are not considered farmwork.

Region--States included in each of the 10 farm production regions are as follows:

Northeast

Maine
New Hampshire
Vermont
Massachusetts
Rhode Island
Connecticut
New York
New Jersey
Pennsylvania
Delaware
Maryland

Appalachian

Virginia
West Virginia
North Carolina
Kentucky
Tennessee

Southeast

South Carolina
Georgia
Florida
Alabama

Lake States

Michigan
Wisconsin
Minnesota

Delta States

Mississippi
Arkansas
Louisiana

Corn Belt

Ohio
Indiana
Illinois
Iowa
Missouri

Northern Plains

North Dakota
South Dakota
Nebraska
Kansas

Southern Plains

Oklahoma
Texas

Mountain

Montana
Idaho
Wyoming
Colorado
New Mexico
Arizona
Utah
Nevada

Pacific

Washington
Oregon
California

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Economic Class--For this study, there are 5 basic classes of sales groups with the same dollar ranges as used by the Census Bureau in its quinquennial census of agriculture surveys.

Gross sales

$ 2,500-$ 4,999--Only farms in 3 Southern Regions (Appalachian, Southeast, and Delta States) were surveyed in this class range.
$ 5,000-$ 9,999
$10,000-$19,999
$20,000-$39,999
$40,000 and over--Divided into 3 sectors:
(a) $ 40,000-$ 99,999
(b) $100,000-$499,999
(c) $500,000 and over

Type of farm as defined in this survey, source of cash income (products with sales value representing 50% or more of total value of all farm products sold):

Cash grain--Corn, sorghum, small grains, soybeans for beans, cowpeas for peas, dry field and seed beans and peas.

Tobacco--Tobacco.

Cotton--Cotton.

Other field crop--Peanuts, potatoes (Irish and sweet), sugarcane for sugar or sirup, sweet sorghums for sirup, broomcorn, popcorn, sugar beets, mint, hops, and sugar beet seed.

Vegetable--Vegetables.

Fruit and nut--Berries, other small fruits, tree fruits, grapes, and nuts.

Poultry--Chickens, chicken eggs, turkeys, and other poultry products.

Dairy--Milk and cream. The criterion of 50 percent of total sales was modified in the case of dairy farms. A farm having value of sales of dairy products amounting to less than 50 percent of the total value of farm products sold was classified as a dairy farm, if--(a) Milk and cream sold accounted for more than 30 percent of the total value of products sold, (b) Milk cows represented 50 percent or more of total cows, and (c) The value of milk and cream sold plus the value of cattle and calves sold amounted to 50 percent or more of the total value of all farm products sold.

Livestock other than dairy and poultry--Cattle, calves, hogs, sheep, goats, wool, and mohair except for farms in the 17 Western States, Louisiana, and Florida that qualified as livestock ranches.

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Livestock ranches--Farms in the 17 conterminous Western States, Louisiana, and Florida were classified as livestock ranches if the sales of livestock, wool, and mohair represented 50 percent or more of the total value of farm products sold and if pastureland or grazing land amounted to 100 or more acres and was 10 or more times the acreage of cropland harvested.

General--Field seed crops, hay, silage. A farm was classified as general also if it had cash income from three or more sources and did not meet the criteria for any other type.

Miscellaneous--Nursery and greenhouse products, forest products, mules, horses, colts, and ponies. Also all institutional farms and Indian reservations.

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UNITED STATES DEPARTMENT OF AGRICULTURE
WASHINGTON, D.C. 20250

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