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UNITED STATES DEPARTMENT OF LABOR

Frances Perkins, *Secretary*

BUREAU OF LABOR STATISTICS

Isador Lubin, *Commissioner (on leave)*

A. F. Hinrichs, *Acting Commissioner*

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# Earnings in the Grain-Mill Products Industries, 1941

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Prepared by

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DIVISION OF WAGE ANALYSIS

ROBERT J. MYERS, *Chief*



*Bulletin No. 712*

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## LETTER OF TRANSMITTAL

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UNITED STATES DEPARTMENT OF LABOR,  
BUREAU OF LABOR STATISTICS,  
*Washington, D. C., March 14, 1942.*

The SECRETARY OF LABOR:

I have the honor to transmit herewith a report on earnings in the grain-mill products industries, 1941. This study was requested by the Administrator of the Wage and Hour Division, and was made under the direction of Robert J. Myers, Chief of the Division of Wage Analysis, and was prepared by Frances Jones, assisted by Bernard Leo Smith.

A. F. HINRICHS, *Acting Commissioner.*

HON. FRANCES PERKINS,  
*Secretary of Labor.*

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*Bulletin No. 712 of the  
United States Bureau of Labor Statistics*

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**EARNINGS IN THE GRAIN-MILL PRODUCTS  
INDUSTRIES, 1941**

*Summary*

Workers in the grain-mill products industries received an average wage of 51.9 cents an hour in February 1941. Almost one-fourth of these workers earned less than 35 cents and one-fourth received more than 67.5 cents. Subsequent wage rate adjustments had increased the average wage to about 55 cents by September 1941. These facts were disclosed by a study made by the Bureau of Labor Statistics in 1941. The study was requested by the Administrator of the Wage and Hour Division for use by an industry committee, appointed to consider a new minimum wage for the industry group.

Of the 5 individual industries covered by the study, the cereal-preparations industry had the highest wage level, with average earnings of 67.3 cents an hour in February 1941. The flour-milling industry paid an average wage of 53.5 cents. Hourly earnings in the prepared feeds, blended and prepared flour, and rice cleaning and polishing industries were 46.1, 43.9, and 36.0 cents, respectively.

The manufacture of grain products is carried on in all regions of the country and in all types of communities; study of the wage structure of the grain industries is consequently of particular value in indicating the influence of regional factors. In the industry group as a whole, wages were higher on the Pacific coast than in any other region, the averages for February and September, respectively, being 70.1 and 75.6 cents. Wages in the Southeast were less than half as high, averaging only 34.3 and 35.5 cents. Localities which were of importance in individual industries and whose wages were particularly high include Buffalo and other port cities on the Great Lakes, Minneapolis, and Battle Creek.

In general, the wages paid in large cities were considerably higher than those paid in smaller communities. Wage levels also reflected the influence of size of company, size of manufacturing unit, and unionization.

*Characteristics of Industries*

## DEFINITION AND RELATIVE IMPORTANCE OF INDUSTRIES

In 1939, according to the Census of Manufactures, there were approximately 3,750 establishments in the grain-mill products industries that manufactured products with a value of \$5,000 or more for the year. These manufacturers employed an average of 50,700 wage earners and 10,900 salaried persons, and paid out \$81,800,000 in wages and salaries. The total value of product for the entire industry group was in excess of \$1,200,000,000 and the value added by manufacture was \$317,000,000.

The group discussed in the present article embraces five related but distinct industries. Largest of these is flour milling, designated by the Census of Manufactures as the "flour and other grain-mill products industry." The industry includes establishments primarily engaged in the milling of grains other than rice; its chief products are flour and meal, but it also produces cracked grain used as cereal or stock feed, brewers' grits and flakes, and blended and prepared flour composed principally of products ground in the same establishment. Measured either by number of workers or by amount of wages paid, flour milling comprises approximately half of the grain-mill products industry group. It accounts for about 57 percent of the number of establishments classified by major product and a little more than half of the total product value, but for only 45 percent of the value added by manufacture.

The feed industry is designated by the Census of Manufactures as producing "prepared feeds (including mineral) for animals and fowls," and including establishments primarily engaged in the manufacture of any mixed feed. The Bureau of Labor Statistics survey, however, was confined to mills producing mixed feed from grain or hay in combination with other ingredients, and did not include those primarily manufacturing feed in which meat products, even if combined with grain, constitute the principal ingredient. The survey also excluded any mills specializing in the production of mineral feeds and of the various concentrates used in feed mixing. Alfalfa grinding mills were included. Manufacturers producing as a major product feeds of the types excluded from the survey are believed to be relatively few, and to employ a negligible proportion of the workers in the industry. The feed industry employs approximately 30 percent of the workers and pays 30 percent of the total wage bill of the grain-mill industry group. It has 37 percent of the mills, produces almost one-third of the total product value, and accounts for a similar proportion of the value added by manufacture.

The cereals industry includes mills which produce primarily cereal preparations such as cereal breakfast foods, both uncooked and ready-

to-serve, corn grits and hominy for table use, and coffee substitutes. Some but not all of the establishments in this industry mill the grain used in their products. This industry employs 14 percent of the total workers in the industry group and pays almost 16 percent of the total pay roll; but it includes only 2 percent of all establishments and produces little more than one-tenth of the total value of product. It accounts for 19 percent of the value added by manufacture.

The rice cleaning and polishing industry, hereafter referred to as the "rice industry," has approximately the same number of commercial mills as the cereals industry, but it employs only 5 percent of the total workers in the industry group, pays scarcely 3 percent of the pay roll, and accounts for less than 5 percent of the total value of product and value added by manufacture. The rice industry is composed of establishments primarily engaged in preparing rice for consumption by cleaning and polishing it after it comes from the thresher.<sup>1</sup>

The Census industry designated as "blended and prepared flour from purchased flour" consists of establishments primarily engaged in the manufacture of prepared flour (self-rising) and blended flour from flour and other ingredients purchased from other producers. For purposes of simplification the title of this industry is hereafter abbreviated to "prepared-flour industry." This industry has only 2 percent of the mills in the industry group and is even less important in terms of other significant measures.

TABLE 1.—*Relative Importance of Manufacturing Industries Comprising Grain-Mill Products Group*<sup>1</sup>

Industry	Establishments		Wage earners and salaried workers		Percent of pay roll	Percent of product value	Percent of value added by manufacture
	Number	Percent	Number	Percent			
Total industry group.....	3,746	100.0	61,550	100.0	100.0	100.0	100.0
Flour milling.....	2,143	57.2	30,319	49.2	50.0	52.5	45.4
Feed.....	1,383	36.9	18,942	30.8	30.0	32.4	31.3
Cereals.....	70	1.9	8,469	13.8	15.5	10.3	19.4
Prepared flour.....	78	2.1	882	1.4	1.2	1.4	1.2
Rice.....	72	1.9	2,938	4.8	3.3	3.4	2.7

<sup>1</sup> Source: Census of Manufactures, 1939.

### PRODUCT

The several branches of the grain industries have a number of important characteristics in common; notably the type of product, the duties and nature of the labor force, and the size and location of the manufacturing establishments.

With an exception in the case of rice milling, the products of each separate industry are also produced to some extent in each of the other

<sup>1</sup> For detailed report on rice mills, see Monthly Labor Review, November 1941: Earnings and Hours in Rice Mills.

industries. Census of Manufactures reports for 1939 show that approximately 7 percent of the flour, 20 percent of the prepared feed, 17 percent of the prepared cereals, and 80 percent of the blended and prepared flour produced in this country are reported by mills in which they are not the major products. These amounts produced outside the respective industries are largely accounted for as secondary products in other industries of the grain-mill products group. The rice-milling industry is the only branch of the grain-mill products group which does not produce substantial amounts of the products of the other grain industries.

#### LABOR FORCE

Payments for labor do not constitute an important cost item in the milling and processing of grain. In none of the individual grain-milling industries in 1939 did wages and salaries together constitute more than about one-tenth of the value of the product, nor as much as one-third of the value added by manufacture. Because of the relative unimportance of labor cost, substantial differences in wage levels can exist in these industries without seriously disturbing competitive relationships.

The labor requirements of all of the grain industries demand, to some degree, the same kinds of skills. Packing, shipping, elevator, and warehouse work engages more than three-fifths of the labor in the flour-milling, feed, and rice industries and but little less in the cereals and prepared-flour industries. The major portion of the work in these departments consists in filling sacks at spouts, closing sacks, trucking, stacking, and other jobs of low skill.

Maintenance and service work likewise require the same type of labor in all of the industries. Such workers comprise almost one-fourth of the total in the cereals industry, slightly less than one-fifth in the flour-milling industry, about one-tenth in the feed and rice industries, and 7 percent in prepared-flour establishments. Millwrights and other skilled maintenance workers account for one-fourth to one-half of all skilled workers in the flour-milling, feed, cereal-preparations, and rice industries, but are relatively less important among skilled workers in prepared-flour mills.

The production departments employ only 20 to 30 percent of the total labor force. Grain-mill workers, such as millers and their assistants, comprise practically all of the production workers in the rice industry, one-half in the flour-milling industry, a little less than one-fifth in the feed industry, and slightly more than one-tenth in the cereals industry. All occupations found in the prepared-flour mills are common also in flour mills. The cereals industry is the most distinctive of the group from an occupational standpoint. The mills

making ready-to-serve cereals in particular employ processing workers of a type not used in the production of other grain products. The cereals industry is, furthermore, the only important employer of women in the group. A comparison of the five industries with respect to skill and sex classification of workers may be seen in table 2.

TABLE 2.—Percentage Distribution of Workers in Grain-Mill Products Industries, by Skill and Sex, 1941

Industry	All workers			Skilled			Semiskilled			Unskilled		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Total industry group.	100.0	94.2	5.8	15.7	15.5	0.2	50.3	45.1	5.2	34.0	33.6	0.4
Flour milling.....	100.0	98.4	1.6	17.8	17.7	.1	51.3	50.0	1.3	30.9	30.7	.2
Feed.....	100.0	99.3	.7	11.6	11.6	( <sup>1</sup> )	47.8	47.4	.4	40.6	40.3	.3
Cereals.....	100.0	71.0	29.0	21.0	20.1	.9	57.5	30.9	26.6	21.5	20.0	1.6
Prepared flour.....	100.0	88.9	11.1	9.5	8.5	1.0	56.7	46.6	10.1	33.8	33.8	0.0
Rice.....	100.0	97.4	2.6	7.1	7.1	0.0	35.0	32.6	2.4	57.9	57.7	.2

<sup>1</sup> Less than 1/10 of 1 percent.

#### LABOR UNIONS

Substantial numbers of the workers in the grain-mill products industry group have a common interest through their union affiliation. It was estimated that 40 percent of all workers in these industries were working under collective-bargaining agreements at the time of the Bureau's survey, and a large majority of those under agreement were represented by the American Federation of Grain Processors' Council, affiliated with the American Federation of Labor. Approximately 40 percent of all workers in flour mills were working under union agreements, and about nine-tenths of these were under agreements negotiated by the above-named union. This union also represents in negotiations a large proportion of the workers in the mixed-feed mills that operate under a union agreement. Union mills are believed to employ almost one-fourth of all workers in the feed industry. In the cereal-preparations industry, union agreements covered about half of all workers, and four-fifths of such union workers were represented by the American Federation of Grain Processors' Council. This union was also encountered in the rice industry. In the prepared-flour industry approximately one-third of the workers were under collective-bargaining agreements, negotiated for the most part by the United Cannery, Agricultural Packing, and Allied Workers, an affiliate of the Congress of Industrial Organizations. Other unions with agreements in the industries surveyed include the International Brotherhood of Teamsters, Chauffeurs, Stablemen, and Helpers, an A. F. of L. affiliate, and the International Longshoremen's and Warehousemen's Union, affiliated with the C. I. O.

## SIZE OF ESTABLISHMENT

Although a few large manufacturers are important producers, very small establishments comprise a substantial proportion of the total mills in all the industries of the group. In the flour-milling and feed industries, slightly over one-tenth of the mills employ more than 20 wage earners, and more than 60 percent have fewer than 6 workers. Furthermore, these very small flour and feed establishments account for a substantial proportion of the wage earners in these industries. The reports of the 1939 Census of Manufactures indicate that 28.5 percent of the flour-mill workers, and 40.8 percent of the workers in feed establishments are employed in mills having fewer than 21 wage earners. Small mills are also of importance in the rice and prepared-flour industries. A large proportion of the cereals mills are small, but these small units of the cereals industry employ an almost negligible proportion of the total workers. Cereals mills with fewer than 6 workers, although constituting 40.1 percent of the total establishments in 1939, employed only 1.1 percent of the industry's wage earners; and mills with 6 to 20 workers, comprising 18.6 percent of all mills, employed only an additional 2.1 percent. Almost nine-tenths of the workers in the cereals industry were in mills employing more than 100 wage earners each.

## LOCALIZATION OF INDUSTRIES

Many of the establishments making grain-mill products are in small towns adjacent to the farms which produce their basic materials. About half of the workers in flour and feed mills, and an even higher percentage of rice-mill workers are employed in towns with less than 25,000 population. Using predominantly semiskilled and unskilled labor, they are able to draw readily upon the farm-labor market. The breakfast-cereals and prepared-flour mills which, to a large extent, purchase milled grain for further processing, are found principally in larger towns and cities.

Flour and feed mills are widely distributed geographically, being found in all States of the Union. The most important States in terms of flour-mill employment and production are Kansas, Minnesota, New York, Missouri, Illinois, Texas, Indiana, and Ohio. No single State employs more than one-tenth of the industry's wage earners. The distribution of feed establishments is similar to that of flour mills; New York, with only 15 percent of the industry's wage earners, ranks first in feed-mill employment. California, Illinois, Ohio, Pennsylvania, Texas, Missouri, and Tennessee follow New York in importance.

The 2 most important States in the prepared-cereals industry are Michigan, with the 2 largest establishments producing ready-

to-serve cereals, and Iowa, a large producer of oat cereal. Numerous other workers in this industry are in New York, Illinois, Ohio, and Missouri. The 70 establishments of the cereals industry are in 22 States. Mills which produce blended and prepared flour from purchased flour are principally in the South. Tennessee, with 12 mills, is the most important State in this industry. Rice mills are relatively restricted geographically, being found in 4 Southern States (Louisiana, Texas, Arkansas, and Tennessee) and in California.

### *Scope and Method of Survey*

The wage data presented in this study were reported by 1,074 mills which in 1941 employed 19,100 wage earners (table 3). Approximately one-third of the workers in the flour-milling industry and a like proportion in the feed industry were covered. The cereals and the prepared-flour industries, being somewhat smaller groups, were covered to the extent of between 40 and 45 percent of their workers. Approximately half the mills and workers in the rice industry were included.

TABLE 3.—*Number of Mills and Workers Included in Survey of Grain-Mill Products Industries*<sup>1</sup>

Industry	Number of mills	Number of workers
Total industry group.....	1, 074	19, 100
Flour milling.....	492	8, 272
Commercial mills <sup>2</sup> .....	214	7, 271
Small mills <sup>3</sup> .....	278	1, 001
Feed.....	491	5, 244
Commercial mills <sup>2</sup> .....	128	3, 685
Small mills <sup>3</sup> .....	365	1, 559
Cereals.....	33	3, 469
Prepared flour.....	19	305
Rice.....	39	1, 810

<sup>1</sup> Figures presented in this table represent the actual number of establishments and workers covered in the survey. In later tables presenting hours and earnings data for the total industry group, the data for each industry have been assigned weights proportionate to their respective importance in the group.

<sup>2</sup> The term "commercial mills" is herein used to designate establishments of 6 or more wage earners which were included in the comprehensive survey by the Bureau's field agents.

<sup>3</sup> The term "small mills" is applied to the very small establishments which were surveyed by mail questionnaire.

All of the data for the cereals, prepared-flour, and rice industries, and a part of the information for the flour-milling and feed industries were obtained by the Bureau's trained field representatives who transcribed pay-roll information directly from mill records and supplemented it by interviews with company officials and personal observation of mill processes. Because of the high cost of visiting the hundreds of small, widely scattered mills, however, those establishments in the flour-milling and the feed industries which were believed to employ as few as five wage earners were canvassed by mail questionnaire.

The reports received by mail were tested for accuracy in two regions. A slight overstatement of average hourly earnings was found to exist, and all earnings data derived from the mail reports were subjected to corrections designed to minimize the error.

The establishments surveyed by field representatives were carefully selected to assure proper representation of each size and type of mill and type of community.

The survey was conducted early in 1941 and covered conditions during the first half of that year. All of the reports for the cereals, prepared-flour, and rice industries, and the greater part of the flour-milling and feed establishments were based on February pay rolls or a representative pay-roll period near that date. The data obtained by mail questionnaire represent a later spring period, principally the first half of May. The two periods are believed to be sufficiently comparable to permit combination of the data.

Workers in all direct and indirect mill occupations, including working supervisors, were covered as were also office employees other than executives, professional personnel, and outside salesmen. Data for office workers are excluded from this article.

The wage data presented in this report include only earnings at regular rates of pay. Data on hours represent actual working time, exclusive of off-duty lunch periods but inclusive of rest periods.

Because significant changes in wage rates occurred during the summer and fall of 1941, the data obtained by field survey were later supplemented by a mail canvass of the mills previously visited, for the purpose of determining the importance of general changes in wage rates. The information concerning recent wage changes has been incorporated in this report.

### *Earnings in the Combined Industries*

The earnings of workers in the combined industries making grain-mill products averaged 51.9 cents an hour in February 1941. By September 1941, approximately half of the mills in the industries had granted wage increases. These increases ranged from 1 to 35 percent of the respective mill pay rolls and amounted to an average 6-percent advance for the group of industries as a whole. In September 1941, therefore, average hourly earnings amounted to about 55 cents (table 4). Reports available to the Bureau indicate that still further wage increases have been made since September 1941.

**TABLE 4.—Average Hourly Earnings of Workers in Grain-Mill Products Industries, February and September 1941<sup>1</sup>**

Industry	February average	September	
		Average (estimated)	Percent of increase over February
Total industry group.....	\$0.519	\$0.548	5.6
Flour milling.....	.535	.562	5.0
Feed.....	.461	.488	5.9
Cereals.....	.673	.715	6.2
Prepared flour.....	.439	.451	2.7
Rice.....	.360	.377	4.7

<sup>1</sup> Data both for the commercial establishments surveyed by the Bureau's field agents and for the small grain mills and feed plants covered by mail questionnaire are included in the tabulation. As information covering changes in wage rates in the small establishments was not obtained, and since such increases as occurred were undoubtedly slight in aggregate, the data presented for September assume no changes in rates for the small plants. Should wages in small flour and other grain mills have increased as much as 2.4 percent and in small feed mills as much as 6.0 percent (the respective percentages of increase in the smallest flour and feed mills for which wage change data are available), the average wage figure for the entire group of grain-mill products industries for September would be increased by less than half a cent.

The general average of earnings in these industries typifies the wages of a relatively small proportion of the workers, however. Only about one-sixth earned within 5 cents of the average, one-fourth were paid more than 67.5 cents an hour, and one-fourth received less than 35.8 cents (table 5).

**TABLE 5.—Percentage Distribution of Workers in Grain-Mill Products Industries, by Average Hourly Earnings, February 1941**

Average hourly earnings	Total industry group	Flour milling	Feed	Cereals	Prepared flour	Rice
Under 30.0 cents.....	4.1	4.3	6.7	-----	0.3	0.7
Exactly 30.0 cents.....	13.9	10.4	14.0	0.6	36.1	72.2
30.1 and under 32.5 cents.....	2.0	1.8	2.8	.4	4.3	3.1
32.5 and under 35.0 cents.....	3.3	2.4	6.4	.6	1.3	2.1
35.0 and under 37.5 cents.....	5.6	5.1	8.9	.9	7.5	5.3
37.5 and under 40.0 cents.....	2.8	2.3	3.8	2.8	5.6	.5
40.0 and under 42.5 cents.....	5.8	5.6	7.0	4.6	10.4	2.0
42.5 and under 47.5 cents.....	6.6	6.1	7.5	8.3	2.9	1.5
47.5 and under 52.5 cents.....	9.7	11.6	9.3	8.9	5.3	1.3
52.5 and under 57.5 cents.....	7.5	7.9	7.0	10.2	2.3	.6
57.5 and under 62.5 cents.....	6.7	7.8	5.3	8.1	5.2	1.9
62.5 and under 67.5 cents.....	6.6	7.2	5.5	8.7	9.5	1.3
67.5 and under 72.5 cents.....	6.8	7.6	6.0	8.9	2.0	.3
72.5 and under 77.5 cents.....	5.9	6.2	4.9	7.2	2.3	5.2
77.5 and under 82.5 cents.....	4.2	5.0	2.3	6.9	2.0	.5
82.5 and under 87.5 cents.....	3.3	4.4	.8	6.3	.3	.5
87.5 and under 92.5 cents.....	1.8	1.7	.7	5.2	1.0	.4
92.5 and under 97.5 cents.....	1.0	.8	.2	3.7	-----	.1
97.5 and under 102.5 cents.....	1.1	.9	.2	3.6	.7	.2
102.5 cents and over.....	1.3	.9	.7	4.1	1.0	.3
Total.....	100.0	100.0	100.0	100.0	100.0	100.0
Average hourly earnings.....	\$0.519	\$0.535	\$0.461	\$0.673	\$0.439	\$0.360

The wide dispersion of earnings about the average wage reflects a number of different factors. Foremost among these is the extreme regional dispersion of the industries, as a result of which the wage structure reflects the wage levels of virtually all sections of the country.

Another factor is the absence (except in a few localities) of the stabilizing influence of large centrally controlled pay rolls, a preponderance of the manufacturing units being small and independently operated. Differences in occupations and skills of workers also account for some variation in earnings. Finally, there are differences among the various industries in the extent of mechanization and in other factors influencing the productivity of labor.

#### REGIONAL VARIATIONS

The differences in the levels of wages paid by these industries in various sections of the United States were quite pronounced. The highest wages prevailed in the Pacific States where the average earnings were 70.1 cents an hour in February and 75.6 cents in September. Pacific-coast mills are for the most part situated in metropolitan areas. The union influence is strong throughout this region. In striking contrast to the Pacific States is the Southeastern region bordered by (and including) Delaware, Maryland, West Virginia, Kentucky, Arkansas, and Louisiana. Earnings in this region averaged 34.3 cents an hour in February and had increased to only 35.5 cents in September. Most of the Southern establishments are small and are in small towns. Relatively few of these mills have collective-bargaining agreements.

The Northwestern spring wheat region of Minnesota, the Dakotas, and Montana reported average earnings of 60.4 cents in February and 63.8 cents in September. As in the Pacific region, substantial proportions of the workers in the Northwest are covered by union agreements. Furthermore, much of the employment is in large mills operated by the larger producers. Average wages in the East Central and Northeastern States were slightly lower than in the Northwest. It should be observed, however, that this eastern region contains some high-wage areas, notably the Great Lakes ports and Battle Creek, Mich., where large establishments are situated and where union contracts are the rule. Small mills in rural communities are numerous in the other sections of the region.

The West Central, Southwest, and Mountain States, with average earnings of 46.9 cents in February and 48.8 cents in September, had an appreciably higher average than the Southeast but it was lower than for any other region. This is one of the most important areas in the flour-milling and feed industries. It contains a few mills of the very large companies and numerous mills of medium-sized companies, as well as a number of small independent establishments. Some parts of the region are unionized but in other sections union influence is not an important factor.

A comparison of average wages in each of the above-named regions for the February and September periods is shown in table 6. It will

be observed that the advance in wages between February and September was proportionately greater in the high-wage regions than in the sections where wages were relatively low. A comparison of the regions with respect to some of the important variables that influence wage levels is shown in table 7.

TABLE 6.—Average Hourly Earnings of Workers in Grain-Mill Products Industries, by Region, February and September 1941

Region	February average	September	
		Average (estimated)	Percentage increase over February
All regions .....	\$0.519	\$0.548	5.6
Northeast and East Central, including Great Lakes ports <sup>1</sup> .....	.590	.626	6.1
Southeast <sup>2</sup> .....	.343	.355	3.5
Northwest <sup>3</sup> .....	.604	.638	5.6
West Central, Southwest, and Mountain <sup>4</sup> .....	.469	.488	4.1
Pacific <sup>5</sup> .....	.701	.756	7.8

<sup>1</sup> Includes Connecticut, Illinois, Indiana, Maine, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, and Wisconsin.

<sup>2</sup> Includes Alabama, Arkansas, Delaware, Georgia, Florida, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia.

<sup>3</sup> Includes Minnesota, Montana, North Dakota, and South Dakota.

<sup>4</sup> Includes Arizona, Colorado, Idaho, Iowa, Kansas, Missouri, Nebraska, Nevada, New Mexico, Oklahoma, Texas, Utah, and Wyoming.

<sup>5</sup> Includes California, Oregon, and Washington.

TABLE 7.—Percentage Distribution of Workers Included in Survey, by Size of Mill, Size of City, Unionization, and Region, 1941

Item	All regions	Northeast and East Central, including Great Lakes ports	South-east	North-west	West Central, South-west, and Mountain	Pacific
<b>Size of mill:</b>						
Under 20 workers.....	28.4	29.4	36.1	20.9	23.0	30.3
21 to 50 workers.....	17.9	11.3	22.5	22.7	22.7	18.0
51 to 100 workers.....	20.7	12.0	27.3	17.9	27.4	24.9
101 to 250 workers.....	18.2	19.2	14.1	20.3	18.2	21.3
251 to 500 workers.....	7.5	13.1	-----	18.2	3.0	5.5
501 workers and over.....	7.3	15.0	-----	-----	5.7	-----
Total.....	100.0	100.0	100.0	100.0	100.0	100.0
<b>Size of city (population):</b>						
Under 2,500.....	16.0	14.8	22.6	17.7	13.4	14.4
2,500 and under 5,000.....	6.5	6.5	6.2	4.6	8.0	3.7
5,000 and under 25,000.....	20.5	14.9	26.3	22.8	25.5	14.0
25,000 and under 100,000.....	22.5	30.3	14.5	3.3	25.6	10.0
100,000 and under 500,000.....	23.4	9.5	29.7	51.1	27.3	37.0
500,000 and over.....	11.1	24.0	.7	-----	.2	20.9
Total.....	100.0	100.0	100.0	100.0	100.0	100.0
<b>Unionization:<sup>1</sup></b>						
Union.....	37.8	48.8	11.2	57.5	26.6	66.8
Nonunion.....	62.2	51.2	88.8	42.5	73.4	33.2
Total.....	100.0	100.0	100.0	100.0	100.0	100.0

<sup>1</sup> Information concerning union affiliation was not obtained in the Bureau's mail survey of small flour and feed mills. Substantial proportions of these are known to have had no union contract, and in the present tabulation all such mills have been classified as nonunion. A correction of this tabulation on the basis of complete information would undoubtedly result in raising slightly the proportion of workers indicated as employed in firms with a union contract.

### *The Flour-Milling Industry*

The most important flour-milling States are Kansas, Minnesota, and New York. Of less importance, but within the larger producing areas are Missouri, Illinois, Texas, Indiana, and Ohio. Buffalo, Kansas City, Minneapolis, Toledo, Chicago, St. Louis, Wichita, Salina (Kans.), Portland (Oreg.), Seattle, and Tacoma are among the more important milling cities, and produce about one-third of all flour milled in the United States. Grain mills are numerous and widely scattered, however, and are found wherever grain is grown, in all States, in small towns and cities, and at important transportation points.

The last Census of Manufactures lists 2,143 establishments that are primarily grain mills and classified in the flour-milling industry, having an annual production of \$5,000 or more. With average annual employment aggregating 24,771 wage earners, these mills had an average employment of only 12 workers. The importance of small establishments in the industry may be judged from the fact that more than seven-eighths of all mills employ fewer than 21 wage earners, and more than one-fourth of all workers in the industry are employed in such mills. About 44 percent of the industry's wage earners are in mills employing between 21 and 100 workers, and 28 percent are in larger establishments.<sup>2</sup>

Despite the large number of small mills in operation, large flour-milling companies which operate several mills in different localities control a substantial portion of the Nation's flour-milling capacity. According to published data,<sup>3</sup> the largest producer in the industry in 1940, owned and operated mills with a combined daily capacity of 70,525 barrels, which represented one-tenth of the country's total flour capacity. Six other large companies together controlled about 17 percent of total capacity, and 21 companies, with a daily operating capacity of 3,000 to 7,500 barrels, accounted for another 13 percent. These 28 companies controlled 40 percent of the total flour-milling capacity of the country.

The Bureau's survey covered one-third of the flour-milling industry, and included 8,623 wage earners in 611 mills. Reports from an additional 76 mills that employed no wage earners were received in the mail questionnaire survey of small mills and have been included in certain tabulations on type and value of product which supplement the wage data. The mills and workers covered by the survey are distributed according to regional location in table 8.

Certain characteristics of the mills studied by the Bureau, for each region and the country as a whole, are indicated in table 9. It will be observed that the factors which contribute to high wages, namely

<sup>2</sup> U. S. Census of Manufactures, 1939.

<sup>3</sup> The Northwestern Miller, Minneapolis, Apr. 30, 1941.

TABLE 8.—Number of Mills and Workers Included in Survey of Wages in the Flour-Milling Industry, by Region, 1941

Region	Mills			Workers		
	Total	Com- mercial mills	Small mills	Total	Com- mercial mills	Small mills
All regions.....	611	214	1 397	8, 623	7, 271	1, 352
Northeast and East Central.....	190	55	135	1, 662	1, 204	458
Lake ports.....	10	10	-----	1, 041	1, 041	-----
Southeast.....	194	43	151	1, 189	655	534
Northwest.....	37	18	19	1, 059	921	35
West Central and Southwest.....	118	64	54	2, 792	2, 598	194
Mountain.....	40	10	30	285	194	91
Pacific.....	22	14	8	695	658	37

<sup>1</sup> Data for small flour mills presented in this table have been weighted in the proportions necessary to permit direct combination with data for commercial mills.

location of mills in large cities, prominence of large manufacturing units, and organization of workers for collective bargaining, are encountered more commonly in the Lake ports, the Pacific, and the Northwest, than in the other regions. Table 10, showing a regional distribution of mills by value of product, supplements table 9.

TABLE 9.—Percentage Distribution of Workers Included in Survey of the Flour-Milling Industry, by Size of Mill, Size of City, Unionization, and Region, 1941

Item	All regions	North- east and East Central	Lake ports	South- east	North- west	West Central and South- west	Mount- tain	Pacific
<b>Size of mill (number of workers):</b>								
1 to 5 <sup>1</sup> .....	15.7	27.5	-----	44.9	4.0	6.9	31.9	5.3
6 to 20 <sup>1</sup> .....	12.6	19.9	0.9	24.0	4.5	9.4	30.2	10.2
21 to 50.....	21.3	21.6	2.0	20.0	25.2	28.8	19.3	17.7
51 to 100.....	22.2	20.1	13.7	11.1	16.1	31.3	18.6	31.7
101 to 250.....	20.3	4.2	50.5	-----	26.4	23.6	-----	35.1
251 and over.....	7.9	6.7	32.9	-----	23.8	-----	-----	-----
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Size of city (population):</b>								
Under 2,500.....	19.6	29.6	-----	40.0	14.7	15.2	23.9	12.4
2,500 and under 5,000.....	7.6	10.8	-----	12.4	.9	9.4	17.9	1.2
5,000 and under 25,000.....	24.8	27.5	-----	29.3	25.1	34.1	29.8	8.2
25,000 and under 100,000.....	12.1	28.2	7.6	10.1	4.2	11.0	18.6	.9
100,000 and under 500,000.....	23.7	5.9	12.1	8.2	55.1	30.3	9.8	45.7
500,000 and over.....	12.2	-----	80.3	-----	-----	-----	-----	31.6
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Unionization:<sup>2</sup></b>								
Union.....	43.2	29.1	99.1	3.8	64.4	35.6	18.6	72.1
Nonunion.....	56.8	70.9	.9	96.2	35.6	64.4	81.4	27.9
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

<sup>1</sup> Flour mills which were classified by the Census of Manufactures as having an annual average wage-earner employment of less than 6 in 1939, together with a number of establishments for which definite information was lacking but which were believed to be very small were surveyed by mail questionnaire. To preserve the identity of this group of mills, in all tabulations carrying a size-of-plant classification they have been placed in the "1 to 5" group. Actually a few of these mills had more than 5 workers during the period covered by the report, but all were small mills. Similarly, a small number of mills in the "6 to 20" classification, which contains only data from the field survey, had only 4 or 5 workers during the reported period, although their annual average employment in 1939 placed them in the higher classification. The method of classification used facilitates presentation of the data, and the few cases erroneously classified are unimportant.

<sup>2</sup> See footnote 1, table 7.

**TABLE 10.—Distribution of Mills in the Flour-Milling Industry, by Value of Product Classification and by Region, 1940**

Value of product	All regions	North-east and East Central	Lake ports	South-east	North-west	West Central and South-west	Mountain	Pacific
Total.....	1 687	208	10	222	50	130	45	22
Under \$5,000.....	84	17	-----	40	13	6	7	1
\$5,000 and under \$10,000.....	40	9	-----	19	7	3	2	-----
\$10,000 and under \$15,000.....	40	10	-----	17	-----	10	2	1
\$15,000 and under \$20,000.....	39	12	-----	14	4	6	3	-----
\$20,000 and under \$25,000.....	27	13	-----	9	-----	4	1	-----
\$25,000 and under \$50,000.....	70	27	-----	20	4	10	7	2
\$50,000 and under \$100,000.....	68	20	-----	27	2	15	3	1
\$100,000 and under \$250,000.....	72	22	-----	29	1	11	7	2
\$250,000 and over.....	162	37	10	21	17	58	5	14
Unknown <sup>2</sup> .....	85	41	-----	26	2	7	8	1

<sup>1</sup> Included are 76 mills with no wage earners.

<sup>2</sup> All mills in this classification have less than 6 employees.

#### AVERAGE HOURLY EARNINGS

Workers in the flour-milling industry had basic average earnings of 53.5 cents an hour in February 1941 (table 11).<sup>4</sup> The largest industry of the grain-mill products group, flour milling has a higher wage level than the feed, the prepared-flour, or the rice industry, but pays wages that are substantially lower in general than are paid in the cereals industry.

**TABLE 11.—Average Hourly Earnings of Workers in the Flour-Milling Industry, by Region and Size of Mill, February and September 1941**

Region and size of mill	Number of mills	Number of workers	February average	September	
				Average (estimated)	Percentage increase over February
Total:					
Including small mills <sup>1</sup> .....	611	8,623	\$0.535	\$0.562	5.0
Excluding small mills.....	214	7,271	.573	.607	5.9
Region:					
Northeast and East Central, except					
Lake ports.....	190	1,662	.472	.493	4.4
Lake ports.....	10	1,041	.771	.830	7.7
Southeast.....	194	1,180	.342	.349	1.7
Northwest.....	37	959	.657	.697	6.1
West Central and Southwest.....	118	2,792	.490	.508	3.7
Mountain.....	40	285	.523	.539	3.1
Pacific.....	22	695	.745	.812	9.0
Size of mill:					
1 to 5 workers.....	397	1,352	.358	(1)	-----
6 to 20 workers.....	106	1,087	.426	.444	4.2
21 to 50 workers.....	61	1,841	.485	.509	4.9
51 to 100 workers.....	28	1,908	.600	.632	5.3
101 to 250 workers.....	14	1,753	.674	.718	6.5
251 workers and over.....	5	682	.758	.824	8.7

<sup>1</sup> Information concerning wage changes was not obtained for the small mills which were surveyed by mail. For the purpose of estimating an average September 1941 wage for all plants and by region, it was assumed that no wage change occurred in such mills. See footnote 1, table 4.

<sup>4</sup> The basic average wage was increased approximately 3 percent by premium overtime pay. The actual February average hourly earnings including extra rates for overtime, amounted to about 55 cents.

The average wage of 53.5 cents does not represent a concentration point of workers' earnings; nor do the earnings of as many as one-fifth of the workers come within 5 cents of the average. One-fourth of all workers received less than 38.8 cents, and another fourth earned more than 69.1 cents an hour. Substantial numbers of individual workers earned as little as 30 cents or as much as 87.5 cents an hour. About 90 percent of the industry's workers, however, were within those limits (table 12). The workers in the lower quartile group were employed primarily in small mills and in small towns in the East Central, Northeast, Southeast, and Southwest regions.

Wage increases occurring subsequent to February 1941 raised wages somewhat in all sections of the country. It is estimated that the average wage in September 1941 was about 56.2 cents, indicating a 5-percent increase over the February average. By September, wage rates had advanced in almost half of all mills that had as many as six employees, but in a more substantial proportion of large than small establishments. The amounts by which individual mills increased their pay rolls ranged from 2 to 20 percent. A majority of the wage

TABLE 12.—Percentage Distribution of Workers in the Flour-Milling Industry, by Average Hourly Earnings and by Region, February 1941

Average hourly earnings	All regions	North-east and East Central	Lake ports	South-east	North-west	West Central and South-west	Mountain	Pacific
Under 30.0 cents	4.3	3.5		20.4		2.5		
Exactly 30.0 cents	10.4	8.5		37.3	0.1	10.5	5.2	
30.1 and under 32.5 cents	1.8	3.2		4.8	.5	1.1	2.8	
32.5 and under 35.0 cents	2.4	3.8		5.0	1.4	2.4	2.5	0.8
35.0 and under 37.5 cents	5.1	4.4		8.5	2.9	7.6	3.9	1.2
37.5 and under 40.0 cents	2.3	4.2		4.2	.4	2.1	4.5	.7
40.0 and under 42.5 cents	5.6	10.7	0.6	4.6	1.7	6.7	13.7	.6
42.5 and under 45.0 cents	2.1	4.3	.1	1.6	1.6	2.3	4.6	.3
45.0 and under 47.5 cents	4.0	6.0	.8	2.8	1.8	6.1	3.5	.9
47.5 and under 50.0 cents	5.4	7.2	1.1	.2	5.7	9.1	6.7	.4
50.0 and under 52.5 cents	6.2	9.1	.1	1.3	6.5	9.8	7.7	1.0
52.5 and under 57.5 cents	7.9	13.0	1.7	1.4	7.3	11.9	4.2	2.2
57.5 and under 62.5 cents	7.8	9.0	5.4	3.4	9.3	10.1	10.9	3.7
62.5 and under 67.5 cents	7.2	5.7	13.8	1.7	11.8	6.6	8.4	5.3
67.5 and under 72.5 cents	7.6	2.9	21.5	.8	17.7	3.2	8.4	12.9
72.5 and under 77.5 cents	6.2	1.6	9.6	.4	8.8	4.3	6.3	26.6
77.5 and under 82.5 cents	5.0	.9	7.7	.2	11.1	1.3	2.8	26.6
82.5 and under 87.5 cents	4.4	.8	22.0	.3	4.5	1.3	.7	7.5
87.5 and under 92.5 cents	1.7	.4	6.0	.3	3.9	.4	1.4	2.7
92.5 and under 97.5 cents	.8	.2	1.6	.3	1.6	.1		3.6
97.5 and under 102.5 cents	.9	.4	3.7	.4	.8	.3	1.8	1.6
102.5 and under 112.5 cents	.4		1.9	.1	.2	.1		1.2
112.5 and under 122.5 cents	.4	.1	.2		.2	.1		.6
122.5 and under 132.5 cents	.1	.1	.3		.2	.1		.1
132.5 cents and over	(1)					(1)		
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of mills	611	190	10	194	37	118	40	22
Number of workers	\$ 6, 623	1, 662	1, 041	1, 189	959	2, 792	285	695
Average hourly earnings	\$0. 535	\$0. 472	\$0. 771	\$0. 343	\$0. 667	\$0. 490	\$0. 523	\$0. 745

<sup>1</sup> Less than 1/10 of 1 percent.

adjustments occurred in June, July, and August of 1941, but a few were made as early as March and some in September.

A comparison of the distributions of individual average earnings in all mills with six or more wage earners is presented in table 13. It will be observed that 16.8 percent of the workers in such mills earned less than 40 cents an hour in September, as compared with 18.4 percent in February. It is believed that the proportion of workers in that low-wage category in the very small mills (which are omitted from the tabulation) would not have changed materially between February and September.

*Regional differences.*—A study of the earnings data for the different sections of the country discloses the existence of pronounced regional differences in wage levels (table 11). The average wage in the Lake-port cities as a group in February was 77.1 cents, and in the important grain-milling city of Buffalo, earnings averaged 80.2 cents. Pacific-coast mills paid an average of 74.5 cents. The average hourly rate in Minneapolis was 75.4, but lower wages in the Northwest spring-wheat region outside of Minneapolis brought the average for the region down to 65.7 cents. By September, Lake-port wages had increased almost 8 percent, Pacific-coast mills had advanced wages an average of 9 percent, and the Northwest section 6 percent.

In the important winter-wheat section of the Southwest, wages were low in comparison, the average being only 49.0 cents. The highest-wage sections of this area were Kansas City<sup>5</sup> and the State of Iowa. In the Mountain States the level of wages was a little higher than in the Southwest; in the more important East Central and Northeastern section from which the Lake ports have been excluded, the average wage was slightly below that for the Southwest. Lowest wages are found in the generally small-unit, small-town mills of the Southeast, where average earnings (34.3 cents) were little above the minimum permissible in covered establishments under the Fair Labor Standards Act. Wage advances in these lower-wage regions were less general than in the industry as a whole. Wages rose on the average from 2 percent in the Southeast to 4 percent in the Northeast and East Central region.

Study of the raw data available from the survey indicates that the regional boundaries used in the present study serve to distinguish fairly accurately the areas of true wage differences in the flour-milling industry. The seeming lack of homogeneity within some of the regions, as judged from the irregularity of the distributions shown in tables 12 and 13, can be attributed largely to differences in unionization, mill size, or size of city.

<sup>5</sup> Both Kansas City, Kans., and Kansas City, Mo., are of importance in the industry, and wages were relatively high in each city.

TABLE 13.—Percentage Distribution of Workers in the Flour-Milling Industry, by Average Hourly Earnings and Region, February and September 1941<sup>1</sup>

Average hourly earnings	All regions		Northeast and East Central		Lake ports		Southeast		Northwest		West Central and Southwest		Mountain		Pacific	
	February	September	February	September	February	September	February	September	February	September	February	September	February	September	February	September
Under 30.0 cents	0.8	0.6	0.1	0.1	-----	-----	7.5	5.2	-----	-----	0.3	0.2	-----	-----	-----	-----
Exactly 30.0 cents	8.2	6.2	5.5	2.6	-----	-----	41.3	38.1	0.1	-----	9.5	6.5	4.6	2.1	-----	-----
30.1 and under 32.5 cents	1.1	1.3	1.8	1.2	-----	-----	4.9	3.8	2	-----	1.0	2.2	-----	-----	-----	-----
32.5 and under 35.0 cents	1.5	2.3	3.7	3.7	-----	-----	3.8	8.5	-----	0.1	1.6	2.3	5	2.6	0.2	-----
35.0 and under 37.5 cents	4.9	4.0	3.7	2.9	-----	-----	11.4	8.4	3.0	2.9	7.7	6.5	2.6	2.1	2	-----
37.5 and under 40.0 cents	1.9	2.4	4.3	5.0	-----	-----	4.4	6.4	1	3	2.0	2.5	1.5	2.1	-----	-----
40.0 and under 42.5 cents	5.3	5.0	10.5	9.1	0.6	-----	7.1	5.8	1.3	3	6.6	7.7	12.4	6.2	-----	0.2
42.5 and under 45.0 cents	2.0	2.6	4.4	6.7	1	-----	1.8	4.7	1.3	1.5	2.3	1.9	2.6	8.8	-----	-----
45.0 and under 47.5 cents	3.9	2.7	5.6	2.4	8	0.6	3.1	4.0	1.8	1.2	6.3	4.5	3.1	3.1	3	2
47.5 and under 50.0 cents	5.9	3.1	8.0	7.5	1.1	1	-----	2	6.0	1.2	9.7	4.0	6.7	7.2	3	2
50.0 and under 52.5 cents	6.5	6.2	9.6	7.4	1	-----	1.8	1.5	6.1	6.0	10.4	10.8	6.2	6.2	3	2
52.5 and under 57.5 cents	8.8	9.8	15.9	17.9	1.7	1.9	1.2	1.5	7.6	10.0	12.9	14.2	5.2	4.6	2.0	6
57.5 and under 62.5 cents	8.9	7.5	11.1	10.1	5.4	1.4	5.5	9	9.3	5.2	10.9	12.4	12.9	11.3	3.8	1.5
62.5 and under 67.5 cents	8.0	7.3	6.4	6.4	13.8	5.8	1.7	5.8	12.1	9.6	7.0	9.2	11.3	8.2	5.6	1.8
67.5 and under 72.5 cents	9.0	7.3	3.8	7.4	21.5	12.0	1.4	1.1	18.7	14.0	3.4	5.2	12.4	6.7	13.5	5.5
72.5 and under 77.5 cents	7.3	6.7	2.1	4.1	9.6	10.3	8	1.4	9.1	14.2	4.5	3.3	8.2	11.3	27.9	12.3
77.5 and under 82.5 cents	5.9	8.5	1.2	2.0	7.7	21.0	3	5	11.5	10.9	1.4	3.3	4.1	7.2	27.9	26.3
82.5 and under 87.5 cents	5.1	5.6	8	1.1	22.0	10.2	3	6	4.7	11.6	1.3	1.0	1.0	3.6	7.8	21.6
87.5 and under 92.5 cents	1.9	3.9	4	1.0	6.0	8.2	5	3	4.0	4.0	4	1.2	2.1	2.1	2.7	17.1
92.5 and under 97.5 cents	9	3.6	3	2	1.6	17.8	2	2	1.6	3.8	1	5	-----	5	3.8	4.3
97.5 and under 102.5 cents	1.1	1.0	5	7	3.7	2.5	8	5	9	1.7	3	1	2.6	2.6	1.7	1.7
102.5 and under 112.5 cents	5	1.5	-----	2	1.9	5.0	2	6	2	1.0	1	2	-----	1.0	1.2	4.9
112.5 and under 122.5 cents	5	5	1	1	2.1	1.7	-----	-----	2	2	2	2	5	-----	6	8
122.5 and under 132.5 cents	1	3	2	2	3	1.2	-----	-----	2	2	1	1	-----	-----	2	6
132.5 cents and over	(2)	1	-----	3	-----	3	-----	-----	1	1	(2)	(2)	-----	-----	2	2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of mills	214	214	55	55	10	10	43	43	18	18	64	64	10	10	14	14
Number of workers	7,271	7,271	1,204	1,204	1,041	1,041	655	655	921	921	2,598	2,598	194	194	658	658
Average hourly earnings	\$0.573	\$0.607	\$0.501	\$0.531	\$0.771	\$0.830	\$0.372	\$0.384	\$0.668	\$0.710	\$0.506	\$0.525	\$0.573	\$0.597	\$0.762	\$0.833

<sup>1</sup> Data for mills with fewer than 6 workers are not included in this tabulation.

<sup>2</sup> Less than 1/10 of 1 percent.

*Union and nonunion wages.*—Mills which had collective-bargaining agreements with their workers paid substantially higher wages than other mills in practically all regions where both types of mills are of sufficient importance for comparison. Average earnings in nonunion mills employing 6 or more wage earners were 46.5 cents in February 1941, as compared with a 68.5-cent average for mills operating under union contracts (table 14). If data for the smaller mills were included, the contrast would probably be somewhat greater.<sup>6</sup>

Union mills paid higher wages than nonunion in six of the seven regions tabulated separately. Only in the high-wage Pacific-coast region did the nonunion establishments compare favorably with union mills. A majority of the industry in that area is organized. Wage increases between February and September 1941 were more common in union than in nonunion mills, and in consequence the gap between the respective wage levels of the two groups was wideend during the intervening period.

TABLE 14.—Average Hourly Earnings of Workers in the Flour-Milling Industry, by Region and Unionization, February and September 1941<sup>1</sup>

Region and union status	Number of mills	Number of workers	February average	September	
				Average (estimated)	Percentage increase over February
All regions.....	214	7,271	\$0.573	\$0.607	5.9
Union.....	55	3,727	.685	.735	7.3
Nonunion.....	159	3,544	.465	.481	3.4
Northeast and East Central.....	55	1,204	.501	.531	6.0
Union.....	9	483	.684	.629	7.7
Nonunion.....	46	721	.450	.472	4.9
Lake ports.....	10	1,041	.771	.830	7.7
Union.....	9	( <sup>2</sup> )	.770	.829	7.7
Nonunion.....	1	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Southeast.....	43	655	.372	.384	3.2
Union.....	1	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Nonunion.....	42	( <sup>2</sup> )	.354	.363	2.5
Northwest.....	18	921	.668	.710	6.3
Union.....	9	618	.734	.780	6.3
Nonunion.....	9	303	.533	.565	6.0
West Central and Southwest.....	64	2,598	.506	.525	3.8
Union.....	15	995	.576	.606	5.2
Nonunion.....	49	1,603	.465	.479	3.0
Mountain.....	10	194	.573	.597	4.2
Union.....	1	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Nonunion.....	9	( <sup>2</sup> )	.522	.531	1.7
Pacific.....	14	658	.762	.833	9.3
Union.....	11	501	.761	.840	10.4
Nonunion.....	3	157	.765	.812	6.1

<sup>1</sup> Data for mills with fewer than 6 workers are not included in this tabulation.

<sup>2</sup> Included in total to avoid disclosure of individual mill information.

<sup>3</sup> An average is not computed for 1 mill.

<sup>6</sup> Information with respect to union contractual relations was not secured from the small mills surveyed by mail.

*Wages in large and small mills.*—One of the most important wage variables appears to be the size of the milling unit. When the mills surveyed are classified according to the number of wage earners employed the average wages for the respective size classes are seen to increase with the size of mill. Thus, mills with less than 6 workers had an average wage of 35.8 cents in February 1941 and those with 251 workers or more paid an average of 75.8 cents. Between those extremes, the average wage advanced by amounts ranging from 6 to 12 cents for each successive size group (table 15).

*Wages in large and small companies.*—Previous reference has been made to the importance in the industry of a few large companies. It should be observed that those few (28) companies contribute substantially to the relatively high-wage level of the flour-milling industry. The surveyed mills of the 3 largest milling concerns in the industry paid an average wage of 73.1 cents an hour in February. Other large companies paid wages (68.3 cents) which were slightly lower than those of the largest companies but were, nevertheless, substantially higher than the industry average. Twenty-one medium-sized companies paid an average of 62.5 cents, and the hundreds of small milling companies, with a daily capacity of less than 3,000 barrels, averaged only 45.7 cents an hour.

TABLE 15.—Percentage Distribution of Workers in the Flour-Milling Industry, by Average Hourly Earnings, Region, and Size of Mill, February 1941

Average hourly earnings	All workers	Workers in mills with average wage-earner employment of—					
		1 to 5 <sup>1</sup>	6 to 20 <sup>1</sup>	21 to 50	51 to 100	101 to 250	251 and over
All regions							
Under 30.0 cents.....	4.3	23.5	3.6	0.9	0.1	-----	-----
Exactly 30.0 cents.....	10.4	22.0	25.5	14.3	1.9	0.8	-----
30.1 and under 32.5 cents.....	1.8	5.5	2.0	3.0	.1	.1	-----
32.5 and under 35.0 cents.....	2.4	7.3	4.5	2.3	.5	.6	-----
35.0 and under 37.5 cents.....	5.1	5.9	6.8	7.7	4.4	3.1	-----
37.5 and under 40.0 cents.....	2.3	4.7	3.3	4.2	1.2	.1	-----
40.0 and under 42.5 cents.....	5.6	7.2	10.5	7.8	4.8	2.2	-----
42.5 and under 45.0 cents.....	2.1	3.0	4.2	3.0	1.6	.3	1.0
45.0 and under 47.5 cents.....	4.0	4.3	7.5	5.9	3.4	1.3	1.3
47.5 and under 50.0 cents.....	5.4	2.6	4.1	3.8	6.1	10.8	1.3
50.0 and under 52.5 cents.....	6.2	4.6	8.3	7.3	9.6	3.0	1.0
52.5 and under 57.5 cents.....	7.9	2.8	4.1	10.2	12.8	8.3	2.5
57.5 and under 62.5 cents.....	7.8	2.4	4.5	9.1	14.1	6.6	6.5
62.5 and under 67.5 cents.....	7.2	2.6	2.1	7.0	8.6	10.7	11.7
67.5 and under 72.5 cents.....	7.6	.3	2.7	5.7	7.7	12.3	22.6
72.5 and under 77.5 cents.....	6.2	.5	1.1	2.6	8.8	14.1	8.4
77.5 and under 82.5 cents.....	5.0	.1	2.8	2.1	8.5	6.3	13.3
82.5 and under 87.5 cents.....	4.4	.4	.6	1.5	1.7	11.5	16.5
87.5 and under 92.5 cents.....	1.7	.2	.6	.2	1.9	2.5	7.5
92.5 and under 97.5 cents.....	.8	.1	.2	.5	.5	1.9	1.5
97.5 and under 102.5 cents.....	.9	-----	.5	.7	.8	1.1	4.0
102.5 and under 112.5 cents.....	.4	-----	.2	.1	.4	1.1	.4
112.5 and under 122.5 cents.....	.4	-----	.3	-----	.2	1.1	1.2
122.5 and under 132.5 cents.....	.1	-----	-----	.1	.2	.2	.3
132.5 cents and over.....	(?)	-----	-----	-----	.1	-----	-----
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of mills.....	611	397	106	61	28	14	5
Number of workers.....	8, 623	1, 352	1, 087	1, 841	1, 908	1, 753	682
Average hourly earnings.....	\$0.535	\$0.358	\$0.426	\$0.485	\$0.600	\$0.674	\$0.758

See footnotes at end of table.

TABLE 15.—Percentage Distribution of Workers in the Flour-Milling Industry, by Average Hourly Earnings, Region, and Size of Mill, February 1941—Continued

Average hourly earnings	All workers	Workers in mills with average wage-earner employment of—					
		1 to 5	6 to 20	21 to 50	51 to 100	101 to 250	251 and over
<b>Pacific, Lake ports, and Northwest</b>							
Exactly 30.0 cents.....	(?)			0.3			
30.1 and under 32.5 cents.....	0.2	4.0		.5			
32.5 and under 35.0 cents.....	.6	18.8			0.2		
35.0 and under 37.5 cents.....	1.3	9.3	0.8	7.0		0.1	
37.5 and under 40.0 cents.....	.3	10.7				.1	
40.0 and under 42.5 cents.....	1.0	10.7	1.6	2.6	1.2		
42.5 and under 45.0 cents.....	.7	6.7	3.3	1.0		.4	0.2
45.0 and under 47.5 cents.....	1.2	5.3	4.1	3.1		.1	1.6
47.5 and under 50.0 cents.....	2.6	1.3	3.3	1.3	.2	4.8	1.6
50.0 and under 52.5 cents.....	2.6	14.7	16.3	3.4	.2	1.8	1.2
52.5 and under 57.5 cents.....	3.8	2.7	.8	9.8	1.9	4.5	1.1
57.5 and under 62.5 cents.....	6.3	5.3	18.7	16.6	5.6	3.4	2.8
62.5 and under 67.5 cents.....	10.9	4.0	2.4	18.3	16.8	8.1	8.4
67.5 and under 72.5 cents.....	18.0	1.3	10.6	16.1	16.2	18.5	23.5
72.5 and under 77.5 cents.....	13.7	1.3	1.6	7.0	18.4	18.7	9.1
77.5 and under 82.5 cents.....	13.8	1.3	23.6	6.5	26.6	8.8	15.4
82.5 and under 87.5 cents.....	12.1	1.3	2.4	3.6	4.3	17.9	17.8
87.5 and under 92.5 cents.....	4.4	1.3	4.1	.5	4.3	3.7	8.8
92.5 and under 97.5 cents.....	2.1		.8	1.6	1.5	3.2	1.6
97.5 and under 102.5 cents.....	2.1		1.6	.8	1.4	1.9	4.6
102.5 and under 112.5 cents.....	1.1		1.6		1.0	2.0	.5
112.5 and under 122.5 cents.....	1.0		2.4			1.7	1.4
122.5 and under 132.5 cents.....	.2				.2	.3	.4
132.5 cents and over.....							
<b>Total.....</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Number of mills.....	69	27	10	13	7	8	4
Number of workers.....	2,095	75	123	386	517	1,023	571
Average hourly earnings.....	\$0.725	\$0.456	\$0.675	\$0.622	\$0.738	\$0.756	\$0.779
<b>All other regions</b>							
Under 30.0 cents.....	6.3	24.7	4.0	1.2	0.1		
Exactly 30.0 cents.....	14.9	23.2	28.7	18.0	2.7	1.9	
30.1 and under 32.5 cents.....	2.5	5.6	2.3	3.7	.1	.8	
32.5 and under 35.0 cents.....	3.3	6.7	5.1	3.0	.6	1.5	
35.0 and under 37.5 cents.....	6.7	5.7	7.6	7.9	6.0	7.4	
37.5 and under 40.0 cents.....	3.2	4.3	3.7	5.3	1.7		
40.0 and under 42.5 cents.....	7.7	7.0	11.7	9.1	6.1	5.2	
42.5 and under 45.0 cents.....	2.8	2.8	4.4	3.5	2.2	.3	
45.0 and under 47.5 cents.....	5.3	4.2	7.9	6.7	4.6	2.9	
47.5 and under 50.0 cents.....	6.7	2.7	4.3	4.5	8.3	19.1	
50.0 and under 52.5 cents.....	7.8	4.0	7.3	8.3	13.2	4.8	
52.5 and under 57.5 cents.....	9.8	2.8	4.6	10.3	17.0	13.6	
57.5 and under 62.5 cents.....	8.6	2.2	2.7	7.1	17.3	11.1	
62.5 and under 67.5 cents.....	5.4	2.5	2.1	3.9	5.5	14.3	
67.5 and under 72.5 cents.....	2.9	.2	1.7	3.0	4.5	3.6	
72.5 and under 77.5 cents.....	2.9	.5	1.0	1.4	5.2	7.7	
77.5 and under 82.5 cents.....	1.0	.1	.1	.9	1.7	2.7	
82.5 and under 87.5 cents.....	.9	.4	.3	1.0	.7	2.5	
87.5 and under 92.5 cents.....	.4	.2	.1	.1	1.1	.7	
92.5 and under 97.5 cents.....	.2	.2	.1	.3	.1		
97.5 and under 102.5 cents.....	.4		.3	.6	.6	.1	
102.5 and under 112.5 cents.....	.1			.1	.2		
112.5 and under 122.5 cents.....	.1				.2	.3	
122.5 and under 132.5 cents.....	.1			.1	.2		
132.5 cents and over.....	(?)				.1		
<b>Total.....</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	
Number of mills.....	542	370	96	48	21	6	
Number of workers.....	35,928	1,277	964	1,455	1,391	730	
Average hourly earnings.....	*\$0.455	\$0.353	\$0.399	\$0.453	\$0.546	\$0.557	

<sup>1</sup> See footnote 1, table 9.

<sup>2</sup> Less than 1/10 of 1 percent.

<sup>3</sup> Includes 1 mill which employed more than 250 workers. Only a part of the workers in this mill were included to prevent overweighting this size class.

*Influence of size of city.*—It is undoubtedly true that the location of numerous small mills in small towns and rural communities contributes to the relatively low-wage scale that is typical of these mills. Two-thirds of all mills surveyed which employed less than 6 workers are in communities smaller than 2,500 population, four-fifths are in towns smaller than 5,000 population, and 93 percent are in towns smaller than 25,000. Reference to table 9 will show that, in general, the regions where wages are lowest not only have a larger proportion of their grain-mill workers in small mills than do regions with a higher wage level, but they also have relatively more workers in small towns. A comparison by size of city of average wages in plants with 6 or more wage earners is presented in table 16. Wages in the smallest communities averaged 44.0 cents an hour and those in the largest, 78.8 cents. If the smallest mills were included, the differences in wage level would be even more pronounced.

TABLE 16.—Average Hourly Earnings of Workers in the Flour-Milling Industry, by Size of City, February 1941<sup>1</sup>

Size of city (population)	Number of mills	Number of workers	Average hourly earnings
All sizes.....	214	7,271	\$0.573
Under 2,500.....	58	905	.440
2,500 and under 5,000.....	25	466	.412
5,000 and under 25,000.....	64	1,867	.482
25,000 and under 100,000.....	25	980	.569
100,000 and under 500,000.....	29	1,997	.656
500,000 and over.....	13	1,056	.788

<sup>1</sup> Data for mills with fewer than 6 workers are not included in this tabulation.

#### WAGES OF OCCUPATIONAL GROUPS

The relative wage levels of the principal occupations in flour mills are shown in table 17.<sup>7</sup> Millwrights and other skilled maintenance and laboratory workers received the highest wages, averaging more than 80 cents an hour; female packers had the lowest average (38.7 cents). Millers, representing the largest skilled occupation, were paid an average wage of 67.1 cents. Packers, check weighers, and sack sewers—a group of related occupations which comprise the principal group of semiskilled workers—had an average wage of 54.5 cents. Unskilled labor, primarily warehouse truckers and loaders and bulk-grain unloaders, earned an average wage of 52.5 cents an hour.

<sup>7</sup> Further detail regarding occupational variations in earnings is available in the Bureau and will be furnished on request.

TABLE 17.—Average Hourly Earnings, Average Weekly Hours, and Average Weekly Earnings of Workers in the Flour-Milling Industry, by Skill, Occupation, and Sex, February 1941<sup>1</sup>

Skill, occupation, and sex	Number of workers	Average hourly earnings	Average weekly hours	Average weekly earnings
All occupations.....	7, 271	\$0. 573	41. 6	\$23. 85
Total males.....	7, 136	. 575	41. 8	24. 05
Total females.....	135	. 412	32. 7	13. 46
Skilled.....	1, 229	. 686	44. 7	30. 67
Males.....	1, 222	. 686	44. 8	30. 69
Females.....	7	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Elevator operators (working foremen), male.....	90	. 587	45. 7	26. 84
Engineers, male.....	101	. 832	46. 0	29. 06
Foremen, working, production and packing.....	123	. 674	42. 9	28. 92
Males.....	119	. 681	42. 9	29. 23
Females.....	4	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Foremen, working, receiving, shipping, and stock, male.....	216	. 621	43. 9	27. 28
Machinists and mechanics, male.....	60	. 699	46. 0	32. 12
Millers, male.....	371	. 671	46. 3	31. 06
Millwrights, male.....	130	. 807	44. 1	35. 57
Miscellaneous maintenance occupations, male.....	105	. 831	42. 3	35. 19
Miscellaneous laboratory occupations.....	33	. 836	40. 7	34. 03
Males.....	30	. 829	40. 8	33. 78
Females.....	3	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Semiskilled.....	3, 606	. 563	41. 8	23. 54
Males.....	3, 495	. 567	42. 2	23. 91
Females.....	111	. 386	31. 4	12. 10
Bolters, male.....	91	. 772	42. 7	32. 99
Elevator assistants (grain distributors, weighmen, cleaners, etc.), male.....	196	. 641	41. 6	26. 71
Firemen, male.....	95	. 559	42. 8	23. 93
Hammermill operators, male.....	35	. 583	44. 1	25. 69
Miscellaneous laboratory occupations.....	60	. 609	40. 1	24. 42
Males.....	53	. 635	41. 3	26. 20
Females.....	7	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Miscellaneous maintenance occupations, male.....	145	. 632	42. 6	26. 91
Miscellaneous occupations, production, packing and warehouse.....	140	. 524	43. 0	22. 54
Males.....	135	. 527	43. 6	22. 94
Females.....	5	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Mixer operators, male.....	162	. 545	42. 4	23. 10
Oilers, male.....	374	. 569	41. 9	23. 85
Packers, check weighers, and sewers.....	1, 744	. 545	40. 4	22. 00
Males.....	1, 645	. 553	40. 9	22. 59
Females.....	99	. 387	31. 6	12. 20
Roll tenders, mill, male.....	67	. 785	42. 1	33. 03
Smutters, male.....	80	. 674	41. 6	28. 04
Sputmen, mill, and general assistants to millers, male.....	146	. 546	45. 2	24. 72
Truck drivers, male.....	271	. 454	47. 7	21. 66
Unskilled.....	2, 436	. 525	39. 8	20. 88
Males.....	2, 419	. 526	39. 8	20. 90
Females.....	17	. 443	38. 1	16. 86
General elevator laborers, male.....	64	. 412	43. 4	17. 89
General mill laborers and helpers, male.....	291	. 409	41. 7	17. 06
General warehouse laborers.....	503	. 546	38. 8	21. 19
Males.....	489	. 549	38. 8	21. 30
Females.....	14	. 431	40. 0	17. 24
Grain unloaders, elevator, male.....	143	. 613	38. 2	23. 43
Loaders and unloaders, warehouse, male.....	558	. 572	39. 7	22. 71
Miscellaneous maintenance and service occupations.....	42	. 555	41. 3	22. 89
Males.....	39	. 556	42. 2	23. 49
Females.....	3	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Sweepers, male.....	323	. 546	39. 3	21. 44
Truckers, male.....	354	. 528	38. 5	20. 34
Watchmen, male.....	158	. 444	42. 4	18. 82

<sup>1</sup> Data for mills with fewer than 5 workers are not included in this tabulation.

<sup>2</sup> Not a sufficient number of workers to justify the computation of an average.

### The Feed Industry

Feed mills, like flour mills, are scattered over the entire country. According to Census of Manufactures reports, New York State produces about 23 percent of the industry's product in terms of value and

employs approximately 2,200 workers. California, Illinois, and Ohio have more than 1,000 workers each, and Pennsylvania, Texas, Missouri, and Tennessee have between 500 and 1,000. Practically all other States have a few workers in the industry.

The feed industry has a few producers who operate large mills or have several mills at various locations, but a vast majority of the manufacturers are single-unit operators of small mills. The results of the Bureau's mail survey of very small establishments indicate that nine-tenths of all feed mills have fewer than 21 workers, and that these small mills employ 46 percent of the industry's labor force and produce more than one-third of its product value. In fact, between 65 and 70 percent of the mills employ less than 6 workers. The 1939 report of the Census of Manufactures classifies only 18 out of a total of 1,383 mills as employing more than 100 workers each, and 44 additional establishments had between 50 and 100 workers. The largest feed mill in the country employs less than 200. The Bureau's survey indicates that scarcely 15 percent of the mixed-feed establishments in the country have an annual production valued in excess of \$250,000.

Mill location in small towns also is characteristic of this industry. Three-fourths of all mills, employing almost half of the industry's workers, are in towns with less than 25,000 population. The distribution of the feed industry with respect to size of city, size of mill, and unionization within the various regions, as indicated by the Bureau's sample, is shown in table 18. Table 19 distributes the mills by value of product classification.

TABLE 18.—Percentage Distribution of Workers Included in Survey of the Feed Industry, by Size of Mill, Size of City, Unionization, and Region, 1941

Item	All regions	North-east and East Central	Lake ports	South-east	North-west	West Central, South-west, and Mountain	Pacific
<b>Size of mill (number of workers):</b>							
1 to 5 <sup>1</sup> .....	34.8	51.3	5.0	12.9	77.2	43.0	32.3
6 to 20 <sup>1</sup> .....	11.3	11.5	9.0	8.9	10.6	12.3	15.9
21 to 50.....	18.7	16.7	20.3	16.5	12.2	27.1	16.9
51 to 100.....	20.0	8.7	32.1	41.0	-----	17.6	9.7
101 and over.....	15.2	11.8	33.6	20.7	-----	-----	25.2
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Size of city (population):</b>							
Under 2,500.....	16.8	27.5	-----	6.0	42.6	15.5	16.8
2,500 and under 5,000.....	7.5	12.2	.2	.5	15.9	10.6	6.9
5,000 and under 25,000.....	21.3	28.3	2.6	17.9	23.9	21.2	21.7
25,000 and under 100,000.....	19.9	21.3	6.0	21.1	4.3	28.4	16.4
100,000 and under 500,000.....	24.5	10.2	-----	52.7	13.3	24.3	28.1
500,000 and over.....	10.0	.5	91.2	1.8	-----	-----	10.1
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Unionization: <sup>2</sup></b>							
Union.....	23.7	12.7	73.7	11.8	16.5	12.0	56.3
Nonunion.....	76.3	87.3	26.3	88.2	83.5	88.0	43.7
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0

<sup>1</sup> See footnote 1, table 9.

<sup>2</sup> See footnote 1, table 7.

**TABLE 19.—Distribution of Mills in the Feed Industry, by Value of Product Classification and by Region, 1940**

Value of product	All regions	North-east and East Central	Lake ports	South-east	North-west	West Central, South-west, and Mountain	Pacific
Total.....	1 633	271	15	61	50	159	77
Under \$5,000.....	26	6	-----	2	7	10	1
\$5,000 and under \$10,000.....	28	8	-----	-----	7	13	-----
\$10,000 and under \$15,000.....	36	12	-----	1	6	15	2
\$15,000 and under \$20,000.....	32	14	-----	-----	3	10	5
\$20,000 and under \$25,000.....	63	26	1	4	7	17	8
\$25,000 and under \$50,000.....	127	67	1	5	11	28	15
\$50,000 and under \$100,000.....	91	44	3	7	4	23	10
\$100,000 and under \$250,000.....	85	39	1	11	3	14	17
\$250,000 and over.....	91	28	9	25	1	14	14
Unknown <sup>2</sup> .....	54	27	-----	6	1	15	5

<sup>1</sup> Included are 27 mills with no wage earners.

<sup>2</sup> All mills in this classification have less than 6 employees.

The Bureau's survey covered 606 establishments and 5,653 wage earners (table 20). Reports from an additional 27 mills that employed no wage earners were received in the mail survey of small mills and have been included in certain tabulations relating to type and value of product.

**TABLE 20.—Number of Mills and Workers Included in Survey of Wages in the Feed Industry, by Region, 1941**

Region	Mills			Workers		
	Total	Commer-cial mills	Small mills	Total	Commer-cial mills	Small mills
All regions.....	606	126	1 490	5, 653	3, 685	1 1, 968
Northeast and East Central.....	259	37	222	1, 859	906	963
Lake ports.....	15	10	5	502	477	25
Southeast.....	58	30	28	1, 390	1, 185	175
Northwest.....	47	4	43	183	43	145
West Central, Southwest, and Mountain.....	150	27	123	904	566	428
Pacific.....	77	18	59	750	508	242

<sup>1</sup> Data for small feed mills presented in this table have been weighted in the proportions necessary to permit direct combination with data for commercial mills.

#### AVERAGE HOURLY EARNINGS

The average wage paid to the 5,653 feed-mill workers covered in the survey was 46.1 cents an hour in February 1941 (table 21).<sup>8</sup> About 7 percent of the workers were paid less than 30 cents, and 14 percent received exactly 30 cents an hour. A little more than 40 percent earned less than 40 cents an hour (table 22). However, one-fourth of

<sup>8</sup> The basic average wage was increased approximately 3 percent by premium overtime pay. The actual February average hourly earnings including extra rates for overtime amounted to slightly more than 47 cents.

all workers earned 59.0 cents an hour or more. Considering the narrow range of skills required for the bulk of the labor force, it is evident that the industry has some relatively high-wage firms.

TABLE 21.—Average Hourly Earnings of Workers in the Feed Industry, by Region and Size of Mill, February and September 1941

Region and size of mill	Number of mills	Number of workers	February average	September	
				Average (estimated)	Percentage increase over February
<b>Total:</b>					
Including small mills <sup>1</sup> .....	606	5,653	\$0.461	\$0.488	5.9
Excluding small mills.....	126	3,685	.497	.539	8.5
<b>Region:</b>					
Northeast and East Central except Lake ports ..	259	1,859	.468	.489	4.5
Lake ports.....	15	502	.654	.730	11.6
Southeast.....	58	1,360	.354	.376	6.2
Northwest.....	47	188	.428	.432	.9
West Central, Southwest, and Mountain.....	150	994	.378	.389	2.9
Pacific.....	77	750	.654	.695	6.3
<b>Size of mill:</b>					
1 to 5 workers.....	480	1,968	.404	(1)	-----
6 to 20 workers.....	65	641	.462	.502	8.7
21 to 50 workers.....	36	1,055	.480	.513	6.9
51 to 100 workers.....	18	1,129	.477	.515	8.0
101 workers and over.....	7	860	.572	.635	11.0

<sup>1</sup> Information concerning wage changes was not obtained for the small mills which were surveyed by mail. For the purpose of estimating an average wage for September 1941 for all plants, by region, it was assumed that no wage changes occurred in the small mills. See footnote 1, table 4.

The average wage had increased from 46.1 cents to an estimated 48.8 cents by September 1941, an advance of 5.9 percent. This estimate is based on the assumption that no advance in wages had occurred in the very small mills which were surveyed by mail, and for which wage data for a September period are not available. The average wage in the mills with 6 or more wage earners, for which data are available advanced from 49.7 to 53.9 cents an hour, an increase of 8.5 percent (table 21). Whereas 35.5 percent of the workers in mills employing 6 workers or more were being paid less than 40 cents in February, this percentage had dropped to 28.5 in September (table 23).

*Regional differences.*—The differences in the wage levels of various sections of the country are marked, although not as wide as those existing in the flour-milling industry. They follow the same general pattern, the Lake ports and Pacific States being high-wage areas (both 65.4 cents in February), and the Southeastern States and the West Central and Southwestern region relatively low-wage areas (35.4 and 37.8 cents). The Northwest region does not have the importance in the feed industry that it assumes in flour milling, most of its feed mills being very small. Earnings in the Northwestern feed mills (42.8 cents) were lower than in the more important Northeastern and East

Central region (46.8 cents). The Lake-port cities advanced wages an average of 11.6 percent, the Pacific and Southeast by approximately 6 percent, and the Northeast and East Central by almost 5 percent. Wage increases were not general in either the West Central and Southwest region nor the Northwest (table 21).

*Union and nonunion wages.*—Feed mills which had collective bargaining agreements paid wages which averaged more than 20 cents higher than the average wage in nonunion mills (table 24). Both types of mills effected wage increases during 1941, however, and in substantially the same relative amounts. Most of the union mills are among the larger establishments, and are located in the high-wage regions.

TABLE 22.—Percentage Distribution of Workers in the Feed Industry, by Average Hourly Earnings and Region, February 1941

Average hourly earnings	All regions	North-east and East Central	Lake ports	South-east	North-west	West Central, South-west, and Mountain	Pacific
Under 30.0 cents	6.7	4.6	-----	5.7	26.1	16.5	0.7
Exactly 30.0 cents	14.0	3.3	-----	37.6	9.5	19.7	.5
30.1 and under 32.5 cents	2.8	3.6	-----	3.9	3.7	3.0	.3
32.5 and under 35.0 cents	6.4	6.1	-----	12.4	4.3	6.9	.5
35.0 and under 37.5 cents	8.9	6.5	3.8	16.7	3.2	10.9	2.5
37.5 and under 40.0 cents	3.8	3.9	-----	5.4	4.3	4.9	1.5
40.0 and under 42.5 cents	7.0	8.4	2.8	8.0	4.7	8.1	3.9
42.5 and under 45.0 cents	2.6	4.9	.8	.7	2.7	2.8	1.5
45.0 and under 47.5 cents	4.9	9.4	1.0	2.9	2.7	3.7	2.1
47.5 and under 50.0 cents	2.7	3.0	2.6	.4	2.7	6.7	.9
50.0 and under 52.5 cents	6.6	14.8	2.2	1.0	2.7	2.6	5.1
52.5 and under 57.5 cents	7.0	14.3	1.8	1.0	5.2	3.5	8.7
57.5 and under 62.5 cents	5.3	5.2	20.9	1.2	3.2	2.6	6.7
62.5 and under 67.5 cents	5.5	6.1	14.5	.9	16.4	3.4	6.5
67.5 and under 72.5 cents	6.0	2.5	20.3	.6	1.1	1.5	21.9
72.5 and under 77.5 cents	4.9	1.5	19.7	.4	3.2	2.1	16.1
77.5 and under 82.5 cents	2.3	.8	3.4	.4	1.1	.4	11.6
82.5 and under 87.5 cents	.8	.2	.4	.1	1.6	.2	4.1
87.5 and under 92.5 cents	.7	.3	1.2	.1	-----	.2	3.2
92.5 and under 97.5 cents	.2	.2	.4	-----	-----	.1	.4
97.5 and under 102.5 cents	.2	.1	1.4	.1	1.1	.1	.1
102.5 and under 112.5 cents	.3	.1	1.0	.3	.5	.1	.5
112.5 and under 122.5 cents	.2	.1	1.0	.1	-----	-----	.3
122.5 and under 132.5 cents	.1	.1	.2	-----	-----	-----	.4
132.5 cents and over	.1	-----	.6	.1	-----	-----	-----
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of mills	606	259	15	58	47	150	77
Number of workers	5,653	1,859	502	1,360	188	994	750
Average hourly earnings	\$0.461	\$0.468	\$0.654	\$0.354	\$0.428	\$0.378	\$0.654

*Wages in large and small mills.*—A fairly consistent mill-size wage differential is apparent in this industry also (table 25). Feed mills with fewer than 6 workers paid average hourly wages of 40.4 cents (February), which was almost 5 cents higher than the average for small flour mills. The average for feed mills with 6 to 20 workers

TABLE 23.—Percentage Distribution of Workers in the Feed Industry, by Average Hourly Earnings and Region, February and September 1941<sup>1</sup>

Average hourly earnings	All regions		Northeast and East Central		Lake ports		Southeast		Northwest		West Central, Southwest, and Mountain		Pacific	
	February	September	February	September	February	September	February	September	February	September	February	September	February	September
Under 30.0 cents	1.2	1.0	0.1				2.4	1.9			3.0	2.7		
Exactly 30.0 cents	16.9	9.8	.8	0.6			39.2	21.9	2.3	2.3	25.2	17.0	0.2	0.2
30.1 and under 32.5 cents	1.5	1.4	1.7	.1			2.9	2.6	4.7	4.7	.9	3.2	.2	
32.5 and under 35.0 cents	4.7	5.5	.8	.7			12.2	15.2	2.3	2.3	3.7	2.7		.2
35.0 and under 37.5 cents	8.7	5.3	2.8	3.6	4.0		17.5	10.3			11.8	7.4		
37.5 and under 40.0 cents	2.5	5.5	1.2	.9			5.5	11.6			3.0	10.2		
40.0 and under 42.5 cents	6.1	8.0	5.6	2.5	2.9	4.0	8.9	18.2			8.1	6.4	1.8	
42.5 and under 45.0 cents	2.1	3.1	5.1	3.5	.2	.2	.7	3.9			3.7	5.8		.2
45.0 and under 47.5 cents	4.3	3.0	9.6	3.6	1.0		3.3	3.9			4.6	5.8	.6	
47.5 and under 50.0 cents	3.4	2.4	5.7	4.6	.2	2.7	.4	.9			10.8	3.4	1.0	.4
50.0 and under 52.5 cents	6.2	5.0	18.8	9.7	2.3	.8	1.1	2.4	4.7	4.7	2.3	10.7	3.7	.6
52.5 and under 57.5 cents	8.3	7.8	23.8	24.7	1.7	1.3	1.2	1.7	13.9	14.0	5.1	1.9	6.7	3.9
57.5 and under 62.5 cents	6.4	5.6	7.0	12.9	21.4	1.0	1.3	1.4	7.0	7.0	4.2	7.1	5.7	4.5
62.5 and under 67.5 cents	6.7	7.3	9.5	12.8	14.3	10.7	1.0	1.1	51.1	2.3	6.0	7.8	4.7	8.5
67.5 and under 72.5 cents	7.8	7.4	3.5	12.4	21.4	20.0	.6	.8		48.8	2.7	2.7	25.7	3.7
72.5 and under 77.5 cents	7.0	6.5	2.3	3.3	20.8	15.7	.4	.3	4.7	4.7	3.4	3.2	22.2	21.5
77.5 and under 82.5 cents	3.3	8.1	1.3	1.9	3.6	26.1	.5	.8	4.7	2.3	.5	.9	16.3	28.4
82.5 and under 87.5 cents	.9	4.0		1.0	.4	10.9	.1	.2	2.3	2.3	.4	.5	5.1	15.9
87.5 and under 92.5 cents	.8	1.1	.3	.8	1.3	1.0	.1	.1		2.3			3.9	5.5
92.5 and under 97.5 cents	.1	.7		.2	.4	.2					.2	.2	.4	3.9
97.5 and under 102.5 cents	.3	.3			1.5	.8	.2	.2			.2	.2	.2	.6
102.5 and under 112.5 cents	.4	.5		.1	1.0	1.7	.3	.3	2.3	2.3	.2	.2	.8	.8
112.5 and under 122.5 cents	.2	.3			.8	1.3	.1	.2					.4	.4
122.5 and under 132.5 cents	.1	.2	.1	.1	.2	.6							.4	.6
132.5 cents and over	.1	.2			.6	1.0	.1	.1						.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of mills	128	128	37	37	10	10	30	30	4	4	27	27	18	18
Number of workers	3,685	3,685	906	906	477	477	1,185	1,185	43	43	566	566	508	508
Average hourly earnings	\$0.497	\$0.539	\$0.522	\$0.570	\$0.660	\$0.741	\$0.361	\$0.387	\$0.622	\$0.648	\$0.422	\$0.443	\$0.711	\$0.775

<sup>1</sup> Data for mills with fewer than 6 workers are not included in this tabulation.

was 46.2 cents, also higher than for flour mills of a comparable size. Workers in mills with 21 to 50 workers had average earnings of 48.0 cents, practically the same as in flour mills of that size. The average for mills with 51 to 100 workers (47.7 cents) was about the same as that for the next smaller class, but the largest mills, with more than 100 workers, paid average wages of 57.2 cents. It is interesting to note that the largest feed mills paid substantially lower wages than did the largest flour mills. This, together with the fact that wages in large mills have more weight in the flour than in the feed industry, largely accounts for the difference between the wage levels of the two industries.

TABLE 24.—Average Hourly Earnings of Workers in the Feed Industry, by Region and Unionization, February and September 1941<sup>1</sup>

Region and union status	Number of mills	Number of workers	February average	September	
				Average (estimated)	Percentage increase over February
All regions.....	126	3,685	\$0.497	\$0.539	8.5
Union.....	29	1,340	.641	.697	8.7
Nonunion.....	97	2,345	.420	.456	8.6
Northeast and East Central.....	37	906	.522	.570	9.2
Union.....	7	237	.597	.642	7.5
Nonunion.....	30	669	.497	.547	10.1
Lake ports.....	10	477	.660	.741	12.3
Union.....	5	370	.694	.771	11.1
Nonunion.....	5	107	.542	.635	17.2
Southeast.....	30	1,185	.361	.387	7.2
Union.....	1	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Nonunion.....	29	( <sup>2</sup> )	.353	.379	7.4
Northwest.....	4	43	.622	.648	4.2
Union.....	2	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Nonunion.....	2	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
West Central, Southwest, and Mountain.....	27	566	.422	.443	5.0
Union.....	4	119	.577	.591	2.4
Nonunion.....	23	447	.387	.410	5.9
Pacific.....	18	508	.711	.775	9.0
Union.....	10	422	.725	.789	8.8
Nonunion.....	8	86	.646	.710	9.9

<sup>1</sup> Data for mills with fewer than 6 workers are not included in this tabulation.

<sup>2</sup> Included in total to avoid disclosure of individual mill information.

<sup>3</sup> An average is not computed for fewer than 3 plants.

*Size of city influence.*—Wages in feed mills located in the larger cities are substantially higher than those in small-town mills. This condition, of course, results in part from the stronger union organization and larger manufacturing units in the cities. A comparison by size of city of average wages in mills with six or more wage earners is shown in table 26. Wages in the smallest communities averaged 41.3 cents an hour and those in the largest, 66.7 cents. If the smallest mills were included, the differences in wage level probably would be more pronounced.

**TABLE 25.—Percentage Distribution of Workers in the Feed Industry, by Average Hourly Earnings, Region, and Size of Mill, February 1941**

Average hourly earnings	All workers	Workers in mills with average wage-earner employment of—				
		1 to 5 <sup>1</sup>	6 to 20 <sup>1</sup>	21 to 50	51 to 100	101 and over
<b>All regions</b>						
Under 30.0 cents .....	6.7	16.9	5.9	0.3	0.4	0.1
Exactly 30.0 cents .....	14.0	8.7	12.2	22.6	18.6	10.6
30.1 and under 32.5 cents .....	2.8	5.1	4.5	.5	1.5	.7
32.5 and under 35.0 cents .....	6.4	9.7	2.8	1.7	8.1	5.5
35.0 and under 37.5 cents .....	8.9	9.2	5.8	9.1	10.0	8.4
37.5 and under 40.0 cents .....	3.8	6.1	2.8	1.2	3.8	2.2
40.0 and under 42.5 cents .....	7.0	8.8	9.4	4.4	9.5	1.4
42.5 and under 45.0 cents .....	2.6	3.7	3.0	4.0	1.0	.5
45.0 and under 47.5 cents .....	4.9	5.9	5.1	8.3	3.0	.6
47.5 and under 50.0 cents .....	2.7	1.4	2.7	3.4	5.9	.5
50.0 and under 52.5 cents .....	6.6	7.3	13.1	8.3	3.0	2.6
52.5 and under 57.5 cents .....	7.0	4.7	8.7	7.4	6.2	11.9
57.5 and under 62.5 cents .....	5.3	3.2	7.3	5.6	2.5	11.9
62.5 and under 67.5 cents .....	5.5	3.4	2.8	7.0	4.0	12.6
67.5 and under 72.5 cents .....	6.0	2.6	6.7	3.2	9.3	12.0
72.5 and under 77.5 cents .....	4.9	1.0	3.7	5.1	10.0	7.8
77.5 and under 82.5 cents .....	2.3	.4	1.9	5.5	1.2	4.7
82.5 and under 87.5 cents .....	.8	.6	-----	1.4	.3	1.6
87.5 and under 92.5 cents .....	.7	.5	1.2	.6	-----	1.9
92.5 and under 97.5 cents .....	.2	.3	-----	.1	.1	.3
97.5 and under 102.5 cents .....	.2	.2	.2	.1	.4	.5
102.5 and under 112.5 cents .....	.3	.1	.2	.2	.2	1.2
112.5 and under 122.5 cents .....	.2	.1	-----	-----	.4	.3
122.5 and under 132.5 cents .....	.1	.1	-----	-----	.2	.2
132.5 cents and over .....	.1	-----	-----	-----	.4	-----
<b>Total .....</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Number of mills .....	606	430	65	36	18	7
Number of workers .....	5,653	1,968	641	1,055	1,129	860
Average hourly earnings .....	\$0.461	\$0.404	\$0.462	\$0.490	\$0.477	\$0.572
<b>Pacific, Lake ports, and Northwest</b>						
Under 30.0 cents .....	3.8	13.1	-----	-----	-----	-----
Exactly 30.0 cents .....	1.5	4.9	1.1	-----	-----	-----
30.1 and under 32.5 cents .....	.8	1.5	1.6	-----	-----	-----
32.5 and under 35.0 cents .....	.8	2.7	.5	-----	-----	-----
35.0 and under 37.5 cents .....	3.1	6.1	2.7	5.6	-----	-----
37.5 and under 40.0 cents .....	1.3	4.6	-----	-----	-----	-----
40.0 and under 42.5 cents .....	3.6	7.0	4.3	5.6	0.4	-----
42.5 and under 45.0 cents .....	1.4	4.6	-----	.4	-----	-----
45.0 and under 47.5 cents .....	1.8	4.4	.5	2.4	.4	-----
47.5 and under 50.0 cents .....	1.7	4.6	1.1	1.6	-----	-----
50.0 and under 52.5 cents .....	3.8	5.3	8.7	2.8	-----	2.5
52.5 and under 57.5 cents .....	5.8	8.7	7.1	2.4	3.8	5.6
57.5 and under 62.5 cents .....	11.2	6.6	21.3	6.0	1.3	21.5
62.5 and under 67.5 cents .....	10.6	9.5	6.5	18.2	3.0	13.7
67.5 and under 72.5 cents .....	18.6	8.7	21.3	9.1	39.3	21.7
72.5 and under 77.5 cents .....	15.7	2.9	13.1	16.2	41.5	14.5
77.5 and under 82.5 cents .....	7.4	1.0	4.9	20.5	4.3	8.7
82.5 and under 87.5 cents .....	2.5	1.7	-----	5.6	.4	3.9
87.5 and under 92.5 cents .....	2.1	1.0	4.3	2.0	-----	3.6
92.5 and under 97.5 cents .....	.3	.2	-----	.4	-----	.8
97.5 and under 102.5 cents .....	.7	.5	.5	.4	1.7	.6
102.5 and under 112.5 cents .....	.7	-----	.5	.8	-----	2.0
112.5 and under 122.5 cents .....	.5	.2	-----	-----	1.7	.6
122.5 and under 132.5 cents .....	.3	.2	-----	-----	.9	.3
132.5 cents and over .....	.2	-----	-----	-----	1.3	-----
<b>Total .....</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Number of mills .....	139	107	18	8	3	3
Number of workers .....	1,440	412	184	252	234	353
Average hourly earnings .....	\$0.620	\$0.485	\$0.630	\$0.663	\$0.732	\$0.661

See footnote 1, table 9.

TABLE 25.—Percentage Distribution of Workers in the Feed Industry, by Average Hourly Earnings, Region, and Size of Mill, February 1941—Continued

Average hourly earnings	All workers	Workers in mills with average wage-earner employment of—				
		1 to 5	6 to 20	21 to 50	51 to 100	101 and over
		All other regions				
Under 30.0 cents.....	7.8	18.0	8.3	0.4	0.4	0.2
Exactly 30.0 cents.....	18.2	9.8	16.5	29.7	23.7	18.0
30.1 and under 32.5 cents.....	3.5	6.1	5.7	.6	1.9	1.2
32.5 and under 35.0 cents.....	8.4	11.4	3.7	2.2	10.2	9.4
35.0 and under 37.5 cents.....	10.8	9.9	7.0	10.2	12.8	14.3
37.5 and under 40.0 cents.....	4.6	6.6	3.9	1.6	4.8	3.8
40.0 and under 42.5 cents.....	8.2	9.3	11.4	4.0	11.8	2.4
42.5 and under 45.0 cents.....	3.1	3.5	4.2	5.1	1.2	.8
45.0 and under 47.5 cents.....	6.0	6.4	7.0	10.2	3.7	1.0
47.5 and under 50.0 cents.....	3.0	.6	3.3	4.0	7.5	.8
50.0 and under 52.5 cents.....	7.5	7.8	14.9	10.1	3.8	2.6
52.5 and under 57.5 cents.....	7.5	8.6	9.4	9.0	6.8	16.5
57.5 and under 62.5 cents.....	3.3	2.3	1.8	5.5	2.8	5.0
62.5 and under 67.5 cents.....	3.8	1.7	1.3	3.5	4.2	12.0
67.5 and under 72.5 cents.....	1.7	1.0	.9	1.4	1.5	5.2
72.5 and under 77.5 cents.....	1.3	.5	-----	1.6	1.9	3.0
77.5 and under 82.5 cents.....	.6	.3	.7	.7	.3	1.8
82.5 and under 87.5 cents.....	.2	.3	-----	.1	.2	-----
87.5 and under 92.5 cents.....	.2	.3	-----	.1	-----	.6
92.5 and under 97.5 cents.....	.1	.3	-----	-----	.1	-----
97.5 and under 102.5 cents.....	.1	.1	-----	-----	.1	.4
102.5 and under 112.5 cents.....	.1	.1	-----	-----	.2	.6
112.5 and under 122.5 cents.....	( <sup>2</sup> )	.1	-----	-----	-----	.2
122.5 and under 132.5 cents.....	( <sup>2</sup> )	.1	-----	-----	-----	.2
132.5 cents and over.....	( <sup>2</sup> )	-----	-----	-----	.1	-----
Total.....	100.0	100.0	100.0	100.0	100.0	100.0
Number of mills.....	467	373	47	28	15	4
Number of workers.....	4,213	1,556	457	803	895	502
Average hourly earnings.....	\$0.411	\$0.384	\$0.404	\$0.427	\$0.414	\$0.484

<sup>2</sup> Less than 1/10 of 1 percent.

TABLE 26.—Average Hourly Earnings of Workers in the Feed Industry, by Size of City, February 1941<sup>1</sup>

Size of city (population)	Number of mills	Number of workers	Average hourly earnings
All sizes.....	126	3,635	\$0.497
Under 2,500.....	16	224	.413
2,500 and under 5,000.....	10	104	.457
5,000 and under 25,000.....	30	773	.477
25,000 and under 100,000.....	31	857	.454
100,000 and under 500,000.....	26	1,158	.435
500,000 and over.....	13	539	.667

<sup>1</sup> Data for mills with fewer than 6 workers are not included in this tabulation.

#### WAGES IN OCCUPATIONAL GROUPS

The average hourly earnings of workers in the major feed-mill occupations are shown in table 27.<sup>9</sup> Millwrights (80.4 cents an hour) and other skilled maintenance workers were the highest paid wage earners

<sup>9</sup> Further detail regarding occupational variations in earnings is available in the Bureau and will be furnished on request.

in the industry. General unskilled laborers had the lowest earnings, averaging about 39 cents. Packers, check weighers, and sack sewers—the largest group of semiskilled workers—had average wages of 46.5 cents; truckers averaged 41.5 cents, and loaders and unloaders earned an average of 49.6 cents per hour. Mixer operators, a key occupation in the semiskilled classification, had average earnings of 52.8 cents.

TABLE 27.—Average Hourly Earnings, Average Weekly Hours, and Average Weekly Earnings of Workers in the Feed Industry, by Skill, Occupation, and Sex, February 1941<sup>1</sup>

Skill, occupation, and sex	Number of workers	Average hourly earnings	Average weekly hours	Average weekly earnings
All occupations .....	3,685	\$0.497	42.9	\$21.29
Total males .....	3,645	.497	43.0	21.38
Total females .....	40	.454	30.7	13.91
<b>Skilled</b> .....	467	.635	44.9	28.53
Males .....	466	.635	45.0	28.54
Females .....	1	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Elevator operators (working foremen), male .....	18	.581	46.3	26.99
Engineers, male .....	16	.651	45.3	29.52
Foremen, working, production and packing, and laboratory occupations .....	95	.613	45.9	28.14
Males .....	94	.613	46.0	28.18
Females .....	1	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Foremen, working, receiving, shipping, and stock, male .....	167	.594	43.8	26.03
Machinists and mechanics, male .....	34	.572	47.9	27.44
Millers, male .....	48	.588	46.2	27.13
Millwrights, male .....	51	.804	46.0	36.94
Miscellaneous maintenance occupations, male .....	38	.784	41.1	32.25
<b>Semiskilled</b> .....	1,496	.497	43.9	21.84
Males .....	1,472	.498	44.1	21.97
Females .....	24	.469	30.5	14.30
Elevator assistants (grain distributors, cleaners, weighmen, etc.), male .....	56	.577	42.6	24.58
Firemen, male .....	23	.534	42.4	22.64
General assistants to millers, male .....	25	.505	44.2	22.32
Hammermill operators, male .....	114	.546	43.2	23.61
Miscellaneous occupations, production, laboratory, packing, and warehouse .....	112	.522	42.4	22.13
Males .....	104	.524	44.1	23.09
Females .....	8	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Miscellaneous maintenance occupations, male .....	48	.586	42.5	24.92
Mixer operators, male .....	252	.528	43.7	23.07
Oilers, male .....	40	.539	41.7	22.48
Packers, check weighers, and sewers .....	598	.465	43.4	20.17
Males .....	582	.465	43.6	20.27
Females .....	16	.473	35.0	16.57
Pellet-machine operators, male .....	34	.551	43.5	23.99
Truck drivers, male .....	194	.453	48.6	22.00
<b>Unskilled</b> .....	1,722	.455	41.4	18.86
Males .....	1,707	.455	41.5	18.91
Females .....	15	.418	30.3	12.63
General mill laborers and helpers, male .....	199	.395	43.0	16.97
General warehouse laborers .....	263	.476	40.8	19.43
Males .....	250	.478	41.3	19.77
Females .....	13	.413	31.6	13.03
Grain unloaders and general elevator laborers, male .....	75	.499	41.5	20.67
Loaders and unloaders, warehouse, male .....	305	.486	42.8	21.19
Miscellaneous maintenance and service occupations .....	62	.387	42.1	16.33
Males .....	60	.386	42.8	16.54
Females .....	2	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Mixer feeders (sack dumpers), male .....	222	.484	42.1	20.39
Sweepers, male .....	71	.527	40.3	21.22
Truckers, male .....	479	.415	39.7	16.50
Watchmen, male .....	43	.501	44.5	22.29

<sup>1</sup> Data for mills with fewer than 6 workers are not included in this tabulation.

<sup>2</sup> Not a sufficient number of workers to justify the computation of an average.

*The Cereals Industry*

The cereals industry had a total of 70 establishments in 1939, with average employment of approximately 7,500 wage earners. Although very small manufacturing units are important numerically, 97 percent of the industry's workers are in mills with more than 20 workers each, and 87 percent are employed in units with more than 100 workers.<sup>10</sup>

The industry may be divided roughly into three product branches, namely, manufacturers of ready-to-serve breakfast cereals, producers of oatmeal and rolled oats, and producers of other uncooked cereal preparations. There is some overlapping among these groups. However, the bulk of the product is made in mills which specialize in a particular type (table 28).

Ready-to-serve cereals represent about 60 percent of all cereal preparations, in terms of product value; oat cereal, largely oatmeal and rolled oats, comprises a little more than 20 percent; uncooked cereals, other than oats, are about 10 percent; corn grits and hominy for table use are approximately 3 percent; and other cereal preparations, including coffee substitutes, are about 4 percent of the total product value.<sup>10</sup> The ready-to-serve cereal branch includes not only the largest mill units in the industry, but the largest in the entire group of grain-mill products industries. Some relatively large mills are likewise found among producers of oatmeal and rolled oats. Most of the establishments specializing in other uncooked cereals have less than 100, and several have fewer than 20 workers.

TABLE 28.—Percentage Distribution of the Total Value of Product of Each Branch of the Cereals Industry, by Type of Product, 1940

Product	Approximate percentage of total product value in —			
	Total industry	Ready-to-serve cereals branch	Oatmeal and rolled oats branch	Other uncooked cereals branch
All products.....	100.0	100.0	100.0	100.0
Total cereal products.....	75.4	92.6	58.8	96.8
Ready-to-serve.....	43.7	91.9	6.1	1.0
Oatmeal and rolled oats.....	24.2	—	49.6	—
Other.....	7.5	—	1.1	95.8
Feed by product.....	10.1	1.2	19.4	—
Other grain milling.....	7.5	1.7	14.0	(?)
Wheat flour.....	3.4	—	6.4	(?)
Other.....	4.1	1.0	7.6	(?)
Prepared feeds.....	4.5	.5	8.8	—
Blended and prepared flour from purchased flour.....	.2	—	—	3.1
Other.....	2.3	4.0	1.0	—

<sup>1</sup> These data are presented as an approximate distribution only. Complete data were not available for 3 establishments, for which total-value data were allocated to the major product.

<sup>2</sup> Less than  $\frac{1}{10}$  of 1 percent.

<sup>10</sup> U. S. Census of Manufactures, 1939.

Table 29 shows the distribution of the mills surveyed with respect to some of the more important variables affecting wage structure.

**TABLE 29.—Distribution of Mills and Workers Included in Survey of the Cereals Industry, by Type of Product, Size of Mill, Size of City, and Unionization, 1941**

Item	Number of mills	Number of workers	Percentage of all workers
<b>Type of product:</b>			
Ready-to-serve cereals.....	15	2,059	59.3
Oatmeal and rolled oats.....	9	1,258	36.3
Other uncocked cereals.....	9	152	4.4
Total.....	33	3,469	100.0
<b>Size of mill (number of workers):<sup>1</sup></b>			
1 to 20.....	9	76	2.2
21 to 100.....	8	328	9.5
101 to 250.....	6	730	21.0
251 to 500.....	6	936	27.0
501 and over.....	4	1,399	40.3
Total.....	33	3,469	100.0
<b>Size of city (population):</b>			
Under 25,000.....	7	258	7.4
25,000 and under 100,000.....	11	2,170	62.6
100,000 and under 500,000.....	11	684	19.7
500,000 and over.....	4	357	10.3
Total.....	33	3,469	100.0
<b>Unionization:</b>			
Union.....	14	1,902	54.8
Nonunion.....	19	1,567	45.2
Total.....	33	3,469	100.0

<sup>1</sup> In order to avoid overrepresentation of the larger mills only part of the workers in some such mills were included in the Bureau's survey.

#### AVERAGE HOURLY EARNINGS

The cereal-preparations industry has the highest general wage level of any of the industries comprising the grain-mill products group. Basic hourly earnings in the 33 mills covered by the Bureau's survey averaged 67.3 cents in February 1941 (table 30).<sup>11</sup> A distribution of workers by their average hourly earnings shows between 5 and 10 percent of the industry's wage earners in each 5-cent class from 37.5 cents to 92.5 cents, a 55-cent range containing 86 percent of all workers. One-fourth of the workers received less than 51.7 cents, and one-fourth more than 81.0 cents. Few more than 5 percent were paid less than 40 cents an hour (table 31).

<sup>11</sup> The basic average wage was increased 2.4 percent by premium overtime pay. The actual February average hourly earnings including extra rates for overtime amounted to 68.9 cents.

TABLE 30.—Average Hourly Earnings of Workers in the Cereals Industry, by Type of Product and Size of Mill, February and September 1941

Type of product and size of mill	Number of mills	Number of workers	February average	September	
				Average (estimated)	Percentage increase over February
Total.....	33	8,469	\$0.673	\$0.715	6.2
Type of product:					
Ready-to-serve cereals.....	15	2,059	.723	.764	5.7
Oatmeal and rolled oats.....	9	1,258	.605	.651	7.6
Other uncooked cereals.....	9	152	.572	.594	3.8
Size of mill:					
Under 21 workers.....	9	76	.480	.499	4.0
21 to 100 workers.....	8	828	.598	.638	6.7
101 to 250 workers.....	6	730	.622	.643	3.4
251 to 500 workers.....	6	936	.644	.688	6.8
501 workers and over.....	4	1,899	.751	.805	7.2

TABLE 31.—Percentage Distribution of Workers in the Cereals Industry, by Average Hourly Earnings and by Type of Product, February and September 1941

Average hourly earnings	All products		Ready-to-serve cereals		Oatmeal and rolled oats		Other uncooked cereals	
	February	September	February	September	February	September	February	September
Exactly 30.0 cents.....	0.6	0.2	0.1	(1)	0.1	-----	11.2	3.9
30.1 and under 32.5 cents.....	.4	.3	(1)	(1)	.5	-----	3.3	7.2
32.5 and under 35.0 cents.....	.6	.5	.3	0.3	1.0	0.5	1.3	3.3
35.0 and under 37.5 cents.....	.9	.7	.6	.6	.9	.3	3.9	5.3
37.5 and under 40.0 cents.....	2.8	1.2	2.3	1.2	4.1	1.4	.7	-----
40.0 and under 42.5 cents.....	4.6	2.7	2.8	2.7	7.3	2.2	6.6	5.9
42.5 and under 45.0 cents.....	4.2	3.1	4.1	2.2	4.7	4.6	1.3	2.0
45.0 and under 47.5 cents.....	4.1	3.6	3.1	2.4	5.4	5.6	7.2	3.3
47.5 and under 50.0 cents.....	1.9	2.5	1.6	1.6	2.1	3.7	5.3	5.9
50.0 and under 52.5 cents.....	7.0	7.6	7.3	8.4	6.4	6.0	9.2	9.9
52.5 and under 57.5 cents.....	10.2	6.1	6.2	4.1	17.5	9.5	3.9	4.6
57.5 and under 62.5 cents.....	8.1	9.6	6.6	6.4	11.2	15.5	2.0	3.3
62.5 and under 67.5 cents.....	8.7	8.8	8.6	5.8	9.1	14.3	5.3	3.3
67.5 and under 72.5 cents.....	8.9	7.5	6.4	7.7	11.9	7.3	17.7	6.6
72.5 and under 77.5 cents.....	7.2	9.9	7.6	7.7	6.4	12.2	7.9	21.0
77.5 and under 82.5 cents.....	6.9	7.1	8.0	8.1	5.5	5.8	3.9	3.9
82.5 and under 87.5 cents.....	6.3	7.2	9.4	8.7	1.9	5.2	2.0	3.3
87.5 and under 92.5 cents.....	5.2	5.3	8.0	7.5	1.1	2.1	2.6	2.6
92.5 and under 97.5 cents.....	3.7	4.6	5.5	6.9	1.0	1.3	.7	.7
97.5 and under 102.5 cents.....	3.6	3.7	5.3	5.5	1.0	1.0	2.6	2.0
102.5 and under 112.5 cents.....	3.5	6.2	5.6	10.0	.5	.9	-----	-----
112.5 and under 122.5 cents.....	.4	1.3	.5	1.9	.2	.3	.7	1.3
122.5 and under 132.5 cents.....	.1	.2	.1	.2	.1	.2	.7	-----
132.5 cents and over.....	.1	.1	(1)	.1	.1	.1	-----	.7
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of mills.....	33	33	15	15	9	9	9	9
Number of workers.....	3,469	3,469	2,059	2,059	1,258	1,258	152	152
Average hourly earnings.....	\$0.673	\$0.715	\$0.723	\$0.764	\$0.605	\$0.651	\$0.572	\$0.594

<sup>1</sup> Less than 1/10 of 1 percent.

By September, wages had advanced 6.2 percent, increasing average hourly earnings from 67.3 cents to 71.5 cents and reducing to 2.9 percent the proportion of workers earning less than 40 cents an hour.

*Product differences.*—The highest general wage level is found in that branch which produces principally ready-to-serve cereals. This branch is dominated by a few very large manufacturers, but it also contains several small producers. Its workers received an average wage of 72.3 cents an hour in February, and 76.4 cents in September 1941. At the former date, only 3.3 percent of the wage earners in these mills earned less than 40 cents an hour, and by September the number had been reduced to 2.1 percent.

The average wage paid by the oatmeal and rolled oats producers was 60.5 cents in February and 65.1 cents in September, indicating a relatively larger increase than occurred in the ready-to-serve cereal factories. Whereas 6.6 percent of the workers earned less than 40 cents in February, only 2.2 percent, practically the same proportion as in ready-to-serve cereal mills were in that category in September. The oat-cereal branch of the industry is dominated by one large concern. The total number of producers in this branch is believed to be less than a dozen; there are no extremely small mills.

The third and smallest branch of the industry, which produces principally uncooked cereals other than oatmeal, has generally smaller manufacturing units than either of the other branches. The nine mills of this branch which were surveyed had an average wage level of 57.2 cents in February and 59.4 cents in September 1941. Wage increases during the year were restricted to relatively fewer establishments than in either of the other two branches of the industry. The lowest-wage branch of the cereals industry, this group of mills has approximately 20 percent of the total labor classified as earning less than 40 cents an hour.

*Union and nonunion wages.*—Slightly more than half of the workers covered were under collective bargaining agreements with their employers. The union workers' earnings were more than 5 cents an hour higher on the average, than those of their nonunion fellow workers. Union worker earnings of 69.8 cents in February had increased to 73.9 cents in September. The respective figures for nonunion workers were 64.3 cents and 68.6 cents.

*Wages in large and small mills.*—The difference in the wage levels of large and small manufacturing units is pronounced. Average earnings of 48.0 cents an hour in February 1941 in mills with 20 wage earners or less may be compared with a 75.1-cent average in the largest mills. The respective September averages were 49.9 and 80.5 cents, 3 of the 9 small mills and all of the large ones having increased wage rates during the intervening months.

*Region and size of city.*—It is impossible to draw from the Bureau's sample definite conclusions regarding regional differences in wages in the cereal industry. The mills studied are so few and so widely

scattered geographically that the regional influence cannot be isolated. It may be said that the highest wages in the industry are paid in the Battle Creek, Mich., mills. Rates of large manufacturers in other locations are only slightly lower. The mills where wages are lowest are located in the West Central, Northwestern, and Southern States. However, these are predominantly small units, frequently located in small towns. There is evidence that the characteristics and policies of individual large companies exercise an important influence on the wage structure of the industry.

#### WAGES OF OCCUPATIONAL GROUPS

The relative wage levels of the principal occupations in cereal mills are shown in table 32.<sup>12</sup> As in other grain-mill products industries, millwrights and other skilled maintenance workers earned the highest wages of all occupational groups. Packers, the most important occupation numerically, had average earnings of 53.7 cents; male packers earned 62.5 cents and female packers, 49.8 cents. The earnings of unskilled workers averaged 65.7 cents an hour.

TABLE 32.—Average Hourly Earnings, Average Weekly Hours, and Average Weekly Earnings of Workers in the Cereals Industry, by Skill, Occupation, and Sex, February 1941

Skill, occupation, and sex	Number of workers	Average hourly earnings	Average weekly hours	Average weekly earnings
All occupations.....	3,469	\$0.673	37.9	\$25.51
Total males.....	2,462	.734	39.6	29.04
Total females.....	1,007	.496	33.8	16.87
Skilled.....	729	.839	40.4	33.92
Males.....	696	.849	40.5	34.38
Females.....	33	.629	38.3	24.11
Elevator operators (working foremen), male.....	16	.818	40.9	33.49
Engineers, male.....	27	.927	42.8	39.69
Foremen, working, packing department.....	141	.737	39.4	29.01
Males.....	116	.766	39.4	30.18
Females.....	25	.604	39.1	23.60
Foremen, working, production departments.....	62	.837	41.7	34.93
Males.....	57	.847	42.4	35.94
Females.....	5	(1)	(1)	(1)
Foremen, working, receiving, shipping, and stock, male.....	138	.746	38.0	28.40
Machinists and mechanics, male.....	101	.941	40.8	38.38
Millers, male.....	38	.746	42.9	32.03
Millwrights, male.....	62	.972	40.9	39.73
Miscellaneous maintenance occupations, male.....	129	.907	41.7	37.80
Miscellaneous laboratory occupations.....	15	.853	40.0	34.11
Males.....	12	.882	40.0	35.30
Females.....	3	(1)	(1)	(1)
Semiskilled.....	1,995	.612	36.8	22.54
Males.....	1,072	.698	39.6	27.65
Females.....	923	.494	33.6	16.61
Cookers, male.....	70	.757	40.7	30.84
Dryers and temperers, male.....	54	.788	38.1	30.00
Elevator assistants (grain distributors, cleaners, weighmen, etc.), male.....	50	.662	39.7	26.29
Firemen, male.....	37	.744	44.1	32.78
Gun operators, male.....	33	.581	39.2	22.75

<sup>1</sup> Not a sufficient number of workers to justify the computation of an average.

<sup>12</sup> Further detail regarding occupational variations in earnings is available in the Bureau and will be furnished on request.

**TABLE 32.—Average Hourly Earnings, Average Weekly Hours, and Average Weekly Earnings of Workers in the Cereals Industry, by Skill, Occupation, and Sex, February 1941—Continued**

Skill, occupation, and sex	Number of workers	Average hourly earnings	Average weekly hours	Average weekly earnings
<b>Semiskilled—Continued.</b>				
Hammermill operators, male.....	18	\$0.718	39.8	\$28.56
Inspectors, product.....	111	.515	34.2	17.63
Males.....	11	.667	41.8	27.91
Females.....	100	.494	33.4	16.49
Millers' assistants (bolters, roll tenders, spoutmen, smutters, etc.), male.....	18	.691	41.7	28.81
Miscellaneous maintenance and service occupations.....	140	.712	40.4	28.75
Males.....	128	.734	40.5	29.72
Females.....	12	.472	38.8	18.32
Miscellaneous packing department and warehouse occupations.....	99	.534	34.5	18.44
Males.....	35	.683	39.2	26.77
Females.....	64	.435	31.9	13.88
Miscellaneous production and laboratory occupations.....	102	.683	38.4	26.23
Males.....	72	.732	40.1	29.38
Females.....	30	.545	34.2	18.67
Mixer operators, male.....	62	.641	36.6	23.48
Oilers, male.....	55	.642	40.8	26.18
Oven operators, male.....	64	.839	39.1	32.86
Packers.....	987	.537	35.0	18.78
Males.....	273	.625	38.6	24.11
Females.....	714	.498	33.6	16.76
Roll and shredder operators.....	69	.746	39.8	29.70
Males.....	66	.759	39.9	30.27
Females.....	3	(1)	(1)	(1)
Truck drivers, male.....	26	.758	41.0	31.07
<b>Unskilled.....</b>				
Males.....	745	.657	38.4	25.22
Females.....	694	.668	38.6	25.82
Females.....	51	.487	35.0	17.05
<b>General laborers and helpers, production departments.....</b>				
Males.....	103	.732	36.5	26.74
Females.....	99	.733	36.8	26.94
Females.....	4	(1)	(1)	(1)
<b>General warehouse laborers.....</b>				
Males.....	109	.650	36.7	23.88
Females.....	96	.679	36.7	24.88
Females.....	13	.440	37.4	16.46
Grain unloaders and general elevator laborers, male.....	24	.687	39.0	26.83
Loaders and unloaders, warehouse, male.....	108	.674	42.2	28.43
Miscellaneous maintenance and service occupations.....	61	.572	36.4	20.84
Males.....	27	.673	38.7	26.02
Females.....	34	.483	34.6	16.73
Sweepers, male.....	141	.630	38.7	24.41
Truckers, male.....	139	.653	37.6	24.53
Watchmen, male.....	60	.657	40.5	26.62

<sup>1</sup> Not a sufficient number of workers to justify the computation of an average.

### *The Prepared-Flour Industry*

The smallest division of the grain-mill products industries comprises 78 establishments in which purchased flour is blended, phosphated, or otherwise further processed for sale as special-purpose flour. Nine-tenths of all phosphated flour, however, more than three-fourths of the self-rising, one-half of the plain blended, and one-fourth of all other prepared flour are produced by the flour-milling industry.

#### AVERAGE HOURLY EARNINGS

Workers in the 19 establishments surveyed by the Bureau earned an average basic wage of 43.9 cents in February 1941. By September, this basic wage had increased to 45.1 cents.

The individual average hourly earnings of about 97 percent of the workers fell between 30.0 and 82.5 cents in both periods. Examining table 33, it will be observed that in February the distribution of workers was very uneven, with a major concentration of 36.1 percent at exactly 30.0 cents, a second lesser concentration of 16.0 percent between 37.5 and 42.5 cents, and a cumulation of 9.5 percent between 62.5 and 67.5. The later wage increases pushed up the earnings in the lower classes, smoothing the distribution somewhat, but not eliminating the irregularity, which is primarily the result of wide regional differences in wage levels. In September, 33.3 percent of the workers received exactly 32.5 cents, and 51 percent were paid less than 40 cents an hour.

TABLE 33.—Percentage Distribution of Workers in the Prepared-Flour Industry, by Average Hourly Earnings, February and September 1941

Average hourly earnings	February	September
Under 30.0 cents.....	0.3	0.3
Exactly 30.0 cents.....	36.1	33.3
30.1 and under 32.5 cents.....	4.3	3.0
32.5 and under 35.0 cents.....	1.3	3.6
35.0 and under 37.5 cents.....	7.5	6.9
37.5 and under 40.0 cents.....	5.6	3.9
40.0 and under 42.5 cents.....	10.4	7.2
42.5 and under 45.0 cents.....	.3	5.6
45.0 and under 47.5 cents.....	2.6	3.6
47.5 and under 50.0 cents.....	1.0	.....
50.0 and under 52.5 cents.....	4.3	2.3
52.5 and under 57.5 cents.....	2.3	5.6
57.5 and under 62.5 cents.....	5.2	4.6
62.5 and under 67.5 cents.....	9.5	9.5
67.5 and under 72.5 cents.....	2.0	3.0
72.5 and under 77.5 cents.....	2.3	2.3
77.5 and under 82.5 cents.....	2.0	2.0
82.5 and under 87.5 cents.....	.3	.....
87.5 and under 92.5 cents.....	1.0	1.6
92.5 and under 97.5 cents.....	.....	.....
97.5 and under 102.5 cents.....	.7	.7
102.5 and under 112.5 cents.....	.3	.3
112.5 and under 122.5 cents.....	.....	.....
122.5 cents and over.....	.7	.7
Total.....	100.0	100.0
Number of mills.....	19	19
Number of workers.....	305	305
Average hourly earnings.....	\$0.439	\$0.451

Earnings in the few northern mills averaged 57.3 cents in February, as compared with a southern average of 34.0 cents. By September, northern wages had increased 3.1 percent and southern wages, 2.1 percent.

*Occupation and skill.*—The most important occupation, numerically, in prepared-flour mills is that of the packers. This is also the occupation in which most of the female workers are employed. Packers earned an average wage of 44.0 cents, which is slightly higher than the industry average. Mixer tenders averaged 45.6 cents an hour.

Unskilled warehouse labor was paid an average wage of 41.1 cents. The general average for all unskilled employees was 36.8 cents, and that for semiskilled workers was 44.6 cents. The few skilled workers in the industry received an average wage of 62.5 cents an hour. Detailed earnings data by occupation are presented in table 34.

TABLE 34.—Average Hourly Earnings, Average Weekly Hours, and Average Weekly Earnings of Workers in the Prepared-Flour Industry, by Skill, Occupation, and Sex, February 1941

Skill, occupation, and sex	Number of workers	Average hourly earnings	Average weekly hours	Average weekly earnings
All occupations .....	305	\$0.439	39.7	\$17.44
Total males .....	271	.442	40.3	17.81
Total females .....	34	.411	35.3	14.50
Skilled <sup>1</sup> .....	29	.625	42.7	26.68
Males .....	26	.628	43.0	27.02
Females .....	3	(?)	(?)	(?)
Semiskilled .....	173	.446	40.2	17.95
Males .....	142	.456	41.4	18.89
Females .....	31	.391	34.8	13.62
Mixer tenders, male .....	45	.456	41.0	18.69
Packers .....	86	.440	39.6	17.40
Males .....	66	.454	40.5	18.37
Females .....	20	.390	36.4	14.20
Other semiskilled production and maintenance workers <sup>2</sup> .....	42	.447	40.9	18.27
Males .....	31	.461	44.1	20.31
Females .....	11	.393	31.9	12.55
Unskilled workers, male .....	103	.368	38.0	13.98
Loaders, truckers, and general warehouse laborers .....	52	.411	35.5	14.61
Other unskilled production and maintenance workers <sup>4</sup> .....	51	.329	40.6	13.34

<sup>1</sup> Includes foremen and assistant foremen, miscellaneous professional workers, and skilled maintenance workers.

<sup>2</sup> Not a sufficient number of workers to justify the computation of an average.

<sup>3</sup> Includes hammermill operators, spoutmen, weighers, truck-drivers, oilers, firemen, and miscellaneous semiskilled production, packing, shipping, laboratory, and maintenance workers.

<sup>4</sup> Includes general laborers, miscellaneous unskilled packing-room workers, watchmen, and sweepers.