U. S. DEPARTMENT OF LABOR
JAMES J. DAVIS, Secretary
BUREAU OF LABOR STATISTICS
ETHELBERT STEWART, Commissioner

BULLETIN OF THE UNITED STATES BUREAU OF LABOR STATISTICS . . . . No. 310

EMPLOYMENT AND UNEMPLOYMENT SERIES

INDUSTRIAL UNEMPLOYMENT

A STATISTICAL STUDY OF ITS EXTENT AND CAUSES

By ERNEST S. BRADFORD, Ph. D.

Member Economic Advisory Committee, President's Conference on Unemployment

AUGUST, 1922

WASHINGTON
GOVERNMENT PRINTING OFFICE
1922

CONTENTS.

CHARTS.

BULLETIN OF THE
U. S. BUREAU OF LABOR STATISTICS

NO. 310 WASHINGTON AUGUST, 1922

INDUSTRIAL UNEMPLOYMENT: A STATISTICAL STUDY OF ITS EXTENT AND CAUSES.

INTRODUCTION AND SUMMARY.

The number of unemployed in September, 1921, was reported by the President's Conference on Unemployment, which held its first session September 26, 1921, in Washington, D. C., as between three and one-half and five and one-half millions, with a much greater number of persons dependent upon them. No attempt was made to estimate the number of these dependents, but on the basis of 30,000,000 employees in a total population of 105,000,000, the number should be between 10,000,000 and 15,000,000. For so large a proportion of our population to be without current income indicated a deeply disturbing situation which demanded prompt attention, and the conference centered its efforts on a program of action to mitigate existing conditions and to prevent them from becoming worse.

So incomplete were the data available that the committee on unemployment statistics of the conference reported: "The first step in meeting the emergency of unemployment intelligently is to know its extent and character, yet this conference finds itself without the data even for an accurate estimate of the number out of work." It is this lack of data which necessitated piecing together information from all possible sources in order to present even a partial picture of the situation. Reliable unemployment statistics for a long enough time to be significant cover so limited a portion of the country that assertions regarding the extent of unemployment or the relative importance of its causes must be carefully guarded in order to come within the realm of what is reasonably certain. The "state of the art" as applied to the statistics respecting unemployment is such as to leave much to be desired. The data contained in this bulletin are, therefore, necessarily incomplete but are presented in the hope that they may serve as a step toward a more perfect view of the subject. Such conclusions as seem to follow from the evidence at hand are set forth and the statistical basis for them is presented, so far as space is available, in order that the reader may be able to judge for himself as to their correctness.

This report deals mainly with the extent of unemployment and with some of the more permanent factors involved, fundamental matters regarding which information is necessary before the merits of particular remedies and preventive measures can be judged.

The principal conclusions arrived at are as follows:

1. Industrial wage earners in those States for which data are available lose about 10 per cent of their working time through unemployment, mainly from lack of work and exclusive of idleness due to sickness and labor disputes. On this basis, an average of at least a million and a half industrial wage earners in the United States are constantly unemployed, taking poor and prosperous years together.

2. Two and a half per cent of the working time of industrial wage earners appears to be lost from sickness and other disabilities, and an additional 1 per cent from labor disputes, or an average per worker from these two causes of about 10 days per year.

3. From such data as are available, it appears that partial unemployment, due to part-time operation of plants, shut-downs, time lost on account of waiting, and related causes, is responsible for a loss of about 10 per cent more of the working time of industrial wage earners. There may be some overlapping here with time lost from sickness and labor disputes.

4. There is a fairly regular seasonal decrease in employment in the manufacturing industries as a whole in midsummer and again in midwinter.

5. The unemployment due to depressional factors was more pronounced in 1920–21 than in 1907–8 or 1914–15.

The statistics here presented are the result of an effort to coordinate and interpret the available information regarding the unemployment which exists year after year and to present it in graphic form for greater quickness and ease of understanding. It is hoped that presenting the more permanent factors in the unemployment problem will call attention to its gravity, and that the pointing out of some of the elements composing it may aid in disclosing eventually how each may be dealt with, and what steps employers, wage earners, and the public generally can take to make unemployment less frequent, employment more secure, and business and industrial conditions to this extent more stable.

SCOPE OF REPORT.

This discussion of unemployment relates primarily to the manufacturing and mechanical industries, including the building and hand trades, and to a less extent to transportation and mining. This is because the records kept by responsible statistical bodies in the United States are confined mainly to wage earners in these lines, the data available as to unemployed persons in retail and wholesale trade, the clerical occupations, agriculture, and domestic service being in most instances too meager to constitute a substantial body of reliable statistics. It is in the manufacturing and construction industries particularly that data regarding unemployment are most important, since the division of labor has been carried further in these fields than elsewhere, and unemployment, which arises partly out of the division of labor, is more acute.

The usual census classification of persons gainfully employed by industries is not sufficient for the purpose of this study, since the gainfully employed include both employers, self-employed persons, and employees, and in each industry or group are included all three classes. In "trade," for example, nearly half of those gainfully

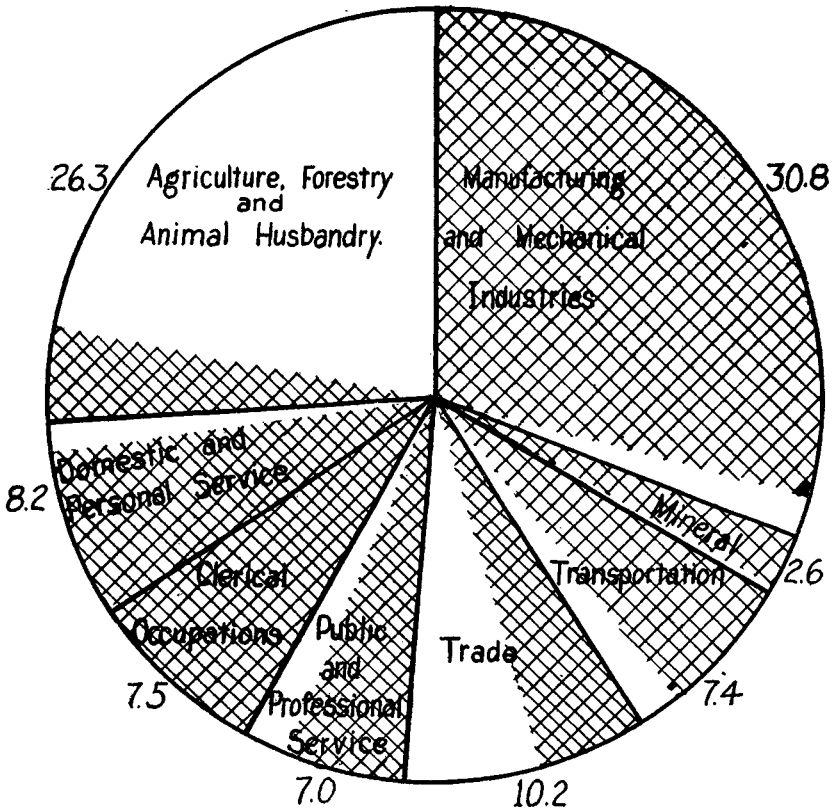
employed are retail storekeepers, wholesalers, and other employers or self-employed persons, while the remainder are clerks, salesmen, deliverymen, etc. The professional group consists mostly, but not entirely, of self-employed persons, lawyers, doctors, dentists, etc. In the manufacturing and mechanical industries there are a comparatively small number of employers; the rest are employees.

Chart 1 shows the proportion of employers and of employees in the principal groups of occupations.

CHART 1.—PROPORTION OF PERSONS GAINFULLY EMPLOYED IN EACH DIVISION OF INDUSTRY IN THE UNITED STATES.

[Based on U. S. Census of Occupations, 1920.]

Hatched portions represent employees; clear portions represent employers and self-employed.



According to the Census of Occupations of 1920 (November 19, 1921), the total number of persons over 10 years of age gainfully employed in the United States is about 41,600,000. Of these there are about 30,000,000 persons who may properly be called employees,[1] and of this number between 15,000,000 and 16,000,000 are found in the so-called "industrial group," which includes the manufacturing

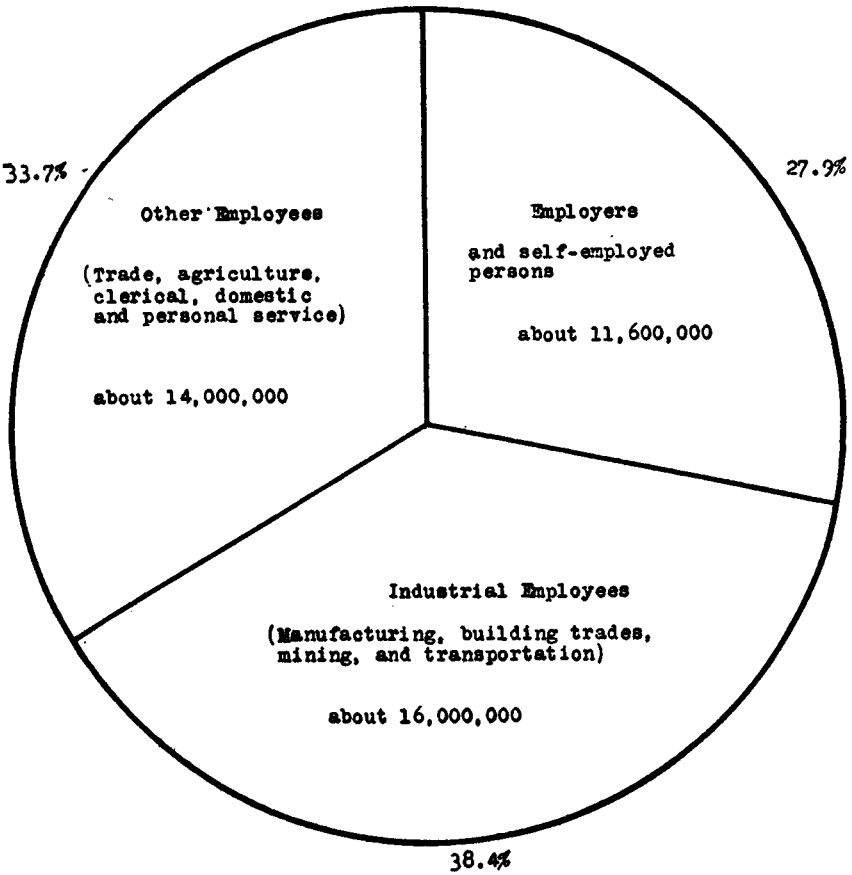
[1] Prof. Willford I. King estimates the number of employees in 1918 at 30,224,000, excluding about 9,750,000 employers and members of farmers' families who were working on their home farms. The writer's estimate, based on a detailed study of the occupation groups of the census of 1920, is about the same, the figures obtained being approximately 30,000,000 employees and 11,600,000 employers, self-employed persons, and farmers' children on home farms.

and mechanical industries, the extraction of minerals, and transportation. The census figures for 1920 for persons gainfully employed in these three classes are, in round numbers, as follows:

Manufacturing and mechanical industries	12,813,000
Extraction of minerals	1,090,000
Transportation	3,066,000
Total	16,969,000
Subtract employers and self-employed in these classes, estimated at about	1,065,000
Total industrial employees, about	15,904,000

CHART 2.—CLASSES OF EMPLOYEES AND EMPLOYERS IN INDUSTRY IN THE UNITED STATES.

[Based on U. S. Census of Occupations, 1920.]



Employees are those persons who are employed by an employer, the latter usually owning and supplying most of the equipment, including factory, machinery, and tools, while the former perform a certain part of the useful work required in the conversion of materials, and receive for their services a sum per unit of time or piece agreed

upon. Idleness affects persons thus employed more seriously than it does those who are employers or self-employed. The manufacturer, the farmer, the professional man, and other independent operators have usually greater financial resources than the wage earner, and hence are more able to tide themselves over a period of no income. Unemployment, therefore, relates primarily to those who are employees, and it is in relation to them that it becomes a problem of public interest. For this reason a more significant classification has been adopted here, namely, (1) employers and self-employed persons, (2) industrial employees, and (3) other employees, as indicated by Chart 2.

TRENDS IN EMPLOYMENT: FOUR DISTINCT MOVEMENTS.

In the field of industrial employment there are four distinct movements or trends, all of which are going on at the same time.

In the first place there is a gradual increase in the total number of persons employed in industry and in particular industries, the number of employees growing every year with the increase in population, and the augmented demand for manufactured goods. This continued increase in the number of employees, which of itself tends to be fairly uniform, is modified by two other movements or tendencies which are related to business conditions and which make it less regular, namely, seasonal variations and fluctuations due to business depressions.

These three industrial movements operate outside the individual manufacturing establishment. Within the factory or plant there goes on a "rotary" movement of replacement whereby constantly some workers are taking the place of others, by virtue of dismissals, voluntary leaving, or other forms of separation. This labor turnover may or may not affect the total number of workers employed at a given time, but it affects the employment of the individual wage earner who leaves a job to the extent of the time elapsing before he gets a new place and during which he is unemployed.

Since these movements go on simultaneously, the number of employed at any given time is a resultant of the four forces—the first tending to increase steadily the total number of employed; the second tending to high employment during certain busy seasons and low employment during slack periods; the third tending to overemployment during periods of prosperity or high pressure and marked underemployment during times of dull business and depressions; and the fourth a turnover of labor within each particular manufacturing plant, which is also responsible for a considerable amount of unemployment.

The first three of these movements are illustrated by the course of employment in Massachusetts,[2] an industrial State, for which data are available. Chart 3 represents the trend of the volume of employment in manufacturing from 1900 to 1921 in that State and is typical in a general way of the trend of manufacturing employment during those years in the United States as a whole. The curve shows distinctly, in addition to the general increase in employ-

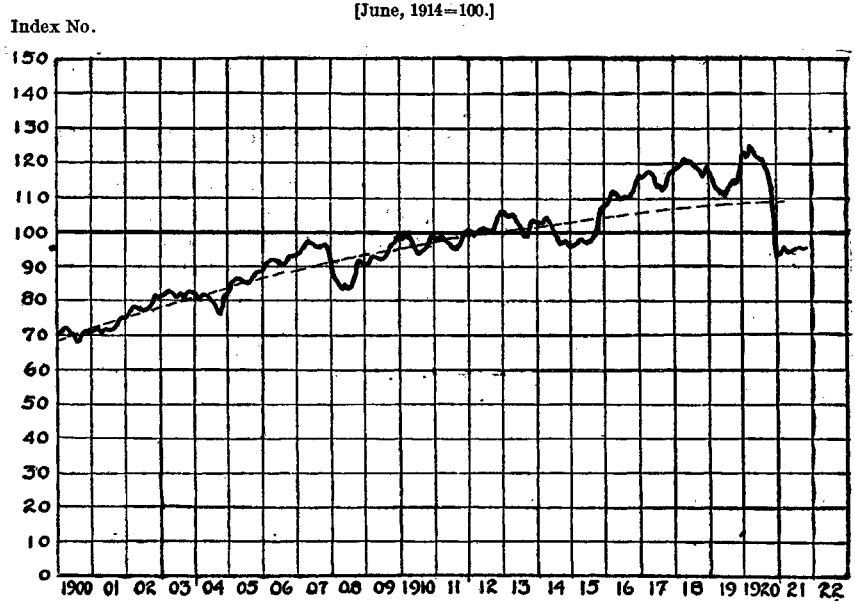
[2] See also Chart 8 (p. 36), employment curve for New Jersey. For the country as a whole such figures are not available except at 5-year periods in the data of the U. S. Census of Manufactures.

ment during the period, the depressions of 1908, 1914–15, and 1921,[3] while the smaller fluctuations represent seasonal changes.

Around these four main factors or industrial movements may be grouped most of the data available regarding unemployment. Each of them will be considered in its turn.

CHART 3.—GENERAL TREND OF EMPLOYMENT IN THE MANUFACTURING INDUSTRIES OF MASSACHUSETTS, 1900–1921.

[June, 1914=100.]



RATE OF NORMAL INCREASE IN NUMBER OF FACTORY EMPLOYEES.

Between 1899 and 1914, the number of wage earners in manufacturing industries in the United States increased from 4,712,000 to 7,036,000, an increase in 15 years of 49.3 per cent. Part of this was due to the natural increase in the population, and part to immigration. Between 1910 and 1914, for example, an average of about 400,000 immigrant workers (including skilled and unskilled) came into this country annually.[4] Except in times of depression, when lack of demand for goods causes factories to operate with reduced forces or to shut down entirely, the growing number of workers is absorbed by expanding industry.

Table 1 shows the increase in the number of wage earners in manufacturing since 1899 at five-year intervals, for the United States as a whole and for certain leading industrial States. These figures do not include salaried employees in manufacturing, nor any wage earners in the building trades. It is well to remember that the number of wage earners in manufacturing in 1919 is unduly high, because of the fact that the census of 1920 was taken just when the number attracted into factory work by the unusual wages of the war and

[3] The figures showing the number of persons employed in the manufacturing industries in Massachusetts upon which this chart is based are given in Table 1 of the Appendix (p. 47).

[4] These figures are net; that is, immigrant labor after emigrant labor is subtracted. The figures for 1915–1919, showing almost no net immigration, are for war years and not normal on that account.

postwar period was at the peak; the 1914 average is somewhat too low on account of the depression during the last half of that year; therefore the percentage of increase between 1914 and 1919 is abnormal.

TABLE 1.—INCREASE IN NUMBER OF WAGE EARNERS IN MANUFACTURING INDUSTRIES IN THE UNITED STATES AND IN FOUR INDUSTRIAL STATES, 1899 TO 1919, BY 5-YEAR PERIODS.

[U. S. Census of Manufactures.]

Year.	United States.		New York.		Massachusetts.		New Jersey.		Wisconsin.	
	Number.	Per cent of increase.	Number.	Per cent of increase.	Number.	Per cent of increase.	Number.	Per cent of increase.	Number.	Per cent of increase
1899	4,712,763	.....	726,909	.....	438,234	.....	213,975	.....	137,525	.....
1904	5,468,383	16.0	856,947	17.9	488,399	11.4	266,336	24.5	151,391	10.1
1909	6,615,046	21.0	1,003,981	17.2	584,559	19.7	326,223	22.5	182,583	20.6
1914	7,036,337	6.4	1,057,857	5.4	606,698	3.8	373,605	14.5	194,310	6.4
1919	9,098,119	29.3	1,228,369	16.1	713,836	17.7	508,921	36.2	263,949	35.8
1899–1914	.....	49.3	.....	45.5	.....	38.4	.....	74.6	.....	41.3

Before proceeding to the examination of the seasonal and depressional movements, it may be well to ascertain what is the total average unemployment due to all causes. The methods which are in use for measuring the extent of unemployment will first be considered, as they may affect the conclusions to be reached regarding the weight to be given to the figures in particular instances.

METHODS OF MEASURING UNEMPLOYMENT.

The extent of unemployment may be measured by several methods. Practically, the available records kept by responsible statistical bodies are based on two ways of measuring unemployment: (*a*) Fluctuations from time to time in the number of unemployed members reported by labor organizations; and (*b*) fluctuations from time to time in the number of persons on pay rolls of factories, considered in the aggregate for all industries, and by particular industries separately.

In attempting to measure the number of unemployed over a series of years, and thus to arrive at the amount of average or normal unemployment, either of the two methods mentioned may be used. Figures arrived at by both of these methods were taken into account by the President's Conference on Unemployment. A moment's critical consideration will show the respects in which each may rightly be given weight.

In order that unemployment percentages may have significance and also be comparable with other percentages, it is necessary to have a definite time factor in mind. This time element should be "continuous unemployment" or its equivalent. The statement that at a certain time in a given city 200,000 workers are unemployed, or that 16.2 per cent of the wage earners of New York were out of work on February 1, 1915, is of little significance for our purposes. It does not tell us how long they were out of work; it marks only the height of the crest of one wave, not the wave length. When, however, there is a record of unemployment in a particular State or industry over a

series of months, measured at regular intervals, the resulting figures may be taken with more assurance that they represent a continuing level of unemployment. The time factor becomes then a definite element which makes the figures comparable with figures for unemployment in other industries or States. If 10 per cent of the total number of wage earners are unemployed at the end of each month for a year, it is reasonable to conclude that the percentage of employees constantly out of work is about 10 per cent, even though the individual persons unemployed differ from one month to the next. Also, if 30 per cent of the persons in a given State or industry are out of work an average of four months per year, the loss in time and wages may be regarded, for purposes of comparison, as equivalent to 10 per cent out of work during the entire period of 12 months.

Figures collected regularly and consistently over a series of years and covering many industries are manifestly of more value than those relating to only one year or a single industry. As a matter of fact, the data on unemployment are so incomplete for the United States as a whole that in order to arrive at an approximately correct estimate of the average number of persons constantly out of work throughout the country in a normal year, it is necessary to combine figures covering the industries of an entire State over a considerable number of years with those covering all industries and all States but for only a single year. Also, it is necessary to use data secured by both of the methods named, i. e., the number of unemployed among organized wage earners and the fluctuations in the number of factory workers, in order to get a fairly complete view of the unemployment situation. Even so, the data can not be said to be entirely conclusive or satisfactory.

The four leading classes of data are the following:

1. State records of the unemployment of members of labor organizations, found in Massachusetts (1908 to date, quarterly) and New York (1904 to the middle of 1916, monthly); also there are some scattering data in other States (New Hampshire, half of 1915) covering periods of one year or less.

2. State records of fluctuations in the number of factory employees on pay rolls over a considerable period, found in Massachusetts (1878 to 1921, monthly); New Jersey (1898 to 1918, monthly);[5] also in New York since 1914, monthly, and Wisconsin since 1915, quarterly till July, 1920, and thereafter monthly. The last two series cover the war period, during which employment totals were not normal, and the fluctuations from month to month are not necessarily significant of peace-time variations. There are similar data for Ohio for one year, 1915, and recent figures for Arkansas and Illinois.

3. Federal records of fluctuations in employment of factory workers, found in the statistics of the United States Census of Manufactures (at five-year periods); United States Bureau of Labor Statistics (November, 1915, to date); and United States Employment Service (January, 1920, to date).

4. Certain special Federal and State investigations, in 1885, 1901, and 1912, which give a view of the total number of persons unemployed in a whole State or an industry during an entire year, or

[5] Less comprehensive data are available in New Jersey for 1895–1897

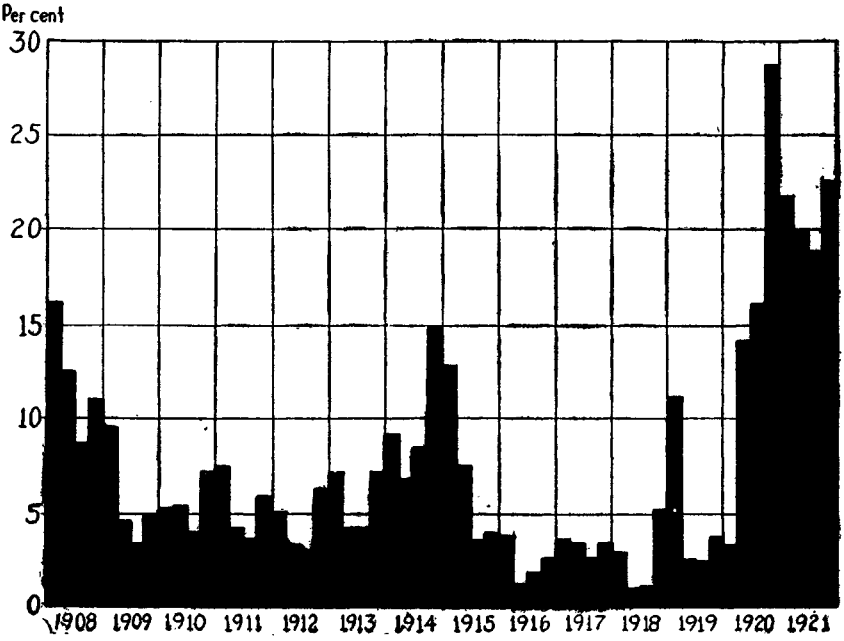
furnish a cross section of unemployment throughout the entire country. A more detailed account of each of these sources of information follows:

UNEMPLOYMENT OF ORGANIZED WAGE EARNERS.

MASSACHUSETTS.

The direct method of attempting to arrive at the number of unemployed is illustrated by the Massachusetts figures of industrial unemployment, based on the reports of labor union secretaries, showing the number of organized wage earners out of work at the

CHART 4.—PERCENTAGE OF UNEMPLOYMENT DUE TO LACK OF WORK OR MATERIAL AMONG ORGANIZED WAGE EARNERS IN MASSACHUSETTS, BY QUARTERS, 1908 TO 1921.



end of each quarter, from 1908 to date. The labor organizations reporting to the State department of labor and industries included in 1920 about 250,000 members, roughly 75 per cent of the total number of union wage earners in the State. This is believed to be a large enough proportion to be typical of the organized wage earners of the entire State. The figures appear to have been collected with care and on a reasonably consistent basis from year to year.

The average unemployment due to lack of work or material, that is, exclusive of disability or labor disputes, during the years 1908 to 1921, inclusive, has been about 8.8 per cent, or approximately 26 working days per year. Chart 4 shows the percentage of unemployment of organized wage earners due to lack of work or material, that is, exclusive of disability or labor disputes, for each quarter from 1908 to 1921. It also shows the comparative severity of the present depression as compared with the previous bad times of 1907–8, and 1914–15.

Table 2 gives the percentages of unemployment from which Chart 4 was drawn and also percentages of unemployment from all causes, for the same periods.

TABLE 2.—PER CENT OF UNEMPLOYED AMONG ORGANIZED WAGE EARNERS, IN MASSACHUSETTS, QUARTERLY, 1908 TO 1921.[1]

Year.	All causes.				Lack of work or material.			
	Unemployed at the end of—				Unemployed at the end of—			
	March.	June.	September.	December.	March.	June.	September.	December.
1908	17.9	14.4	10.6	13.9	16.2	12.5	8.7	11.0
1909	11.4	6.4	4.8	9.4	9.5	4.6	3.4	4.9
1910	7.1	7.0	5.6	10.2	5.3	5.4	4.0	7.3
1911	10.4	6.6	5.6	9.7	7.5	4.2	3.7	6.0
1912	[2] 14.1	5.3	4.7	9.1	5.1	3.4	3.0	6.4
1913	11.3	6.4	6.8	10.4	7.3	4.3	4.3	7.3
1914	12.9	9.9	11.0	18.3	9.2	6.9	8.5	14.9
1915	16.6	10.6	7.0	8.6	12.8	7.6	3.6	4.0
1916	8.6	4.2	3.9	6.0	3.9	1.3	1.9	2.7
1917	7.3	8.4	5.6	7.4	3.7	3.5	2.7	3.5
1918	6.0	3.0	[3] 6.0	9.5	3.0	1.0	1.1	5.3
1919	13.4	5.1	5.4	6.0	11.2	2.7	2.5	3.8
1920	8.7	18.8	19.3	31.8	3.4	14.2	16.1	28.7
1921	30.0	25.1	23.4	27.3	21.8	19.9	18.8	23.4

[1] Massachusetts Industrial Review, No. 7, March, 1922, p. 18.
[2] The percentage was unusually high because the number reported as unemployed included over 9,000 organized textile workers in Lowell who were involved in a strike pending on Mar. 30, 1912.
[3] If members who were ill with influenza had been excluded, the percentage of unemployed from all causes would have been less than 3 per cent.

There is no reason to believe that the percentages of unemployment, if reported in the middle instead of at the end of each quarter, or even at the end of each month, would result in a materially different unemployment average for the year. As to whether there is more unemployment among the unskilled than among the skilled, however, there is some direct evidence on this point in data collected for the Bureau of Labor Statistics by Brissenden and Frankel, covering 22 industrial establishments. The conclusion of these investigators is that "skilled workers are about twice as stable as semiskilled and unskilled ones," the rate at which wage earners quit or are laid off being twice as high among unskilled as among skilled workers, and the discharge rate among the unskilled three times as high. These rates are shown in Table 3:

TABLE 3.—COMPARISON OF SEPARATION RATES OF SKILLED AND UNSKILLED EMPLOYEES IN 22 INDUSTRIAL ESTABLISHMENTS DURING ONE YEAR (1913, 1914, OR 1915).[1]

Separation.	Separations during year.					
	Number of workers.		Rate per full-year worker.[2]		Percentage distribution.	
	Skilled.	Unskilled.	Skilled.	Unskilled.	Skilled.	Unskilled.
Quits	12,451	16,093	0.51	1.03	76	72
Discharges	2,432	4,171	.09	.27	15	19
Lay-offs	1,601	1,987	.06	.12	10	9
Total	16,484	22,251	.66	1.41	100	100

[1] Administration, Vol. 2, No. 5, November, 1921, p. 660.
[2] Based on 74,199,000 hours for skilled labor and 46,980,000 hours for unskilled labor put in during year in the 22 establishments. A full-year worker is regarded as equivalent to 3,000 hours.

There are twice as many separations among the unskilled as among the skilled, per hundred workers employed, and there is no reason to believe that after separation the unskilled are able to secure employment more readily than the skilled. The skilled can often fall back on unskilled labor if driven to it, but the unskilled are not able to perform skilled labor. Moreover, union workers, when out of work, have an advantage in having the help of the union in finding another job. The large proportion of the unskilled among persons applying for positions at public employment offices also indicates that the unemployed are more frequently those who are unskilled. In Connecticut, for example, of 27,673 males for whom the State free employment office secured positions during the 12 months ending June 30, 1920, 9,630 were classed as "laborers" and 9,074 others as "day workers"; of 19,759 women for whom positions were secured, 12,461 were classed as "day workers." The rest represented a large number of semiskilled or skilled trades; that is, about two-thirds of those for whom positions were secured were unskilled.[7] A high percentage of unskilled workers is similarly found among applicants for employment in other States.

In view of this and other evidence, the conclusion is inevitable that, taken as a whole, employment is more certain and more regular among the skilled, and that unemployment is more frequent and of longer duration among the unskilled. So far as the members of unions in Massachusetts are skilled—and inspection of the trades represented shows that for the most part they are skilled—to that extent are the unemployment percentages of union labor likely to be somewhat lower than labor as a whole.

The percentage of union and that of nonunion unemployment in three leading industries of Massachusetts during the present depression appear to be about the same, as shown by figures gathered by the State at the close of 1920. A special survey showing the reduction in general employment in textiles, boots and shoes, and metals and machinery, December 18, 1920, below maximum week of 1920, showed percentages closely approximating those of union unemployment in the same industries at the close of the quarter ending December 31, 1920.[8]

NEW YORK.

In the State of New York the members of unions reporting as to idleness increased from about 100,000 in 1904 to about 200,000 in 1916, there being in 1914 about 140,000 represented. This is a large enough number to be typical of unemployment in union industry in this State as a whole, particularly since the localities and the unions were selected with care in order to be typical of the approximately 550,000 union members throughout the State. It is also believed to be fairly typical of unemployment in industry as a whole in this State. This series of unemployment reports was discontinued in the middle of 1916.[a]

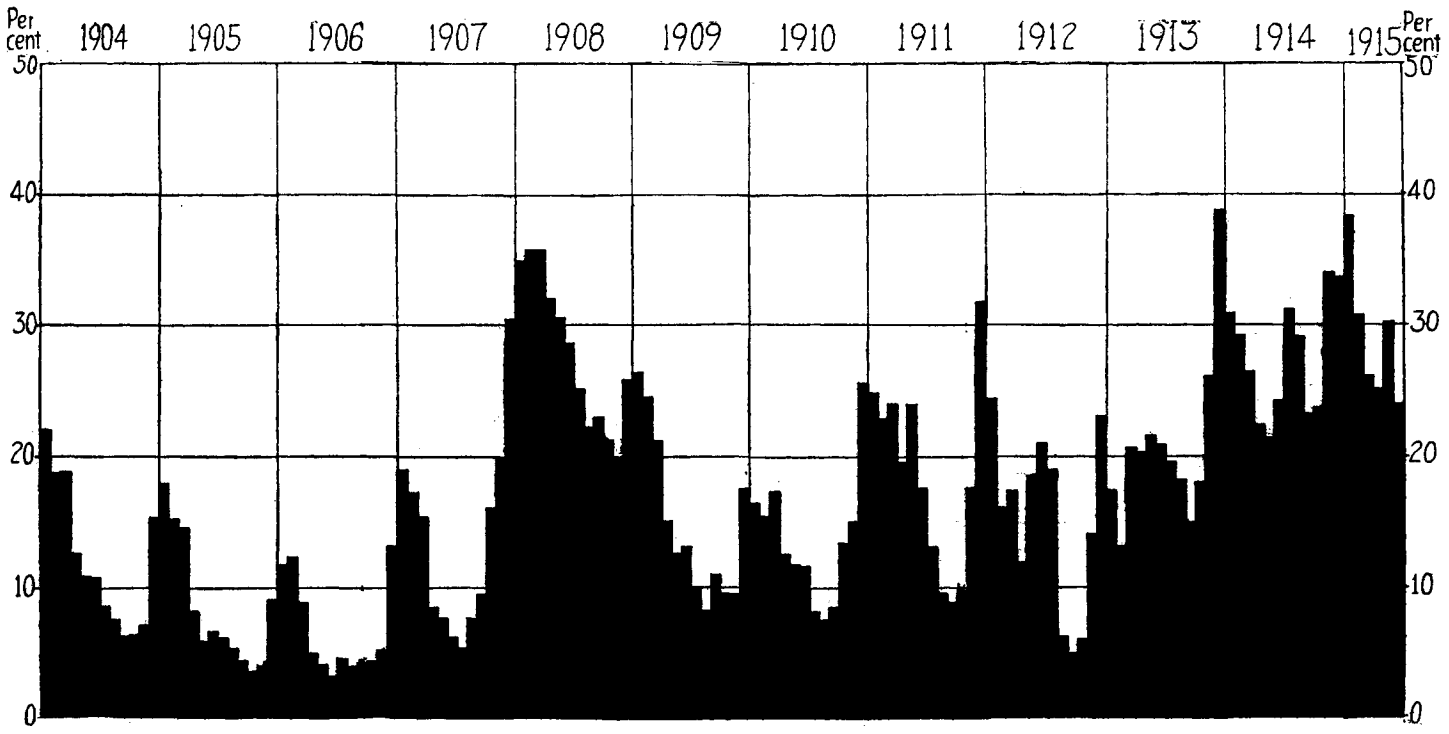
Chart 5 and Table 4 show the fluctuations in union unemployment in New York due to lack of work (exclusive of sickness and strikes);

[7] Report of Connecticut Bureau of Labor Statistics, Free Employment Bureau, Connecticut, 1919-20, pp. 33-34.

[8] The figures are to be found in a special report of the State department of labor and statistics to the governor (see Report of the President's Conference on Unemployment, p. 46).

[a] See Appendix, Table 3 (pp. 48, 49).

CHART 5.—FLUCTUATIONS IN UNEMPLOYMENT AMONG WAGE EARNERS IN NEW YORK STATE DUE TO LACK OF WORK, BY MONTHS, 1904 TO 1915.



incidentally they illustrate both seasonal unemployment and that due to depressions, the years 1907–8 and 1914–15 showing unusually large proportions of unemployment.

TABLE 4.—PER CENT OF IDLENESS IN REPRESENTATIVE UNIONS IN NEW YORK, DUE TO LACK OF WORK, AT END OF EACH MONTH, 1904 TO 1915.[1]

Year.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Mean
1904	22.0	18.8	18.9	12.7	10.9	10.8	8.6	7.7	6.3	6.4	7.1	15.4	12.1
1905	18.0	15.3	14.6	8.2	5.9	6.7	6.3	5.4	4.4	3.6	4.0	9.2	8.5
1906	11.8	12.4	8.9	5.0	4.1	3.2	4.7	4.0	4.3	4.5	5.3	13.3	6.8
1907	19.0	17.4	15.5	8.5	7.7	6.2	5.4	7.7	9.6	16.1	20.0	30.5	13.6
1908	35.1	35.9	35.9	32.2	30.6	28.6	25.2	22.2	23.0	21.3	20.0	25.8	28.0
1909	26.4	24.6	21.2	15.1	12.7	13.1	10.0	8.2	11.0	9.6	9.5	17.7	14.9
1910	16.5	15.5	17.4	12.6	11.8	11.7	8.1	7.5	8.4	13.4	15.0	25.6	13.6
1911	24.9	22.9	24.1	19.6	24.0	17.7	13.1	9.5	8.9	9.8	17.6	31.9	18.7
1912	24.4	16.1	17.4	11.9	18.5	21.0	19.0	6.3	4.9	6.0	14.1	23.1	15.2
1913	17.5	13.2	20.7	20.4	21.7	20.9	19.7	18.2	15.0	18.1	26.1	38.8	20.9
1914	31.0	29.3	26.5	22.4	21.4	24.3	31.4	29.1	23.2	23.7	34.1	33.8	27.5
1915	38.4	30.8	26.1	25.2	30.3	24.0	.....	.....	.....	.....	.....	.....	.....

[1] New York Department of Labor Bulletin No. 69, March, 1915, p. 6; Bulletin No. 73, August, 1915, p. 2.

While the average percentage of union labor unemployment in New York from lack of work is considerably higher than that in Massachusetts, being 16.3 in the years 1904–1915 as against 8.8 in the years 1908–1921, there is reason to believe that this difference is due partly to the more conservative and stable character of the industries in New England, and partly to the high unemployment in the clothing and building trades, which in New York State employ so large a proportion of all the industrial wage earners as well as of the organized wage earners. In 1914, 17.9 per cent of all the wage earners employed in manufacturing in that State were employed in the manufacture of men's and women's clothing, 8.6 per cent in the textile industry, and only 2.6 per cent in the boot and shoe industry; in Massachusetts, 32.3 per cent of all the wage earners in the State were employed in textile manufacturing, and 14 per cent in the boot and shoe industry. In the manufacture of men's clothing, only 5,760 wage earners were employed in Massachusetts in 1914 as against 64,927 in New York; in the manufacture of women's clothing in the same year, 6,076 were employed in Massachusetts as compared with 108,393 in New York.[9] In certain other industries the difference in unemployment in the two States may be due to the difference in the years covered. The opinion has also been expressed that the greater care exercised by secretaries of unions in Massachusetts in reporting the number of their unemployed has tended to keep the percentage of that State low.

The process of reasoning followed by those who accept the data on unemployment of organized wage earners in Massachusetts and New York as typical of unemployment as a whole in these States and in other large industrial States is as follows:

(*a*) The unemployment of union wage earners represents roughly industrial unemployment as a whole in each State, since union workers constitute in these States so considerable a proportion of the total workers, but the exact percentage is possibly too low.

[9] U. S. Census of Manufactures, 1914.

(b) These two leading industrial States, one the foremost and the other the fourth in point of numbers employed, and possessing widely diversified industries, are probably typical of other large industrial States. Examination of the industries involved in these States does not reveal any reason for believing that unemployment will differ greatly in industries not represented in these States.[10]

FLUCTUATIONS IN NUMBER OF EMPLOYEES ON PAY ROLL.

The method of measuring unemployment by comparing employment levels from time to time has usually taken the form of a monthly average of persons on the pay rolls of representative factories, expressed in the form of an index number, the fluctuations in which from month to month indicate the relative number of persons employed at different seasons. The numbers of persons reported as employed by a number of factories are added and the total compared with that for the same factories for the previous month. Records which make possible such an index of employment have been kept by three States and by the United States Bureau of Labor Statistics.

NEW YORK.

The New York State Department of Labor in June, 1914, began the collection of data as to the number of employees on the pay rolls of representative factories. From 1,400 to 1,600 factories and from 450,000 to about 600,000 wage earners, or approximately a third of the industrial employees of the State, are represented in this series. These factories were carefully selected so as to be typical of manufacturing establishments of the entire State. An index number of employment and of wages is published by the State each month for all industries as a whole and for a considerable number of separate industries, using the figures for June, 1914, as the base, or 100 per cent.[a]

WISCONSIN.

The State of Wisconsin uses a similar index, the figures going back to the early part of 1915. Quarterly index numbers from 1915 to July, 1920, were computed from data collected in connection with the workmen's compensation act; monthly figures have been published since that date by the State industrial commission, covering about 200 establishments which contain about a third of the industrial wage earners of the State.[b] The employment curve parallels closely that of New York.

MASSACHUSETTS.

Massachusetts takes an annual census of manufactures at the end of each year, which shows the number of wage earners employed each month by the industries of the State. These figures began with 1878 and extend to the present,[11] thus covering over 30 years and permitting the charting of an employment curve of significance. The number of employees ranges from about 400,000 in 1900 to over 750,000 at the peak in 1920, dropping to about 550,000 at the close of 1920.

---

[10] See discussion of the iron and steel industry on p. 21.
[a] See Appendix, Table 4 (p. 49).
[b] See Appendix, Table 5 (p. 49).
[11] See Appendix, Table 1 (p. 47).

INDEX NUMBERS OF UNITED STATES BUREAU OF LABOR STATISTICS.

The United States Bureau of Labor Statistics publishes each month, in the Monthly Labor Review, the number of persons on the pay rolls of representative factories in a considerable number of separate industries throughout the United States. The series began with November, 1915, and represented in 1918 some 1,400 establishments, with 600,000 to 800,000 employees, in 13 industries. The number of establishments reporting for February, 1922, numbered about 725, in 13 industries and 31 States. The number of establishments varies from month to month because some concerns fail to report; hence the number of persons employed in identical establishments are comparable as between any two consecutive months, but not for all months. The curve resulting from charting the chain relatives of this series, while not entirely satisfactory, since exactly the same factories are not represented for all months, corresponds closely to the employment curves of New York, Massachusetts, and Wisconsin, and indicates that similar employment conditions exist in these States and in the entire country, as represented by the industrial concerns covered by the Bureau of Labor Statistics.

Chart 6 shows the fluctuations in employment based on index numbers of these three States and the Bureau of Labor Statistics. All four indexes are based on June, 1914, as 100, except that for Wisconsin, where a substantially similar result was secured by accepting November, 1915, as 105. While the index of the Bureau of Labor Statistics as here presented starts with June, 1914, as 100, the curve from June, 1914, to November, 1915, represents an average of the New York and Massachusetts figures, which were regarded by the Bureau of Labor Statistics as fairly typical of the country as a whole for this period.[12] While the curves cover the war period, and therefore the fluctuations do not represent the usual peace-time variations in employment, nevertheless, they show clearly the peaks of 1917, 1918, and the post-war peak early in 1920; they also indicate a close relative similarity of the different indexes. The severity of the present depression, as compared with that of 1914–15, is shown by the extent of the drop in 1921 below the line of normal increase.

Table 5 gives the four series of index numbers, all on the basis of June, 1914, as 100. [13]

---

[12] See "Trend of employment in the manufacturing industries in the Unites States, June, 1914, to December, 1921," by Ethelbert Stewart, U. S. Commissioner of Labor Statistics, in Monthly Labor Review, March, 1922, p. 1.

[13] See Monthly Labor Review, March, 1922, pp. 3 and 4, which contains the following explanatory matter:

"The Massachusetts figures include all manufacturing establishments in that State. The figures for New York cover a very wide range of establishments, and those for Wisconsin a somewhat smaller but still quite comprehensive number. The establishments covered by the United States Bureau of Labor Statistics index are for the most part the older and more settled establishments in the various industries represented. Since the bureau has gone upon the theory that its figures must be for identical establishments over a long period of time its index has not responded quickly to sudden changes in industry. To take an example: During the war period there were speculative and even spectacular operations in silk, factories employing considerable numbers of people springing up throughout the East in large numbers. These abnormally swelled the number of employees engaged in the manufacture of silk, but this increase was only partially indicated in the Bureau of Labor Statistics index because its reports were from the old-established plants that responded slowly and in no spectacular way to the boom in silk. Similarly when the mushroom establishments collapsed and threw their thousands of workers out of employment, this was only mildly reflected in the bureau's index number because the old-established concerns had not been violently influenced by either the boom or the collapse. Assuming that there is a line of natural progress of employment in the manufacturing industries the Bureau of Labor Statistics curve of employment would more closely approximate that line than would yearly census figures during the war period.

"In fact all of these index numbers fall far short of showing the increase in the number of persons employed in the manufacturing industries in the United States as a whole between 1914 and 1919, as according to the census the increase was 29.3 per cent. This would indicate that the index of the United States Bureau of Labor Statistics and probably that of New York ought to have reached in the fall of 1919 a point as high as Wisconsin reached in early 1920, and that none of the indexes really cover the volume of workers

TABLE 5.—INDEX NUMBERS OF PERSONS EMPLOYED, BASED ON STATISTICS OF NEW YORK, MASSACHUSETTS, WISCONSIN, AND U. S. BUREAU OF LABOR STATISTICS, JUNE, 1914, TO DECEMBER, 1921.

[June, 1914=100.]

Year and month.	New York.	Massachusetts.	U. S. Bureau of Labor Statistics.[1]	Wisconsin (after Nov. 1915).
1914.				
June	100	100	100	.....
July	97	97	97	.....
August	92	96	94	.....
September	96	96	96	.....
October	95	97	96	.....
November	93	96	95	.....
December	92	95	94	.....
1915.				
January	92	93	93	.....
February	94	94	94	.....
March	94	95	95	.....
April	95	95	95	.....
May	97	95	96	.....
June	98	95	97	.....
July	97	95	96	.....
August	96	97	97	.....
September	101	99	100	.....
October	102	102	102	.....
November	106	104	105	105
December	108	105	107	.....
1916.				
January	108	108	106	.....
February	111	110	108	112
March	111	112	110	.....
April	115	112	109	.....
May	113	111	110	113
June	113	110	110	.....
July	112	110	110	.....
August	113	110	110	110
September	117	111	110	.....
October	117	113	112	.....
November	120	115	113	117
December	122	117	114	.....
1917.				
January	121	117	116	.....
February	121	118	116	122
March	123	119	116	.....
April	121	116	114	.....
May	120	114	114	118
June	119	114	114	.....
July	118	112	114	.....
August	116	112	112	117
September	118	114	110	.....
October	120	116	112	.....
November	121	118	115	121
December	122	119	116	.....
1918.				
January	121	117	115	.....
February	123	118	114	124
March	124	120	115	.....
April	123	119	114	.....
May	123	119	112	122
June	123	119	112	.....
July	125	118	114	.....
August	122	117	113	124
September	122	116	113	.....
October	117	114	109	.....
November	120	117	111	123
December	119	115	112	.....
1919.				
January	113	114	109	.....
February	112	111	102	122
March	111	111	103	.....
April	111	111	103	.....
May	110	113	105	115
June	110	115	107	.....
July	113	117	109	.....
August	115	119	108	118
September	116	120	109	.....
October	115	121	105	.....
November	118	123	108	125
December	122	125	111	.....
1920.				
January	123	124	113	.....
February	122	122	112	130
March	125	123	114	.....
April	124	122	114	.....
May	122	121	115	125
June	121	118	115	.....
July	121	114	107	127
August	118	112	107	125
September	117	109	104	122
October	115	107	100	116
November	108	100	95	108
December	100	91	89	100
1921.				
January	93	91	79	88
February	94	92	85	90
March	95	91	86	87
April	94	90	85	82
May	92	92	86	81
June	90	92	87	79
July	88	93	86	79
August	88	92	88	81
September	92	93	89	83
October	94	93	91	83
November	94	93	92	83
December	94	94	92	83

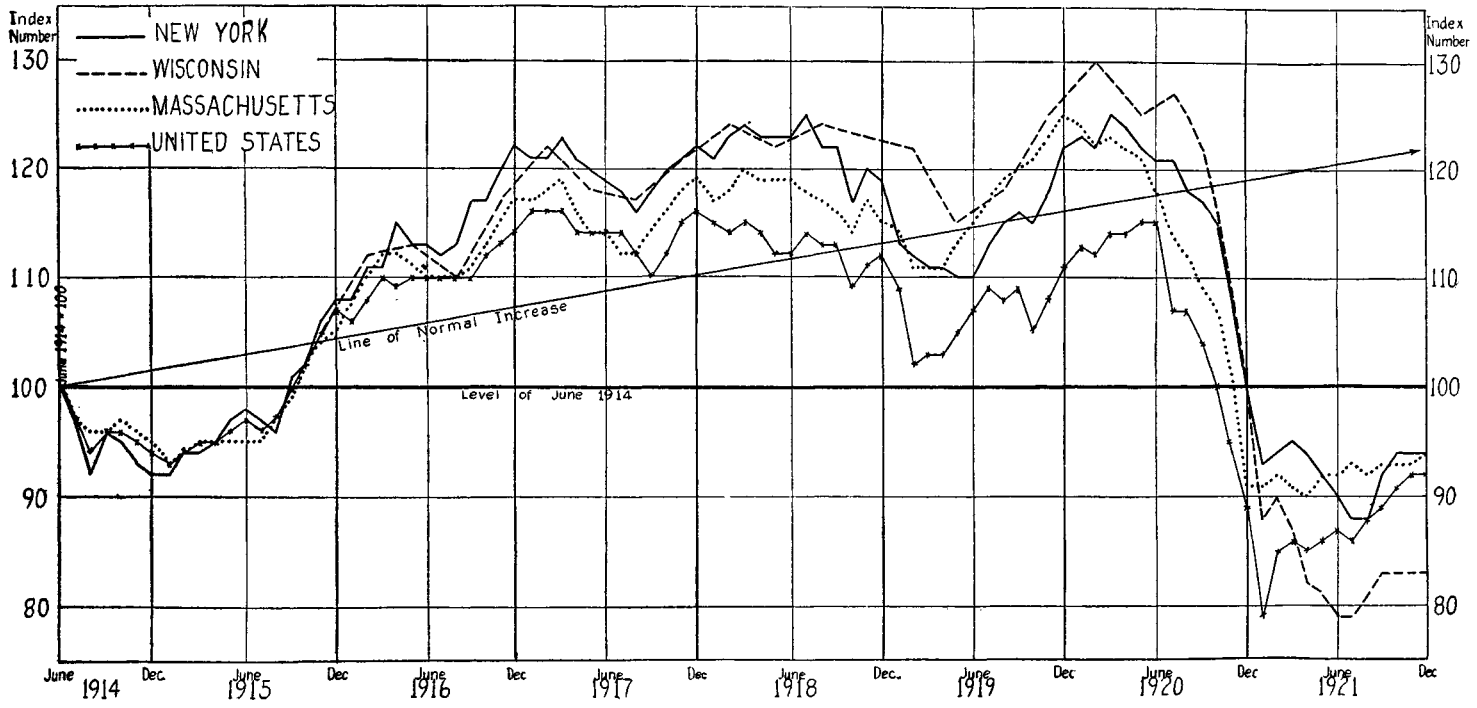
[1] Weighted by number employed in each industry in 1914. Following are the weightings used (thousands omitted).

Iron and steel	278	Men's clothing	174
Automobiles	127	Leather	56
Car building	394	Boots and shoes	199
Cotton manufacturing	379	Paper	88
Cotton finishing	48	Cigars	153
Hosiery and underwear	151		
Woolen	159		2,314
Silk	108		

during the war period, all being too low. [They are probably all the more satisfactory on that account since 1920.]

"In determining a line of natural progress the census statistics for wage earners in manufacturing establishments in the United States for the census years 1899 (4,712,763), 1904 (5,468,383), 1909 (6,615,046), and 1914 (7,036,337), or for a period of 15 years prior to the beginning of the World War have been used. From these census figures it is found that the average geometric rate of growth in employment was 2.7 per cent per year in the 15 years covered. This for a spread of seven years means an increase of 20.6 per cent in the number of wage earners."

CHART 6.—FLUCTUATIONS IN EMPLOYMENT IN NEW YORK, WISCONSIN, MASSACHUSETTS, AND THE UNITED STATES, JUNE, 1914, TO DECEMBER, 1921.



OTHER RECORDS OF FACTORY EMPLOYMENT.

The State of New Jersey kept a record of the number of wage earners employed in its industries from 1898 [14] to 1918, inclusive. These figures cover almost all of its industrial wage earners and afford an excellent general index of employment in that State. The number of employees covered ranges from about 150,000 in 1898 to about 500,000 in 1918. Figures for 1919 were collected by the United States Census of Manufactures; no figures for 1920 were collected, nor are those for 1921 yet available.[15]

The State of Ohio kept a similar record of factory employees for one year, 1915, the figures of which reflect the rapid war-time increase of industrial wage earners from month to month during that year.

Arkansas and Illinois have recently commenced to keep such a record, which in time will be of value in indicating employment conditions in those States.

EMPLOYMENT DATA OF UNITED STATES EMPLOYMENT SERVICE.

The United States Employment Service made two special investigations—one in January, 1921, and the other in September, 1921—securing directly from certain States and cities figures showing, in the first investigation, the reduction in number of persons reported as employed in January, 1921, and, in the second, in September, 1921, as compared with the number employed in January, 1920.

The accuracy of the estimate that 3,473,000 fewer persons were employed in industry in January, 1921, than in January, 1920, arrived at in this manner, depends upon the extent to which the data were collected through trained and responsible persons and on how far miscellaneous guesses were incorporated with estimates of properly organized statistical bureaus. From such evidence as was and is available it appears that this report presents a reasonably close figure for the unemployment existing at that time in some of the more important States. Inherently also it is somewhat more consistent than the estimate of September, 1921.

These special estimates of the reduction of employment between January, 1920, and January or September, 1921, are not to be confused with the monthly figures of employment, together with an explanatory curve, published since then by the United States Employment Service in the Industrial Employment Survey Bulletin. These monthly figures are intended to indicate currently the trend of industrial employment. They are based on pay-roll data secured each month from about 1,400 concerns, each of which usually employs 500 or more persons, representing an aggregate of 1,500,000 wage earners located in 65 industrial centers. They cover manufacturing concerns in 14 groups of industries, following the census classification. The first issue of this series compared the total number of workers on pay rolls in such plants in February, 1921, with those in January, 1921, and similar comparisons have been presented for each month since. There is also presented in the same bulletin an estimate

[14] A small number of concerns were covered by reports in 1895, 1896, and 1897.
[15] See Chart 8 (p. 36) for curve showing New Jersey employment figures up to and including 1915; also Appendix, Table 2 (p. 47).

by cities, of increases or decreases in factory employment since the preceding month.

The method is somewhat similar to that employed by the State industrial commissions of Wisconsin and New York, and the United States Bureau of Labor Statistics, but the figures take in a wider geographical area than those of any single State. The data, however, are from the larger concerns and are not necessarily representative in all cases of the smaller establishments. The series is too recent to throw much light on the average amount of unemployment over a series of years.

DIFFERENCE BETWEEN MONTHS OF MAXIMUM AND MINIMUM EMPLOYMENT: UNITED STATES CENSUS OF MANUFACTURES, 1904, 1909, AND 1914.

The data of the United States Census of Manufactures for 1904, 1909, and 1914, show for industry as a whole and for each industry separately the average number of persons employed on the 15th day of each month or the nearest representative day, during the census year. While figures are missing for the four years intervening between censuses, the available figures indicate the percentage of fluctuation between high and low employment levels during the year for which data are given.

For all industries taken together the per cent of difference between the number employed in the highest and in the lowest month in 1904 is 7.3, in 1909, 11.4, and in 1914, 8.3, the average being 9.[16] The 1919 figures are not used, though available, on account of not being typical of normal manufacturing years.

This method of measuring unemployment (by the difference in the total number of employed on factory pay rolls during the months of greatest and of least employment), as presented in such figures as these published by the United States Census of Manufactures or the employment index of the Department of Labor of the State of New York, is open to an important objection, namely, that when all persons in industry are taken as a whole, the range between the maximum and the minimum number employed is much less than if each industry is considered as a separate unit and the separate ranges are averaged. If this is done for 27 important industries employing over 5,000 persons as shown by the Census of Manufactures of 1914, the aggregate covering two-thirds of all the wage earners in manufacturing in that year, the per cent of difference becomes about 15 per cent. When localities also are considered, as factors limiting the free passage of labor from one point to another, as well as the limitations of particular trades or industries, already referred to, the per cent of difference between the number employed in the maximum and in the minimum month mounts still higher, possibly to 20 or 25 per cent. If this difference is 20 per cent, that is, in the lowest month only 80 per cent as many are employed as in the highest month, it is equivalent roughly to 90 per cent of steady employment, or 10 per cent constantly unemployed. This figure should not be given too great weight, however, except as it supports other figures of more positive import, such as those found in Table 6 (p. 22).

[16] Abstract of the Census of Manufactures, 1914, p. 437.

UNITED STATES CENSUS OF OCCUPATIONS, 1900.

In connection with the United States Census of Occupations of 1900, each person gainfully employed was asked how many months during the preceding year (1899) he had been unemployed. The form of the question seems necessarily to have affected the replies, and the resulting percentage of unemployment can not be accepted as of equal weight with that based on the series of years reported in Massachusetts and in New York.

COMPARATIVE VALUE OF METHODS.

In a general way, it may be said that the method of measuring unemployment by means of the reduction in employment between high and low points, that is, from the top down, has the advantage of accurate (pay-roll) records of persons employed, but it fails to cover a certain percentage of the constantly unemployed. By this is meant not exclusively the unemployable, but also those persons (of whom there is always a certain per cent) who at any given time are changing jobs and hence on no pay roll; likewise those who at that time are sick or on strike, or otherwise out of a job. These are not always the same individuals, but the total average percentage appears to remain fairly constant.

There is also another objection, as already suggested, namely, that the total unemployment percentage thus obtained for all industries as a whole does not represent the true unemployment situation, since it assumes one large labor reservoir instead of a series of compartments. To show unemployment more correctly the percentages of unemployment of particular industries in the area under consideration should be averaged, and the separate localities in which the industry is situated should also be taken into account in order to obtain a more correct estimate.

On the other hand, the method of estimating unemployment by measuring the unemployed among organized workers—from the bottom up, as it were—depends for its value upon the accuracy and good judgment of the union secretary reporting. He is in a position to know conditions within his own union, provided it is not of too large a size. He may, however, be inclined to exaggerate the existing conditions. Several statisticians closely familiar with these figures believe that the union figures are probably close approximations to fact, but that the union secretary is likely to report fewer persons unemployed during good times, and more unemployed during seasons of depressions than there actually are.

It is not quite correct to use the term "from the bottom up," since these union unemployment reports do not give any adequate measure of the unemployment which exists among a great mass of unskilled and unorganized workers. Consideration of this fact would lead to the belief that the percentage of general unemployment is somewhat greater than that of union unemployment.

SPECIAL INVESTIGATIONS OF EXTENT OF UNEMPLOYMENT.

The figures collected by Massachusetts and New York, extending in each case over 12 years, and comprising the most comprehensive of all the data at hand, are supplemented by three special investigations which throw some additional light on the problem of what percentage of industrial wage earners are normally out of work.

MASSACHUSETTS CENSUS OF UNEMPLOYMENT, 1885.

The earliest of these is a special census of unemployment taken by the State of Massachusetts in 1885,[18] covering not only the manufacturing industries but all persons gainfully employed in that State. Although it relates to only a single year, it covers over 800,000 persons.

By this special census it was found that 30 per cent of all the persons canvassed were out of work an average of 4 months during that year, which is equivalent to 10 per cent idle during the entire 12 months. This percentage exceeds by a little over 1 per cent the average unemployment of organized wage earners (8.8 per cent) over a series of 13 years in this State, indicating that the unemployment percentage of 1885 is probably a little higher than the average for other years. On the other hand, as already suggested, 8.8 per cent is probably somewhat too low a percentage for the unorganized and unskilled labor of the State. Also, since the records show that unemployment in the State of Massachusetts, an old and settled Commonwealth, is lower than that in other less stable industrial States, particularly New York, it is entirely possible that it may be lower than the average ndustrial unemployment of the country as a whole.

COST OF LIVING SURVEY, 1901, BY UNITED STATES COMMISSIONER OF LABOR.

The survey made by the United States Commissioner of Labor in 1901,[19] an average business year, of 24,402 families widely distributed throughout the country, disclosed nearly the same number of days of unemployment for each head of a family in a normal year (1901) for the United States (4.7 weeks, or 28 days) as were lost in Massachusetts in 1885, a poor year (30 days). Some 12,000 heads of families, or about half the total number, were out of work an average of 9.43 weeks each, which is equivalent to an average of 4.7 weeks lost by the entire number. This indicates that the wage earner is idle not far from 10 per cent of the number of working days in the year.

UNITED STATES BUREAU OF LABOR STATISTICS' INVESTIGATION OF EMPLOYMENT IN THE IRON AND STEEL INDUSTRY, 1910.

A special investigation of employment conditions in the iron and steel industry, one conspicuous industry not well represented in either the Massachusetts or New York figures, was made in 1910, a prosperous business year, by the Bureau of Labor Statistics in response to a resolution of the United States Senate.[20] This investigation, which included nearly 100,000 employees, showed that 7 weeks was the average time lost by these steel workers from all causes. Sickness, which was the cause of a loss of 1½ weeks per worker per year, and accidents, causing the loss of 4 days per worker per year, were included. Excluding these factors leaves about 29 days as the average time lost annually from other causes than sickness and accidents, mainly lack of work.

[18] Eighteenth Annual Report of the Bureau of Statistics of Labor of Massachusetts, 1887.
[19] Eighteenth Annual Report of the Commissioner of Labor, 1903.
[20] Conditions of Employment in the Iron and Steel Industry in the United States, Vol. III. S. Doc. No. 110, 62d Cong., 1st Sess., 1911.

SUMMARY OF UNEMPLOYMENT RECORDS AND INVESTIGATIONS.

Table 6 summarizes the several investigations as regards the number of days of unemployment of industrial wage earners due to lack of work or materials, excluding disability and labor disputes. As has been pointed out, the figure for organized wage earners in Massachusetts is probably too low to be representative of all wage earners, since unskilled and unorganized workers are more frequently unemployed; also, the percentage of unemployment in a relatively stable State such as Massachusetts is probably lower than that in States of a less settled labor composition such as New York, and therefore in the country as a whole. For a similar reason the average for New York is believed to be somewhat higher than for the rest of the country.

TABLE 6.—SUMMARY TABLE OF AVERAGE ANNUAL UNEMPLOYMENT.

Records or special survey of—	Year.	Number of persons included.	Class of persons.	Average time unemployed during year for all employees covered.	
				Per cent.	Working days.
Massachusetts Department of Labor and Industries.[1]	1908 to 1921	100,000 to [2] 296,917	Members of labor organizations.	8.8	26
United States Commissioner of Labor[3]	1901	24,402	Heads of families in 33 States.	9.3	28
United States Bureau of Labor Statistics [4]	1910	90,757	Workers in steel industry.	9.6	[5] 29
New Hampshire Bureau of Labor [6]	1915	6,000	Members of labor organizations.	9.6	29
Massachusetts Bureau of Statistics of Labor[7]	1885	816,470	All persons gainfully occupied.	10.0	30
New York Bureau of Labor Statistics [8]	1904 to 1916	96,075 to 192,613	Members of labor organizations.	16.3	49
Average	.....	Over 1,250,000	.....	About 10	About 30

[1] Massachusetts annual reports on the statistics of labor, 1908–1919; quarterly reports on employment, Massachusetts, 1919; Massachusetts Industrial Review, 1920 and 1921.
[2] Jan. 1, 1921.
[3] Eighteenth annual report of the U. S. Commissioner of Labor, 1903, p. 43.
[4] Report on Conditions of Employment in the Iron and Steel Industry in the United States, Doc. No. 110, 62d Cong., 1st sess., Vol. III, pp. 21, 214.
[5] Seven weeks, from which 4 days of idleness due to accidents and 1½ weeks from sickness have been subtracted.
[6] One-half year, 1915: Eleventh biennial report of New Hampshire Bureau of Labor, 1915–16, Vol. 13, p. 26.
[7] Eighteenth annual report of the Massachusetts Bureau of Statistics of Labor, Boston, 1887, p. 294.
[8] New York State Department of Labor: Reports of the Bureau of Labor, 1897–1912; Idleness of Organized Wage Earners in 1914, Special Bulletin 69; Course of Employment in New York from 1904 to 1916, Special Bulletin 85.

While the average of these various percentages of unemployment can not be arrived at by a purely mathematical process, all the figures appear to center about a common point and to indicate that the average wage earner loses through involuntary unemployment a little over 30 days per year or about 10 per cent of his possible maximum working time. To express it in terms of continuous unemployment, it means that if these figures hold true for the United States as a whole an average of 10 per cent of all industrial wage earners are out of work all the time. Of 15 or 16 million industrial wage earners, 1½ million are thus believed to be constantly out of work, averaging both good and bad years, or more than a million and a quarter idle

in the manufacturing and mechanical industries alone.[21] The figure falls below this average in years of unusual prosperity, but in seasons of poor business rises much above it. For years of normal business a million unemployed is thus seen to be a low figure, particularly if wholesale and retail trade and the clerical occupations be included.[22]

As to the theory that this average does not make proper allowance for incidental employment secured occasionally in lines of industrial activity other than their regular occupations, and that therefore these figures do not represent actual unemployment, there is a lack of conclusive data on this point. Such evidence as there is, however, indicates that comparatively few persons find other employment. In one of the most comprehensive investigations ever made, that of the Massachusetts special census of unemployment, it was found that of 241,589 persons reported as unemployed at their principal occupation during some part of the year represented by the 12 months preceding May 1, 1885, only 10,758, or less than one-twentieth of the whole number were reported to have found work during the year at some other occupation.[23]

Other evidence from employment managers and observers of labor conditions in large centers is to the effect that the average employee does not easily change his trade, and it is only the wage earner of exceptional initiative who goes out and gets a job in a different line. Limitations of training and temperament, as well as general inertia, tend to prevent employees from finding employment in other than their regular trades. This does not apply, it is true, to common labor, which in some respects is of a very fluid character, but which has equally great limitations of skill and adaptation. In times of unemployment common labor is usually the first to be affected and is the hardest hit.

PARTIAL UNEMPLOYMENT—CHARACTER AND EXTENT.

The loss by the average wage earner of 30 days per year due to total unemployment does not include the time lost from partial unemployment, that is, unemployment while "on the job." The records of unemployment take no account of the hours or half days during which the wage earner is temporarily idle, waiting for materials to arrive, for repairs which are under way to be finished, or until some semifinished part required is completed by another department of the same factory. He is not usually counted as unemployed unless he is definitely off the pay roll and out of a job. This partial unemployment occurs in small units, but in the aggregate is responsible for a large volume of lost time and reduced earnings. It is reduced earnings, after all, which measure the loss of comforts of the wage earner and the reduced business of merchant and manufacturer.

This partial unemployment or underemployment takes two forms, which for convenience may be distinguished as (1) part-time employment and (2) time lost on account of waiting and other causes.

---

[21] See estimate that between 1902 and 1917 there was never a period when less than a million wage earners were out of work, in Fluctuations in Unemployment in Cities of the United States, 1902–1917, by Hornell Hart, Cincinnati, 1919.

[22] The conclusion of the committee on the elimination of waste in industry of the Federated American Engineering Societies is as follows:

"But in the best years, even the phenomenal years of 1917 and 1918, at the climax of war-time industrial activities, when plants were working to capacity and when unemployment reached its lowest point in 20 years, there was a margin of unemployment amounting to more than a million men."—Report on Waste in Industry, 1921, p. 15.

[23] Eighteenth annual report of the Massachusetts Bureau of Statistics of Labor, Boston, 1887, p. 289.

PART-TIME EMPLOYMENT.

During periods of depression or seasons of poor business otherwise, the manufacturing plant or some division of it may be operated only a few days per week or a few hours per day. Such a condition existed in many industries during a great part of 1921; the most energetic efforts on the part of manufacturers were required to keep their employees engaged and the wheels moving at all. This is rightly chargeable as a form of depressional unemployment and has been very high during many months of the past year and a half.

NEW HAMPSHIRE.

A survey of employment in the manufacturing industries made by the State of New Hampshire in December, 1920,[24] shows that of 91,267 employees normally or usually employed on full time in 884 establishments, 34,824, or about 37 per cent, were idle, mainly for lack of orders, and 18,374, or about 20 per cent, were working part time. A second survey, June 1, 1921, showed that of 89,701 employees normally employed in 645 establishments, 19,317, or 22 per cent, were idle, mainly for lack of orders, and 16,084, or 18 per cent, were working part time. A third survey, made January 1, 1922, showed that in the 615 establishments reporting, 13,164, or 15 per cent of the 87,584 employees normally employed, were idle, mainly from lack of orders, and 11,581, or 13 per cent of the total number, were working part time.

The degree of unemployment involved in such part-time work is not stated and is difficult to measure in the absence of records showing the number of days the plants were operated. Part-time employment occurs most frequently during business depressions and also in many industries at their slack seasons.

TIME LOST ON ACCOUNT OF WAITING AND OTHER CAUSES.

INDUSTRIAL SURVEY, 1919, BY UNITED STATES BUREAU OF LABOR STATISTICS.

Even during prosperous times employees frequently work less than the number of full-time hours per week, from various causes.[25] The best data on the extent of this form of unemployment are found in an industrial survey made by the Bureau of Labor Statistics in 1918 and 1919 of over 1,900 establishments in 24 industries. Figures taken from actual pay-roll records covering more than 300,000 wage earners show the average number of hours actually worked per week in comparison with the number of hours which constitutes full time in each occupation per week.

These figures, secured for the purpose of throwing light on this very point, are unusually valuable for the reason that they cover such a variety of industries and so large a number of occupations and wage earners. On the other hand, the causes of partial unemployment are not clearly indicated.

The percentage of full time worked by employees in the various trades in the leather industry, for example, is shown in Table 7.

---

[24] See Appendix, Table 6 (pp. 50–52).

[25] This is sometimes called "unemployment within employment." See "A measuring stick for unemployment," by Morris L. Cooke in American Association for Labor Legislation Review, June 1, 1921, p. 170.

TABLE 7.—AVERAGE HOURS WORKED AND AVERAGE EARNINGS MADE IN THE LEATHER INDUSTRY IN 1919, BY SEX AND OCCUPATION OF EMPLOYEES, AND PAY-ROLL PERIOD.[1]

Sex and occupation of employees.	Number of establishments.	Number of employees.	Average hours actually worked—				Full-time hours per week.	Per cent of full time worked.	Average earnings actually made—			
			In weekly pay period.	In biweekly or semi-monthly pay period.	Per week day.	Per week.			In weekly pay period.	In biweekly or semi-monthly pay period.	Per hour.	Per week.
MALES.												
Heavy upper leather.												
Beam hands	15	107	51.5	117.8	8.6	51.6	54.0	96	$27.64	$58.29	$0.532	$27.43
Buffers	10	129	45.5	112.2	8.3	49.8	58.0	86	27.43	58.23	.538	27.04
Finishers	10	201	51.6	135.3	8.6	51.6	54.4	95	27.20	72.29	.584	29.10
Fleshers and unhairers	14	160	46.0	118.7	8.0	48.0	52.9	91	26.49	60.25	.569	26.78
Glazers	11	105	33.4	108.0	6.5	39.0	53.7	73	18.32	47.31	.552	19.43
Laborers, all departments	15	1,439	51.0	117.2	8.7	52.2	55.7	94	24.00	48.82	.451	22.70
Putters-out, hand	7	80	43.6	111.5	7.9	47.4	55.2	86	27.96	54.75	.579	26.61
Putters-out, machine	9	49	46.4	119.2	8.4	50.4	56.2	90	21.30	48.58	.438	21.82
Seasoners	15	294	49.2	108.0	8.2	49.2	54.4	90	24.21	54.45	.502	24.36
Shavers	15	192	47.5	110.1	8.1	48.6	55.3	88	33.34	56.52	.637	30.59
Sorters and measurers	9	105	50.1	115.8	8.4	50.4	50.6	100	23.39	48.58	.458	22.96
Splitters	14	131	48.1	112.6	8.3	49.8	56.3	88	24.56	61.15	.528	26.36
Stakers, tackers and stretchers, hand	14	320	48.9	100.7	8.0	48.0	55.6	86	25.92	52.01	.516	24.86
Stakers, machine	14	150	43.6	111.4	7.6	45.6	54.0	84	24.59	63.55	.570	26.03
Light upper leather.												
Fleshers and unhairers	10	124	45.2	.....	7.6	45.2	49.2	92	25.78	.....	.561	25.78
Glazers	11	289	47.2	.....	7.9	47.2	50.5	93	36.85	.....	.738	36.85
Laborers, all departments	12	766	47.3	.....	7.9	47.3	49.1	96	24.99	.....	.526	24.99
Putters-out, machine	9	110	45.5	.....	7.6	45.5	49.4	92	20.41	.....	.444	20.41
Seasoners	6	59	44.1	.....	7.2	44.1	51.1	86	22.28	.....	.533	22.28
Shavers	10	59	40.4	.....	6.7	40.4	49.4	82	26.35	.....	.648	26.35
Stakers, hand	9	101	39.5	.....	6.6	39.5	50.9	78	26.20	.....	.658	26.20
Stakers, machine	11	189	45.9	.....	7.6	45.9	49.8	92	29.84	.....	.655	29.84
Trimmers	8	75	48.4	.....	8.1	48.4	49.4	98	29.21	.....	.599	29.21
Sole leather.												
Bark grinders	17	54	49.1	102.6	8.0	48.0	53.5	90	20.88	38.04	.403	19.20
Beam hands	23	166	49.4	104.4	8.1	48.6	52.5	93	26.68	51.05	.517	24.91
Fleshers and unhairers	23	123	44.7	99.6	7.6	45.6	52.6	87	26.01	46.48	.523	23.44

[1] Monthly Labor Review, U. S. Bureau of Labor Statistics, May, 1920, pp. 103, 104.

TABLE 7.—AVERAGE HOURS WORKED AND AVERAGE EARNINGS MADE IN THE LEATHER INDUSTRY IN 1919, BY SEX AND OCCUPATION OF EMPLOYEES, AND PAY-ROLL PERIOD—Concluded.

Sex and occupation of employees.	Number of establishments.	Number of employees.	Average hours actually worked— In weekly pay period.	Average hours actually worked— In biweekly or semi-monthly pay period.	Average hours actually worked— Per week day.	Average hours actually worked— Per week.	Full-time hours per week.	Per cent of full time worked.	Average earnings actually made— In weekly pay period.	Average earnings actually made— In biweekly or semi-monthly pay period.	Average earnings actually made— Per hour.	Average earnings actually made— Per week.
MALES—concluded.												
Sole leather—Concluded.												
Laborers, all departments	24	1,986	47.0	101.3	7.9	47.4	52.3	91	24.97	44.96	.482	22.49
Liquor runners	21	50	52.5	127.5	9.2	55.2	53.7	103	25.96	56.71	.480	26.16
Operators, rolling-machine	23	273	49.0	100.7	7.9	47.4	52.3	91	30.84	51.62	.560	26.30
Setters-out	17	84	52.2	116.3	8.8	52.8	53.0	100	25.59	47.21	.456	23.96
Total	51	7,970	47.3	107.6	8.1	48.6	53.0	92	26.03	49.49	.518	24.72
FEMALES.												
Heavy upper leather.												
Glazers	3	64	46.3	98.2	7.6	45.6	59.1	77	17.33	29.93	0.312	14.25
Laborers, all departments	7	167	43.5	99.7	7.5	45.0	57.9	78	12.27	27.06	.270	12.42
Seasoners	6	81	47.6	95.1	7.6	45.6	57.2	80	18.35	31.42	.354	16.21
Light upper leather.												
Glazers	6	114	35.8	.....	6.0	35.8	51.0	70	15.40	.....	.422	15.40
Ironers	6	42	40.5	.....	6.7	40.5	49.1	82	12.58	.....	.314	12.58
Laborers, all departments	10	148	44.6	.....	7.4	44.6	48.6	92	13.47	.....	.300	13.47
Putters-out, machine	4	69	33.4	.....	5.6	33.4	48.9	68	10.54	.....	.313	10.54
Seasoners	7	243	40.2	.....	6.6	40.2	49.5	81	11.99	.....	.291	11.99
Sole leather.												
Laborers, all departments	4	61	46.3	95.1	7.6	45.6	48.0	95	17.22	36.58	.375	17.38
Total	23	989	40.8	98.1	6.9	41.4	52.1	79	13.40	29.17	.318	13.43

Similar detailed data were secured for occupations in 23 other industries. Table 8 presents a summary of the percentages of partial unemployment found in the entire group of industries.

TABLE 8.—AVERAGE PERCENTAGE OF FULL TIME WORKED PER WEEK, BY 306,690 EMPLOYEES IN 1933 ESTABLISHMENTS IN 24 INDUSTRIES, 1919.

Industry.	Number of establishments.	Number of employees.	Full-time hours per week.	Average hours actually worked per week.	Per cent of full time worked.	Per cent of full time lost.
	Male employees.					
Automobiles	32	17,827	50.6	49.2	97.2	2.8
Cars	22	14,685	53.8	48.6	90.3	9.7
Electrical apparatus	38	4,368	50.6	48.0	94.9	5.1
Machinery, tools	29	7,681	53.9	51.6	95.8	4.2
Typewriters	28	8,880	52.6	51.6	98.1	1.9
Foundry	150	15,347	53.8	49.2	91.4	8.6
Iron and steel	[1] 147	34,067	[2] 131.7	[2] 99.9	75.9	24.1
Brick and tile	35	1,803	55.1	46.8	85.0	15.0
Pottery	15	2,142	53.6	42.6	79.5	20.5
Glass	68	11,506	53.7	46.8	87.0	13.0
Chemicals	163	28,283	56.8	50.4	89.0	11.0
Leather	51	7,970	53.0	48.6	92.0	8.0
Rubber	23	14,613	51.1	49.2	96.0	4.0
Furniture	111	10,556	55.2	51.0	92.4	7.6
Lumber	141	18,022	59.1	43.2	73.1	26.9
Millwork	105	5,154	52.7	48.6	92.0	8.0
Paper and pulp	85	6,366	51.4	51.8	100.4	[3] 4
Paper boxes	77	1,802	51.2	49.9	97.0	3.0
Confectionery	101	4,534	54.4	50.4	93.0	7.0
Men's clothing	134	9,327	47.8	44.9	93.9	6.1
Women's clothing	158	3,150	48.5	48.5	100.0	.....
Silk	33	3,442	51.7	48.2	93.2	6.8
Hosiery and underwear	51	1,738	52.6	48.1	91.4	8.6
Overalls	119	365	46.1	42.6	92.0	8.0
Total	1,916	233,628	.....	.....	88.8	11.2
	Female employees.					
Automobiles	21	623	49.3	46.8	94.9	5.1
Electrical apparatus	30	1,618	50.2	46.2	92.0	8.0
Machinery, tools	8	154	51.6	46.2	89.5	10.5
Typewriters	25	3,498	51.6	46.8	90.7	9.3
Foundry	13	83	50.4	42.6	84.5	15.5
Iron and steel	[1] 6	290	[2] 102.2	[2] 72.6	71.0	29.0
Pottery	15	1,115	50.9	40.8	80.2	19.8
Glass	47	1,857	51.9	43.2	83.0	17.0
Chemicals	29	699	52.6	44.4	84.0	16.0
Leather	23	989	52.1	41.4	79.0	21.0
Rubber	22	3,376	51.9	46.8	90.0	10.10
Furniture	60	915	54.9	48.6	88.5	11.5
Millwork	12	225	54.7	48.6	88.8	11.2
Paper and pulp	64	1,964	51.7	48.0	91.9	8.1
Paper boxes	77	4,311	50.0	45.0	90.0	10.0
Confectionery	101	12,152	50.1	43.8	87.0	13.0
Men's clothing	134	9,262	48.0	43.8	91.3	8.7
Women's clothing	157	6,772	48.1	44.0	91.0	9.0
Silk	33	4,277	51.7	47.3	91.5	8.5
Hosiery and underwear	51	12,336	52.1	45.7	87.7	12.3
Overalls	129	6,546	46.0	40.2	87.0	13.0
Total	1,051	73,062	.....	.....	88.7	11.3

[1] Each department (reported) of a plant is counted as an establishment.
[2] In one-half month.
[3] Overtime.

In these 24 industries, we find 233,628 male employees who were idle on an average of 11.2 per cent of the full-time hours per week, and 73,062 female employees who were not working an average of

11.3 per cent of the full-time hours per week; or a total of 306,690 employees who were idle an average of 11.2 per cent of their working time.

	Number.	Hours idle per 100 hours.
Male employees	233,628	11.2
Female employees	73,062	11.3
Total	306,690	11.2

How far these figures apply to industry as a whole depends upon judgment on several distinct points: (1) Is the number of employees covered sufficient to be fairly representative of all manufacturing industry? (2) How typical of industry in general are the industries for which data are given in respect to the months of the year covered? (3) How typical of average industrial conditions is the period for which most of the data are given?

The following considerations regarding the industrial survey data, the most important of the four groups of figures showing time lost on account of waiting and other causes, are submitted:

(1) The number of employees (306,690) is 3.4 per cent of the total number of wage earners employed in manufactures in the United States in 1919 (9,000,000); this is a substantial sample and is regarded as sufficient to be representative if otherwise satisfactory.

(2) The months of the year, February to May, in which the majority of the pay-roll schedules were taken are those in which normally there occurs one of the two peaks which come in the manufacturing year. For industry as a whole, factories are busier during these months than in July and August or December and January. (See Charts 8 and 9, pp. 36 and 38–39, for typical curves of months.) For this reason the demand for labor is better from February to May and slackness of work within the factory is likely to be less than the average, especially in such industries as the women's clothing and the paper-box industries.

(3) While the first half of 1919, as shown by the curve for the United States as a whole in Chart 6 (p. 17), contained a period of considerably reduced production, the movement in some of the industries here represented was not very pronounced, and it was followed by a rise in production, which occurred in many of the industries, during May and June and reached a peak in the early part of 1920. The conclusion has been reached, therefore, that as a whole the early months of 1919, even though showing a lower production than the peaks of 1918 or 1920, represent a labor demand somewhere near normal in a considerable number but not all of the industries here covered, and that there is little reason to believe that the amount of partial unemployment, on the whole, was much greater than usual. This is borne out by the similar percentages found in the Connecticut investigation for a pre-war year, 1912, (see p. 30), and in the survey in the boot and shoe industry in the spring of 1920, and the slaughtering and meat packing industry in April, 1921, (see p. 30). The last two investigations, made during the postwar boom period, when the demand for production was greatest, showed 9 per cent of partial unemployment (the actual hours employed being 91 per cent of the full-time hours per week).

(4) Some of the industries covered show a ratio of hours actually worked to full-time hours which is undoubtedly higher than normal, either for seasonal reasons or because of the speeding up due to the war which in many lines was not appreciably relaxed until 1920. Paper-box factories are particularly spasmodic in operation, and in the women's clothing, confectionery, and overalls industries the number of hours worked is possibly higher than normal; that is, the amount of time lost from unemployment while on the job would probably be higher in normal years than that recorded in this table. This may be true also of the rubber and the paper and pulp industries.

(5) On the other hand, it must be remembered that this lost time includes more than hours waiting; that is, it probably includes "days off," the occasional days or half days during which employees are voluntarily absent, and some time lost from minor illnesses and accidents. What proportion these constitute of the whole it is impossible to determine at this time. Time lost from absences is doubtless equalled by time lost from part-time operation of plants, and there is reason to believe that "hours waiting" constitute a large share of the time lost from partial unemployment. It should also be remembered that in some industries, particularly iron and steel, the method of collecting the data was such as not to take account of work done by an employee in an occupation other than his regular line of employment. This might reduce somewhat the percentage of difference between full-time hours and hours actually worked per week. The great bulk of the work in most industries, however, is done in the regular occupations of employees.

Taken in conjunction with data from the two sources mentioned above and bearing in mind that account must be taken of part-time employment in such depressional years as 1920 and 1921, the conclusion is that the percentage of partial unemployment found, while possibly too high in certain industries and too low in others, is not necessarily much above normal. Certainly, it is based on the most comprehensive single body of data available regarding time lost from all forms of partial unemployment in a considerable section of industry.

SURVEY OF THE BOOT AND SHOE INDUSTRY (1920) AND THE SLAUGHTERING AND MEAT PACKING INDUSTRY (1921) BY THE UNITED STATES BUREAU OF LABOR STATISTICS.

An investigation of the boot and shoe industry made early in 1920 [27] along similar lines showed nearly the same percentage of unemployment, although made at the peak of the postwar boom when every sort of unemployment might be expected to be at a minimum. And in a more recent survey of a similar character made by the bureau, that of the slaughtering and meat packing industry in April, 1921, the percentage of lost time was about the same. Table 9 summarizes the results found in these two industries.

[27] Of the 117 schedules secured, 18 were for a pay-roll period terminating in March, 83 in April, 14 in May, and 1 each in January and February, 1920.

TABLE 9.—AVERAGE PER CENT OF FULL TIME WORKED PER WEEK BY EMPLOYEES IN THE BOOT AND SHOE INDUSTRY, IN THE SPRING OF 1920,[1] AND IN THE SLAUGHTERING AND MEAT PACKING INDUSTRY, APRIL, 1921.[2]

Industry, and sex of employees.	Number of establishments.	Number of employees.	Full-time hours per week.	Average actual hours worked per week.	Per cent of full time worked.	Per cent of full time lost.
BOOTS AND SHOES.						
Males	117	15,427	48.4	44.4	92	8
Females	117	5,841	48.8	43.2	89	11
All employees	117	21,268	.....	.....	91	9
SLAUGHTERING AND MEAT PACKING.						
Males	34	28,969	[3] 48.4	44.4	92	8
Females	34	3,248	[3] 48.3	42.6	88	12
All employees	34	32,217	[3] 48.4	44.3	91	9

[1] Monthly Labor Review of the U. S. Bureau of Labor Statistics, August, 1920, pp. 77, 78.
[2] Idem, September, 1921, p. 95.
[3] Average basic or regular hours of operation per week.

REPORT OF CONNECTICUT COMMISSION ON CONDITIONS OF WAGE-EARNING WOMEN AND MINORS, 1912.

The Connecticut Commission on the Conditions of Wage-Earning Women and Minors found in the textile and metal industries of that State in 1912 a somewhat higher percentage of loss of time and earnings, due possibly to the higher proportion of female employees, as is shown by Table 10:

TABLE 10.—PER CENT OF FULL-TIME HOURS AND EARNINGS LOST PER WEEK BY 5,243 EMPLOYEES IN THE COTTON, SILK, AND METAL-WORKING INDUSTRIES OF CONNECTICUT, 1912.[1]

Industry, and sex of employees.	Number of employees.	Average hours actually worked per week.	Full-time hours per week.	Per cent of full-time lost.	Average actual weekly earnings.	Computed full-time weekly earnings.	Per cent of full-time earnings lost.
Cotton:							
Males	582	54	58	0.07	$9.91	$10.63	0.07
Females	942	51	58	.12	8.05	9.17	.12
Silk: Females	1,175	50	58	.14	6.26	7.40	.15
Metal trades: Females	2,544	51	[2] 58	.12	6.50	7.41	.12
Total	5,243	.....	.....	.12	.....	.....	.12

[1] Report of the Connecticut Commission to Investigate the Conditions of Wage-Earning Women and Minors. Hartford, 1913.
[2] A number of the factories were running on a 54-hour week schedule.

SUMMARY OF PARTIAL-UNEMPLOYMENT DATA.

The data from these four investigations regarding "unemployment within employment," are summarized in Table 11.

TABLE 11.—COMPARISON OF PARTIAL UNEMPLOYMENT IN INDUSTRIAL OCCUPATIONS AS SHOWN BY FOUR INVESTIGATIONS.

Investigation.	Date.	Number of persons covered.	Per cent of partial unemployment.
Industrial survey of the United States Bureau of Labor Statistics	Spring, 1919	306,690	11
Survey of boot and shoe industry by United States Bureau of Labor Statistics.	Spring, 1920	21,268	9
Survey of slaughtering and meat-packing industry by United States Bureau of Labor Statistics.	April, 1921	32,217	9
Connecticut Commission on the Conditions of Wage-earning Women and Minors.	1912	5,243	12
Total	.....	365,418	About 10

Data secured by the engineers connected with the survey of waste made in 1921 under the direction of the Federated American Engineering Societies and published in the report on Waste in Industry indicate that among representative concerns covered in the building trades, textiles, boots and shoes, metal-working establishments, men's clothing, and other industries, the amount of time lost by wage earners from partial unemployment is in a large number of instances much greater than 10 per cent, although the figures were not intended to be statistically conclusive nor should they be so regarded. Taken in connection with the industries covered in the four investigations the results of which have just been presented (the industrial survey of the Bureau of Labor Statistics, the boot and shoe inquiry of 1920, the 1921 survey of the slaughtering and meat-packing industry, and the report of the Connecticut commission) they tend to confirm the percentage arrived at (10 per cent).

This 10 per cent is what is lost from unemployment while on the pay roll. During depressions when plants are running only a few days a week or a few hours per day, partial unemployment due to part-time employment rises to a high percentage; in many instances during 1921 as much as 40 to 60 per cent of the normal full-time hours were lost. This tends to raise the average of 10 per cent to a considerably higher figure, but in the absence of definite data 10 per cent is adhered to as being conservative. If the figures for the industries covered are typical of industry in general, partial unemployment is responsible for a loss of working time of the average wage earner, amounting, on the basis of 300 working days, to 30 days per annum.

Unemployment proper, that is, total separation from the pay roll, which has been shown to be responsible for 30 days of lost time per wage earner per year, and partial unemployment (hours waiting or part-time work though on the pay roll), which causes another 30 days of lost time per wage earner per year, appear together to account for 60 working days,[27] or 10 weeks, of involuntary idleness each year. To what extent time lost from sickness, accidents, and strikes is included is not known.

UNEMPLOYMENT DUE TO SICKNESS AND LABOR DISPUTES.

SICKNESS.

Disability due to sickness or accidents and strikes or lockouts cause additional loss of time, which, although not constituting involuntary unemployment in the same sense as that previously discussed, should be taken into account in any comprehensive estimate of the factors in unemployment.

The time lost from sickness and other disability, according to State reports of the unemployment of organized wage earners, has averaged about 1.25 per cent in New York (1904–1916) and 1.4 per cent in Massachusetts (1908–1921), running about 4 days per union workman per year. It appears from more extensive investigations

[27] The following quotation from the report on Waste in Industry by the Federated American Engineering Societies indicates a much higher percentage in some important industries:

"The clothing worker is idle about 31 per cent of the year; the average shoe worker spends only 65 per cent of his time at work; the building-trades workman is employed only about 190 days in the year or approximately 63 per cent of his time. During the past 30 years bituminous coal miners were idle an average of 93 possible working days per year."—Waste in Industry, 1921, p. 16.

covering many classes of workers that the percentage for all industrial wage earners is somewhat higher, amounting to about seven days for sickness and other disabilities.

Table 12 summarizes the more important investigations in this field.

TABLE 12.—SICKNESS AS A CAUSE OF UNEMPLOYMENT.

Investigation.	Date.	Number included.	Annual loss in working days per year.
Report on Conditions of Employment in the Iron and Steel Industry [1]	1913	170,000	[2] 9
Ohio Health and Old Age Insurance Commission [3]	1912–1917	663,163	6 to 9
Metropolitan Life Insurance Co. [4]	1915–1917	376,573	6.9
A study of industrial absenteeism [5]	1919–1921	6,700	6.86
Dallas Wage Commission [6]	1917	.....	6.8
Disability experience of Workmen's Sick and Death Benefit Fund of the United States of America, 1912–1916 [7]	1912–1916	185,018	6.6
Average sick leave, clerks in U. S. Bureau of Labor Statistics [8]	1920	.....	6.3
Statistics of 415 American establishment sickness funds, averaged by California Social Insurance Commission [9]	1917	302,584	6.0
Pennsylvania Health Insurance Commission [10]	1919	104,063	6.0
Average	.....	Over 1,500,000	[11] About 7.0

[1] Report on Conditions of Employment in the Iron and Steel Industry in the United States, S. Doc. No. 110, 62d Cong., 1st sess., vol. 3, p. 22.

[2] Not including accidents.

[3] Ohio Health and Old Age Insurance Commission: Health, Health Insurance, Old-Age Pensions, February, 1919, pp. 2, 79, 80 (covers sickness and nonindustrial accidents causing disability of 8 days or more).

[4] Metropolitan Life Insurance Co.: Some recent morbidity data, compiled by Margaret Loomis Stecker, 1919. A summary of seven community sickness surveys made among policyholders of the Metropolitan Life Insurance Co., 1915–1917, by Lee K. Frankel and Louis I. Dublin, p. 23. (The figures here given relate to white persons 15 years of age and over.)

[5] "A study of the records of a large rubber company, covering 28 months from Jan. 1, 1919, to Apr. 30, 1921," paper read before American Association of Industrial Physicians and Surgeons, Boston, June 6, 1921, by Robert S. Quinby, M. D. Of this amount, 6.61 days were lost on account of sickness and 0.025 day from nonindustrial accidents, besides 0.45 day lost from industrial accidents.

[6] Report of Survey Committee to the Dallas Wage Commission, April 25, 1917, p. 5.

[7] "Disability among wage earners," by Boris Emmet in Monthly Labor Review, U. S. Bureau of Labor Statistics, Nov. 1919, p. 25. Referred to in Ohio Health and Old Age Insurance Commission report, Feb. 1919, p. 95.

[8] Special study of employees of Bureau of Labor Statistics, 1920. See Bul. 304 of the U. S. Bureau of Labor Statistics, pp. 174, 175.

[9] Report of the Social Insurance Commission of the State of California, Jan., 1917, pp. 33, 313.

[10] Report of the Health Insurance Commission of Pennsylvania, Jan., 1919, pp. 3, 31, 53.

[11] The estimate of the U. S. Commission on Industrial Relations (1915) of 9 days per wage earner lost on account of sickness, purporting to cover about a million persons, although presumably well based, has not been used here on account of inability to judge of the character of the supporting data.

LABOR DISPUTES.

Labor disputes caused an average loss in Massachusetts (1908–1921) of less than 1 per cent (0.81) of the total number of working days, and in New York (1904–14) of less than 2 per cent (1.86), an average of between two and a half and five days per union worker per year.[28] The proportion of time lost per employee from strikes by other than union employees is probably less than the union average; on the other hand, the fact that three-fourths of the entire number of strikes as recorded by the United States Commissioner of Labor for the 25 years between 1881 and 1905,[29] and presumably a somewhat similar proportion since, were ordered by labor unions, means that the union labor average of time lost from strikes applies in the great majority of cases of strikes.

[28] Bulletin 69 of the New York State Department of Labor, p. 5; Massachusetts annual reports on the statistics of labor, 1908–1919; quarterly reports on employment, Massachusetts, 1919; Massachusetts Industrial Review, 1920 and 1921.

[29] Twenty-first Annual Report of U. S. Commissioner of Labor, 1906, p. 42.

Table 13 shows the percentage of idleness due to labor disputes in New York for each month, 1904 to 1914.

TABLE 13.—PER CENT OF IDLENESS IN REPRESENTATIVE UNIONS OF NEW YORK AT THE END OF EACH MONTH, 1904 TO 1914, DUE TO LABOR DISPUTES.[1]

Year.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean.
1904	2.5	1.5	6.6	3.1	3.9	1.7	5.1	5.0	4.8	3.3	2.8	2.9	3.6
1905	3.1	2.9	3.4	2.4	1.4	1.3	.6	.7	.5	.7	.8	.8	1.6
1906	1.8	1.6	1.4	1.1	1.8	2.0	1.9	.8	.8	1.2	1.1	.7	1.4
1907	.7	1.0	1.4	.4	1.5	.7	1.9	3.1	1.4	1.0	.6	.6	1.2
1908	.4	.3	.3	.3	.2	.2	.2	1.1	.3	.4	.1	.8	.4
1909	1.4	.5	.5	3.7	3.0	2.9	2.6	2.5	2.3	2.8	2.6	1.6	2.2
1910	6.4	5.5	3.9	2.0	1.4	2.3	10.1	13.7	3.1	.5	1.4	.6	4.2
1911	.6	.6	.5	.3	1.8	3.8	1.4	1.1	1.2	.5	1.2	1.1	1.2
1912	.2	.2	.1	.2	.6	.5	1.1	1.7	.1	.2	.1	5.8	.9
1913	19.8	19.1	.1	.5	.4	.4	.1	.3	.1	.1	.8	.1	3.5
1914	.1	.2	.7	.1	.2	.2	.1	.1	.1	.1	.8	.9	.3

[1] Bulletin 69 of the New York State Department of Labor, p. 5.

From records kept by the Bureau of Mediation and Arbitration in the State of New York, covering all workers, nonunion as well as union, in manufactures and certain other industries, it appears that for the years 1910–1920, the total number of days lost from labor disputes averaged 0.81 per cent of the total working days, or about 2½ days per year. There is some reason to believe that not all strikes have been recorded every year,[30] and that this percentage is too low for New York State. It represents about half the number of days lost from labor disputes per employee as shown by the union unemployment figures in Table 13. On the other hand, the frequency and severity of strikes in the clothing and building trades in the State of New York would lead to the belief that the average days lost from labor disputes in this State is somewhat higher than for other States which have a smaller proportion of garment workers and in which there is more stability in the construction industries. For these reasons the number of days lost from labor disputes per employee or the country as a whole is believed to be between two and three a year.

SEASONAL UNEMPLOYMENT.

MONTHLY FLUCTUATIONS IN NUMBER OF FACTORY EMPLOYEES.

A considerable proportion of unemployment is due to seasonal fluctuations in the labor market and to business depressions which at times sharply lower the entire level of demand for labor.

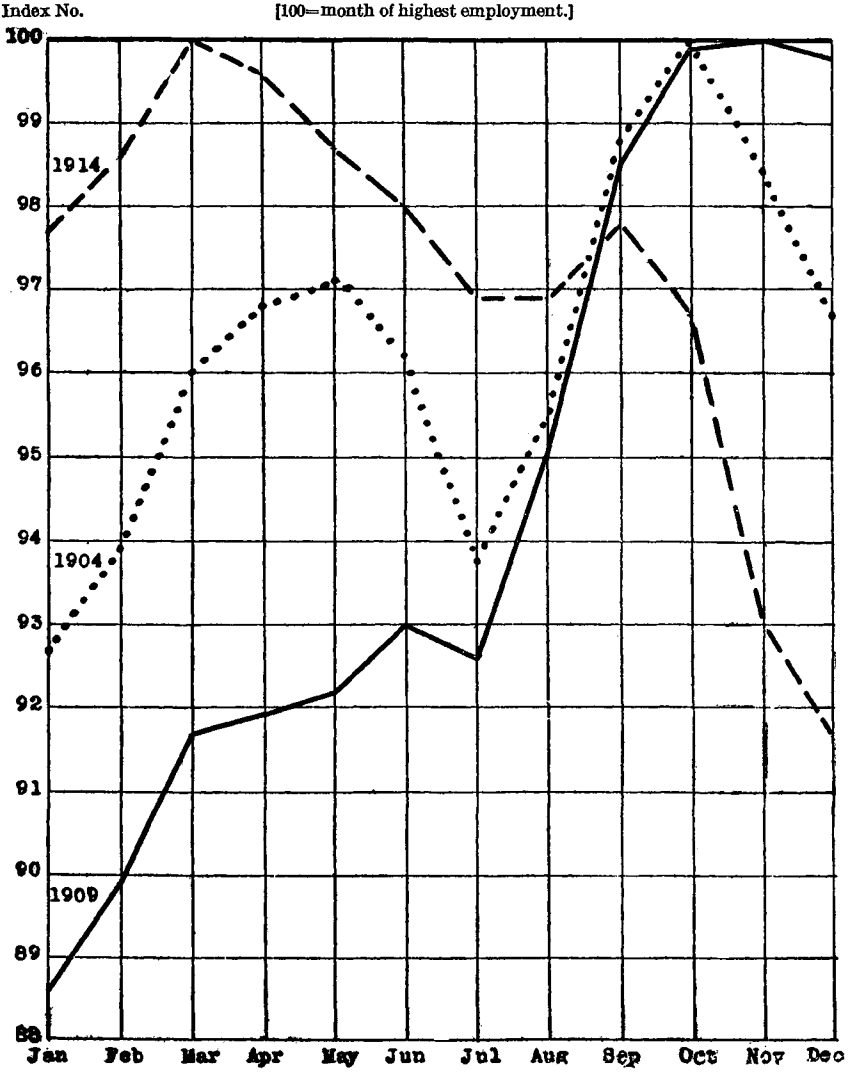
Both seasonal and depressional factors are evident in Chart 4, showing the involuntary idleness of organized wage earners in Massachusetts, not including unemployment due to sickness and labor disputes. Examination of data showing the total number of factory workers in all the industries of the United States throws some light on the character of the movements which take place and the extent of the variations, from one month or year to another.

Chart 7 shows graphically for the manufacturing industries of the United States the fluctuations in factory employment by months in each of three census years, 1904, 1909, and 1914. Allowance must be made for the general inclination or dip in each case, which accounts

[30] Compare statement by Prof. C. W. Doten, in Waste in Industry, 1921, p. 312.

for the downward movement of the 1914 curve, as business became worse during that year of depression, and the sharply upward slope of the 1909 curve, indicating the rapid increase in the total number of employees after the panic year of 1908. The sharp dip in the middle of the 1904 curve was due partly to strikes in the steel and

CHART 7.—FLUCTUATIONS IN THE TOTAL NUMBER OF WAGE EARNERS IN THE MANUFACTURING INDUSTRIES OF THE UNITED STATES, 1904, 1909, AND 1914.



textile industries which reduced temporarily the total number employed at that time and partly to the slackening of business in midsummer. When the general factors in all three curves were taken into consideration, the seasonal movement becomes plain—two peaks of employment, in the spring and in the fall, with a low point in July and another in January.

Table 14 gives the figures by months for all wage earners in manufacturing, according to the United States Census of Manufactures for 1904, 1909, and 1914, on which Chart 7 is based. The 1919 figures have not been used, since they lack significance in this connection; the general trend is sharply upward, the movement being primarily cyclical.

TABLE 14.—MONTHLY FLUCTUATIONS OF WAGE EARNERS IN MANUFACTURING INDUSTRIES IN THE UNITED STATES, 1904, 1909, AND 1914.[1]

Month.	Number.[2]			Per cent of maximum for year.		
	1904	1909	1914	1904	1909	1914
January	5,262,472	6,210,063	7,075,682	92.7	88.6	97.7
February	5,330,471	6,297,627	7,141,594	93.9	89.9	98.6
March	5,450,736	6,423,517	7,242,752	96.0	91.7	100.0
April	5,493,343	6,437,633	7,217,320	96.8	91.9	99.6
May	5,512,373	6,457,279	7,148,650	97.1	92.2	98.7
June	5,463,804	6,517,469	7,100,368	96.2	93.0	98.0
July	5,323,966	6,486,676	7,018,867	93.8	92.6	96.9
August	5,420,618	6,656,933	7,020,683	95.5	95.0	96.9
September	5,608,412	6,898,765	7,086,815	98.8	98.5	97.8
October	5,676,920	6,997,090	7,006,331	100.0	99.9	96.7
November	5,587,028	7,006,853	6,736,698	98.4	100.0	93.0
December	5,490,453	6,990,652	6,640,284	96.7	99.8	91.7

[1] Abstract of the Census of Manufactures, 1914, p. 436.
[2] The figures for 1909 and 1914 represent the number employed on the 15th of each month, or the nearest representative day; those for 1904, the average number employed during the month.

The seasonal movement may be seen clearly in the data for those industrial States where records are available for a continuous number of years showing the fluctuations by months of the number of manufacturing employees, as in New Jersey, shown graphically in Chart 8.

It is interesting to notice how uniformly the number of factory employees reaches a low point in midsummer, and rises to a peak in October and again in March. The number employed each October is naturally a little higher than in March, due to the gradual increase in population and business. The exceptional curves are found in the years of depression, 1907–8 and 1914, and in the year 1915 when the total number of employees rose sharply in response to the war demand. This rise continued during 1916, 1917, and the first half of 1918, although not shown on this chart.

In Massachusetts the yearly curves of employment show a similar movement.

CAUSES OF SEASONAL FLUCTUATIONS.

Considered more in detail, seasonal fluctuations in employment may be divided as follows:

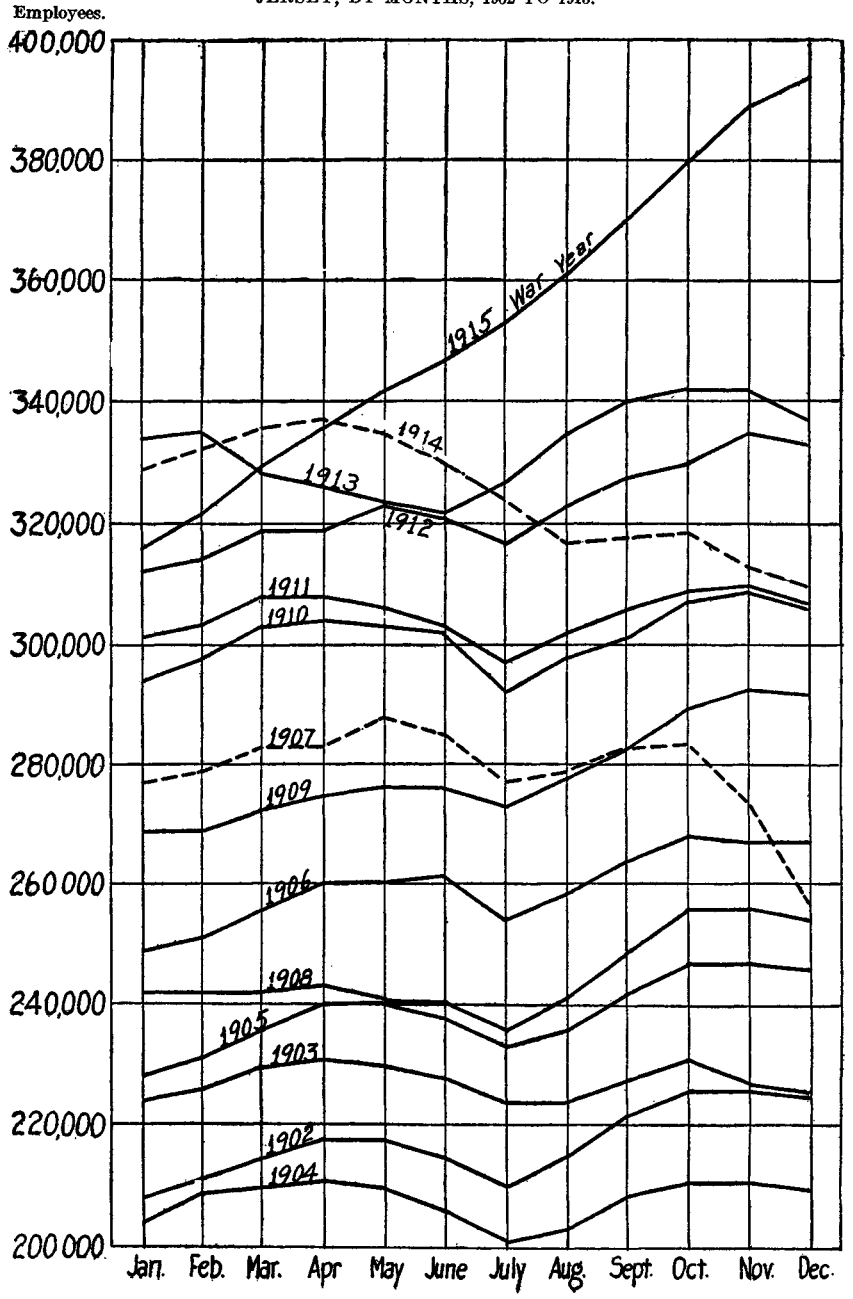
1. Those caused by conditions limiting production:

(*a*) Perishable character of raw materials, as in the canning of fruits and vegetables, harvesting of grain, etc.

(*b*) Weather (winter and summer seasons, and heat and cold) interfering with or preventing manufacturing or construction operations.

(*c*) Size of plant, intelligence of management, financial resources, degree of specialization, storage capacity—all these internal factors affect the capacity of the manufacturing plant to continue operation and to keep its employees busy during periods of temporary slackness.

CHART 8.—FLUCTUATIONS IN NUMBER OF FACTORY WORKERS EMPLOYED IN NEW JERSEY, BY MONTHS, 1902 TO 1915.



2. Those caused by conditions of demand or consumption:

(*a*) Changes in style, frequently connected with the seasons or weather.

(*b*) Other time elements in the buying habits of people—holidays, Christmas shopping, Easter, etc.

(*c*) Character of goods—luxuries or necessities, novelties or style goods, etc.; constant versus occasional or spasmodic demand.

TYPICAL SEASONAL INDUSTRIES.

A number of these types of seasonal employment are shown in Chart 9 giving the number of employees by months for certain industries from data of the Census of Manufactures for 1914.

The first of the industries charted, canning and preserving fruits and vegetables, illustrates an industry with a sharp autumn harvest peak, due to the perishable character of its raw materials.

The brick and tile industry (including terra cotta and fire-clay products) has a summer peak, both because demand for its products is highest during the summer, and because during the winter months production is possible only to a limited extent. The women's clothing industry illustrates the two-peak (spring and fall) industry. Farm machinery (agricultural implements) and fertilizers have a winter or early-spring peak; fertilizer is bought mainly in the spring, and production in both industries is mainly for spring shipment, although some fertilizer and some farm machinery are purchased to be used on land in the fall.

The majority of industries fall into one of these classes, either that with a winter peak, a summer peak, a harvest peak, or spring and fall peaks; but there are endless minor variations and modifications, depending on the character of the industry and its particular market.

Chart 10 shows the unemployment curves [31] in four of the leading industries in New York State.[32] This chart indicates strikingly the high percentage of unemployment in the clothing and building trades in New York State.

The single winter peak each year in the building industry and the two peaks annually in the clothing industry are distinct from the wavelike (rather than the seasonal) curves of the metal trades, and the comparatively even line of the printing trades.[33] The winters of low unemployment in the building trades, those of 1905–6 and 1912–13, prove upon examination of the records of the weather bureau to have been unusually mild and open, permitting work during much of the cold season.

Chart 11 shows in comparative form the unemployment curve by months in the woodworking trades in New York State[34] for the years 1909 to 1915.

---

[31] It has not been possible to eliminate unemployment due to sickness and strikes; the curves, therefore, represent unemployment due to all causes.

[32] Chart 10 is reproduced from special Bulletin 85 of the New York Department of Labor, July, 1917.

[33] These curves include unemployment due to sickness and strikes but the percentage due to these causes is small, increasing the height of the curve on the average only about 3 per cent.

[34] Data from Special Bulletin 85 of the New York State Department of Labor, July, 1917.

CHART 9.—MONTHLY FLUCTUATIONS IN THE NUMBER OF EMPLOYEES IN SPECIFIED INDUSTRIES IN THE UNITED STATES, 1909 AND 1914.

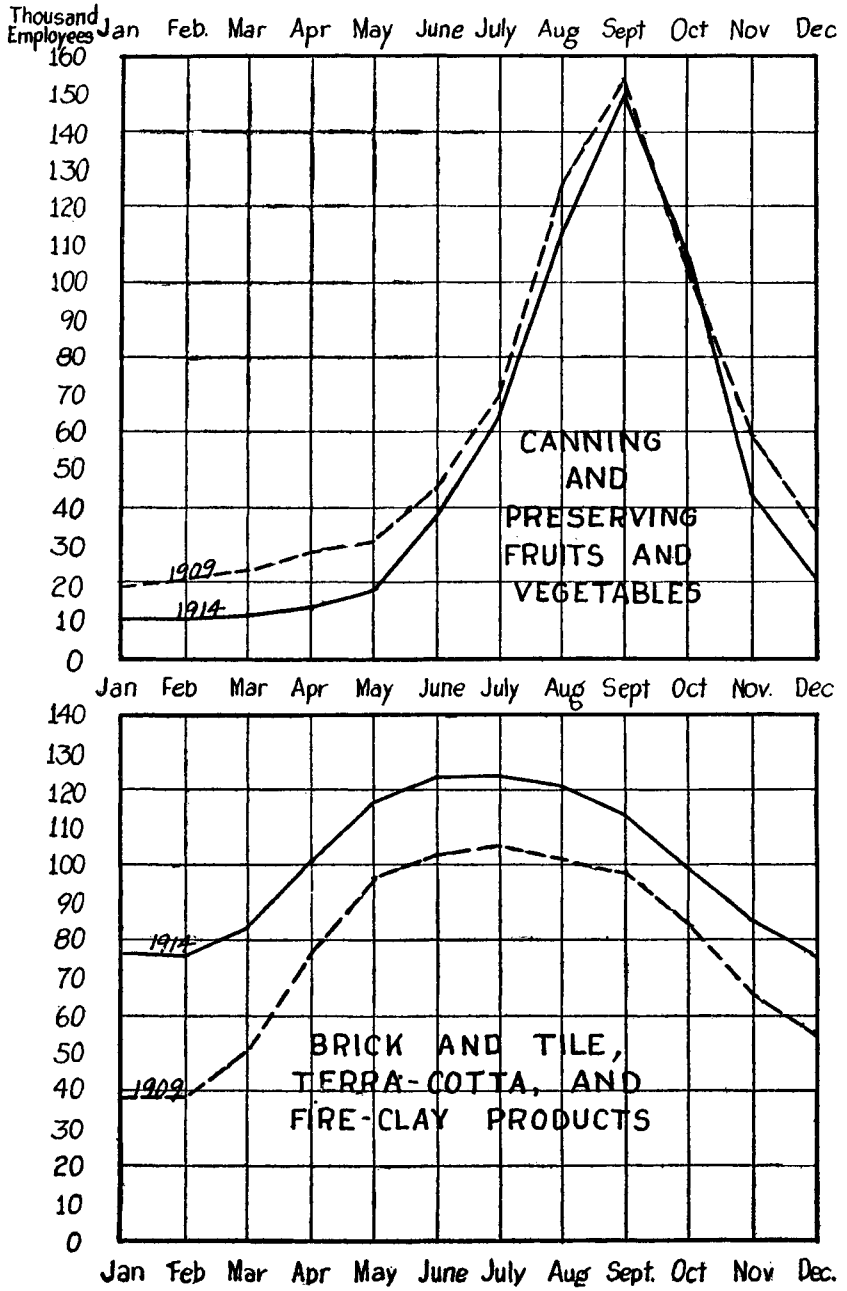


CHART 9.—MONTHLY FLUCTUATIONS IN THE NUMBER OF EMPLOYEES IN SPECIFIED INDUSTRIES IN THE UNITED STATES, 1909 AND 1914—Concluded.

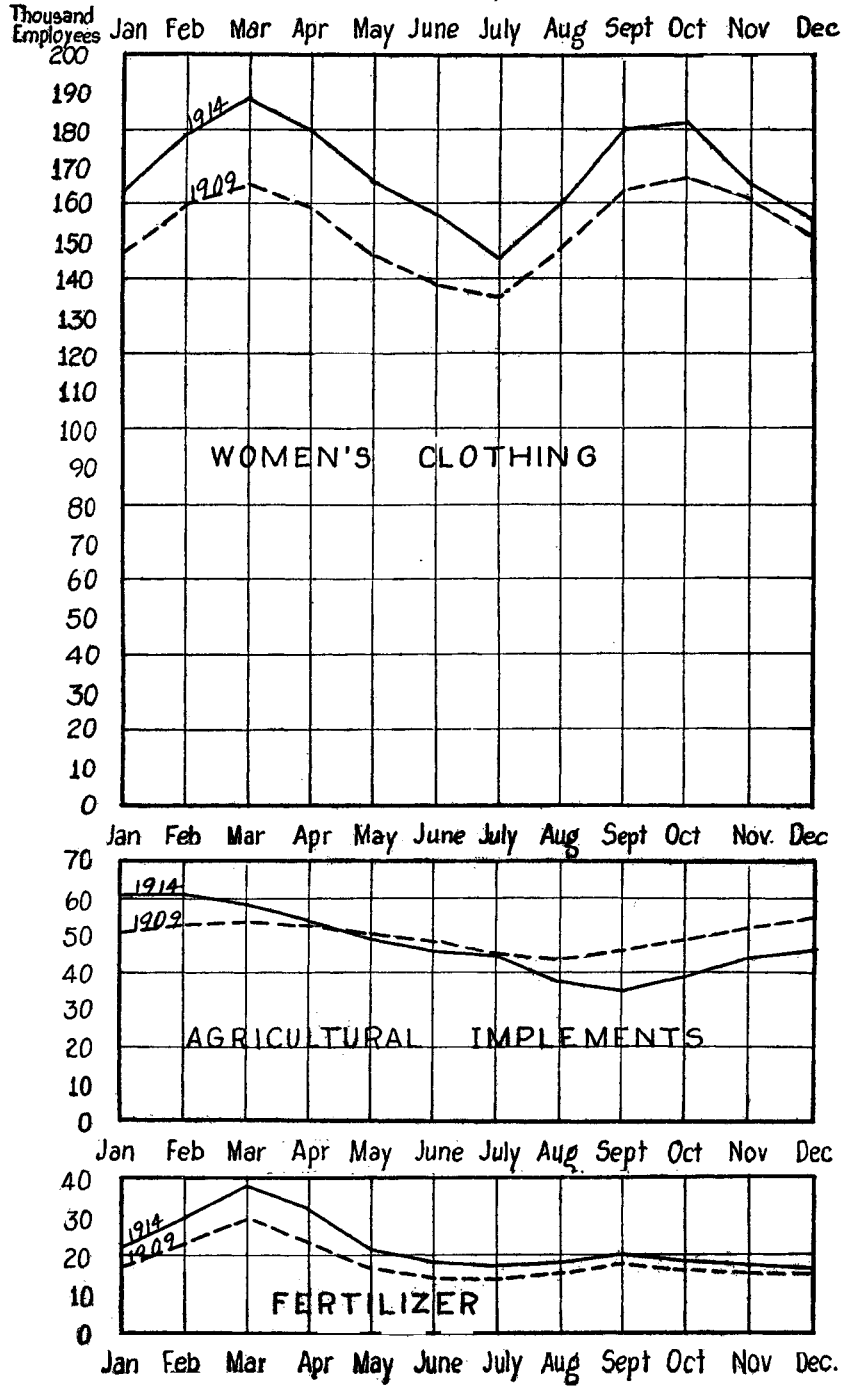
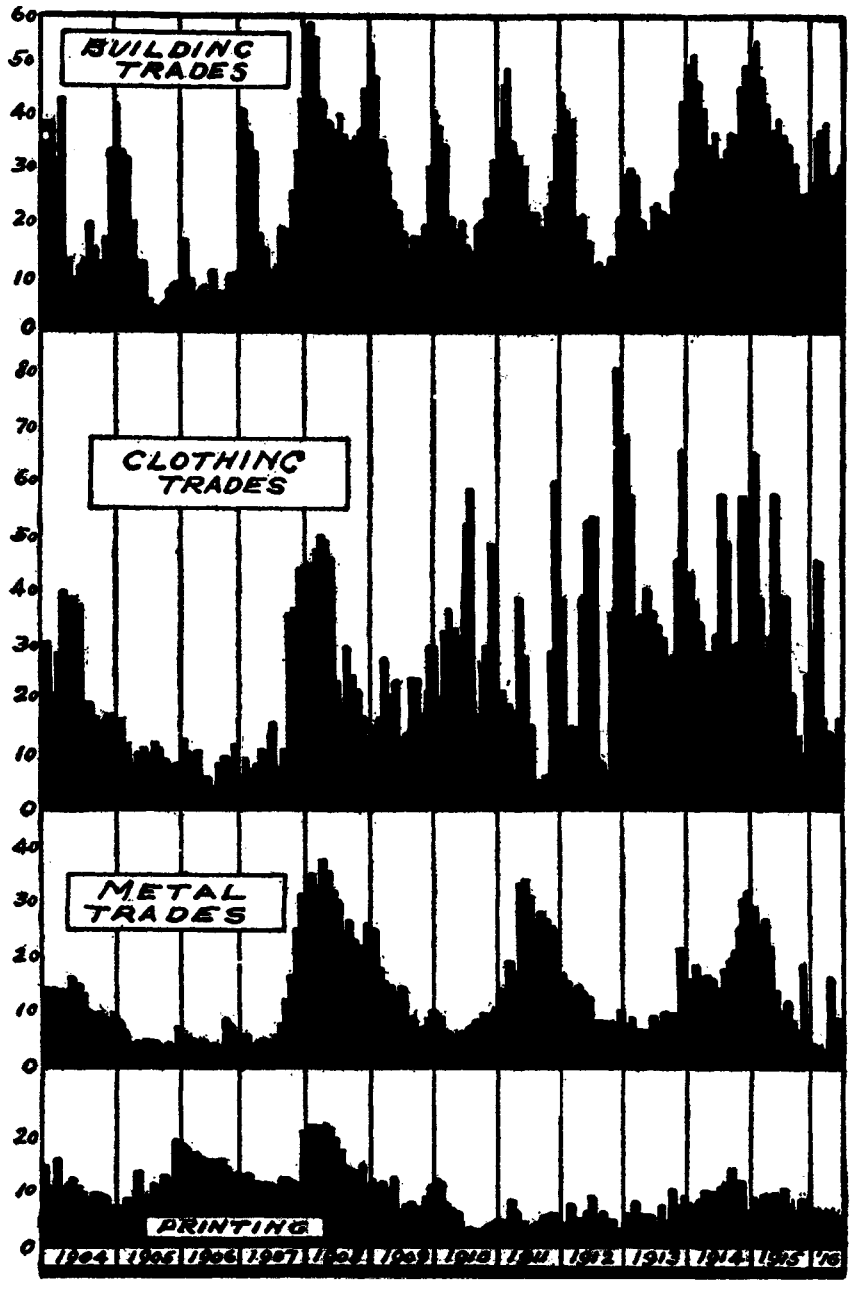


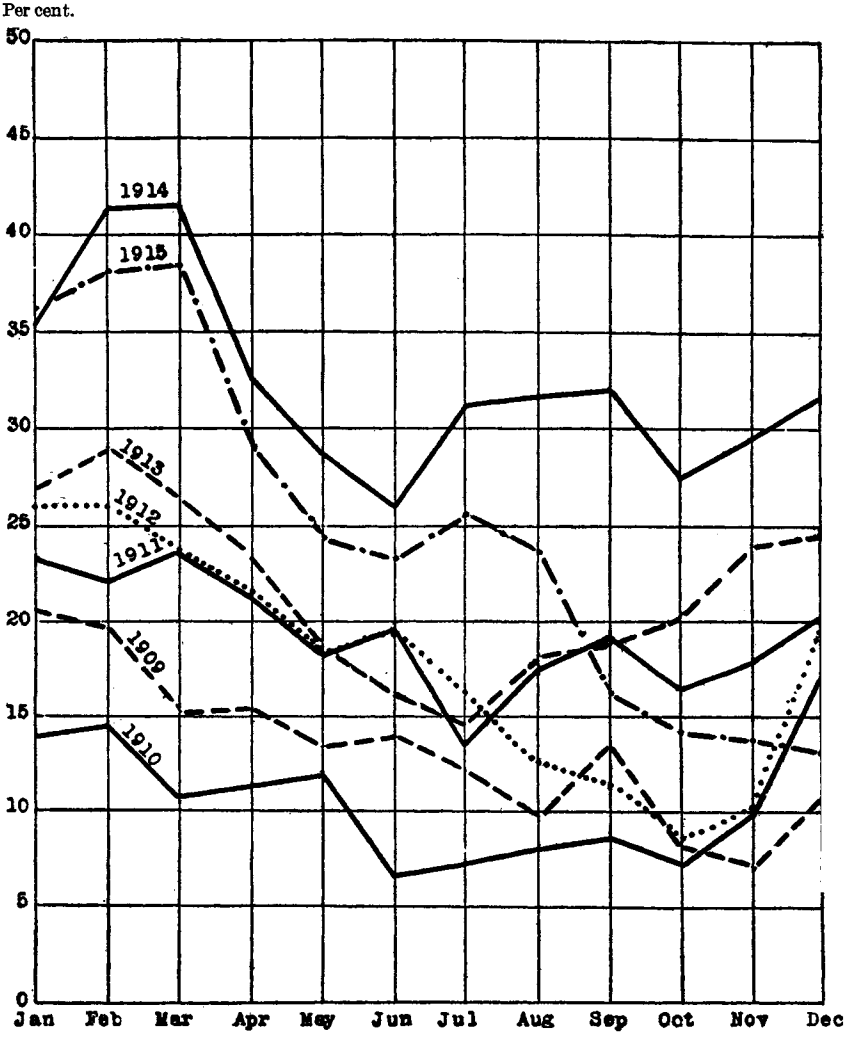
CHART 10.—PERCENTAGES OF UNEMPLOYMENT OF ORGANIZED WAGE EARNERS IN NEW YORK STATE IN THE BUILDING, CLOTHING, AND METAL TRADES, AND IN PRINTING, 1904 TO 1916.



METHODS OF REDUCING SEASONAL UNEMPLOYMENT.

While it is not within the scope of this examination of the statistics of unemployment to discuss remedies, it is interesting to note the changes brought about in the degree of seasonal unemployment in those industries in which it has been given special attention. As

CHART 11.—PERCENTAGE OF MEMBERS OF TRADE-UNIONS IDLE IN THE WOODWORKING AND FURNITURE INDUSTRY OF NEW YORK STATE, BY MONTHS, 1909 TO 1915.



the difficulty lies in such fundamental conditions as those represented by the market or by factors which accompany production, the reduction of this sort of unemployment is primarily a matter of market analysis or of factory management.

The reduction in the degree of seasonal unemployment which has occurred in some instances appears to have been accomplished by—

(1) "Smoothing" the market—making demand more even, from month to month, and in cases where the market is hopelessly seasonal,

spreading orders over more months of the year or filling in the months of low demand by developing other products of a character for use in a different season.

(2) Making output more uniform and stabilizing production by storage, in spite of unevenness of demand.

(3) Where neither of these methods is possible, stabilized employment may be promoted through training employees to do two or more jobs, using them, for example, in a different department when work in their own department is slack, or in repair and maintenance work.

What has been accomplished in these respects through intelligent analysis and planning is seen from the following instances:

A manufacturer of Christmas cards and novelties found that most of his business was concentrated in the months immediately preceding the Christmas holidays. During that time his employees were more than busy, but during the remainder of the year orders were slack and the plant ran with less than half its autumn working force. The problem was attacked both as a matter of better business and as a means of affording steadier employment to wage earners. Salesmen were instructed to take as many orders as possible during the earlier months of the year. Buyers of Christmas cards and novelties were reminded that there would be a rush for Christmas cards in November and December, and the advantages of selecting and ordering them early were explained, prompt deliveries being assured and on some items a price advantage being offered. The result was a largely increased volume of orders during the first half of the year, which kept the factory fairly busy during months in which business was previously slack. In addition the management developed a line of other products the demand for which was not especially seasonal and which could be depended on as "fillers." Thus stabilized sales were followed by stabilized production and employment.

A concern manufacturing ready-to-wear clothing found that its sales ran heavy in the spring and fall but in between were seasons when demand was slack and it was difficult to keep the factory force employed. To meet this situation the firm developed a line of clothing manufactured from staple goods and of a conservative style for which there was reasonably sure to be a good demand at all seasons. This line was advertised widely and found a ready sale.

A company manufacturing women's clothing, by making its designs ahead, and planning its production and selling its goods well in advance of the immediate market, has been able to operate its plant for 51 weeks of the year. The confidence of dealers in the house, whose name and trade-mark were widely known, helped to make the plan a success.

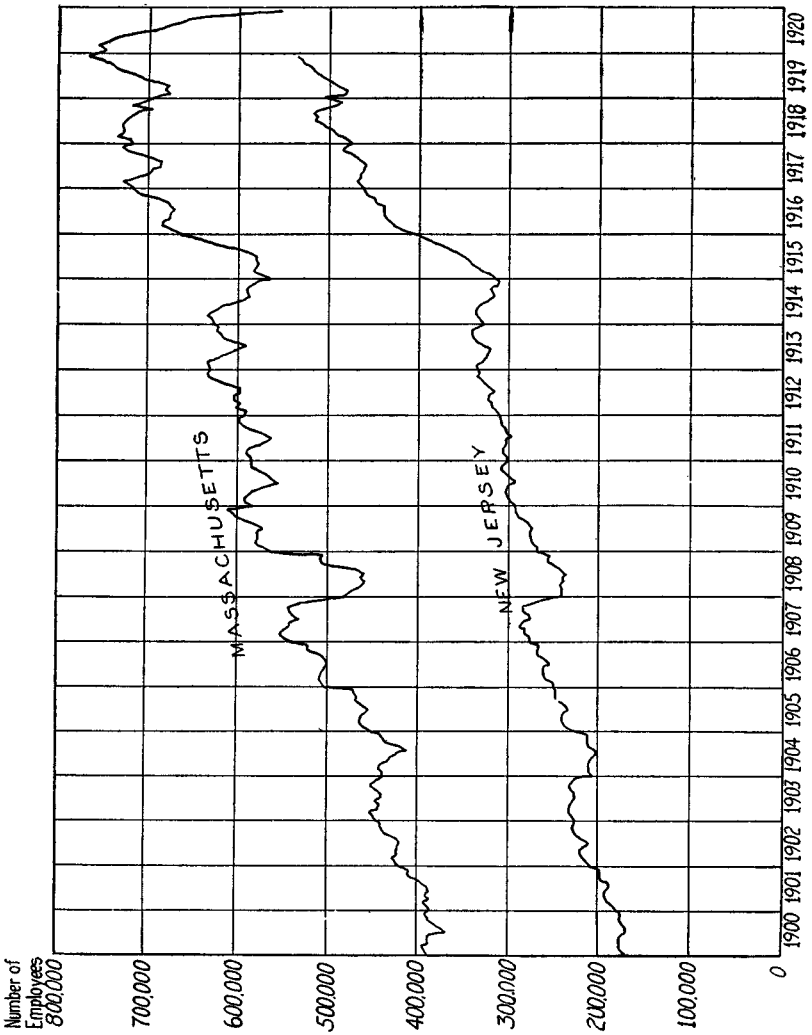
DEPRESSIONAL UNEMPLOYMENT.

The sharp reduction in the demand for goods which accompanies the periodical business slumps known as depressions is responsible for the laying off at such times of large numbers of wage earners.

The business cycle, at the peak of which are extra prosperous conditions or "boom" times, and at the bottom depressions or panics, is the result of a series of complex causes. These depressions have come at more or less regular intervals, now and then being interfered with by economic forces which are only partially understood.

Such depressions occurred in 1893, 1907–8, 1914–15, and we are now apparently emerging from one more severe than either of the two previous depressions. The reduction in the number of persons employed in industry at such times is illustrated by Chart 12 relating to Massachusetts and New Jersey factory employees. This chart[35]

CHART 12.—FLUCTUATIONS IN EMPLOYMENT IN MASSACHUSETTS FACTORIES, 1900 TO 1920, AND IN NEW JERSEY FACTORIES, 1900 TO 1919.



shows clearly the bad times of 1908, 1914–15, and the present, with the slight depression of 1904 also evident.

Being periodic, the unemployment which is due to depressions does not continue long, but it is relatively severe while it lasts. In such a period as the summer of 1921, when the total percentage of

[35] For figures on which this chart is based, see Tables 1 and 2 of the Appendix (p. 47).

industrial unemployment ran (as nearly as can be determined) between 25 and 30 per cent, more than half of this unemployment appears to have been due to the depression.

A detailed study of the depressional factor in unemployment is being made by a special subcommittee of the President's Conference on Unemployment, which should result in a material addition to our knowledge on the subject.

LABOR TURNOVER AND UNEMPLOYMENT.

A considerable proportion of the unemployment which exists year after year is due to the failure of the man to fit the job or of the job to last. The former is reflected in discharges, the latter in lay offs. Both of these factors enter into the figures of labor turnover, increasing the monthly or yearly rate of labor change.

There are two striking facts which stand out from the data available regarding labor turnover.

1. In a very large number of factories the number of new employees hired during each year to take the place of those who leave is greater than the average total number of employees on the pay rolls during the year. The fact that during seven years in order to keep 691,681 workers on the pay rolls of the factories covered in Table 15 it was necessary to hire 856,731 persons, while 840,637 were separated from the pay roll during the same seven years, means that the average rate of separation per year was more than 100 per cent. This is the equivalent of hiring an entirely new force every 12 months—that is, replacing every old employee with a new one oftener than once a year. And in this average are included the employees of many of the more progressive plants, those which have employment records and have turned their attention to the matter of reducing turnover; in many plants the labor change ratio has run and runs much higher, frequently to 200 or 300 per cent per year and over.

2. Three-fourths of all the separations from factory pay rolls are made on the initiative of the employee—that is, about 75 per cent are voluntary "quits," and only 25 per cent are discharges and lay offs. Discharges are due largely to the incompetence of the workman; lay offs usually represent business conditions which necessitate cutting down the working force. These two are elements in unemployment. The percentage of separations from the pay roll due to discharges is a fairly constant factor, increasing only a little in bad times and falling only slightly in prosperity. In the study of the separations of over 840,000 employees of American industries made by Brissenden and Frankel for the United States Bureau of Labor Statistics, it was found that an average of 16 per cent of all separations were due to discharges; 11 per cent to lay offs, and 73 per cent to voluntary "quits." In bad years, such as 1914, lay offs ran up to 31 per cent; in the prosperous years, such as 1912 and 1913, they fell as low as 6 and 7 per cent. Even in 1914, when the lay offs rose, the proportion of "quits" was 49 per cent or approximately one-half of the total separations.

Table 15 shows the percentages of total separations due to discharges, lay offs and voluntary leaving for wage earners in 261 establishments in the years 1910 to 1915, and 1917–18.

TABLE 15.—NUMBER AND PER CENT OF SEPARATIONS IN MANUFACTURING INDUSTRIES, BY TYPE OF SEPARATION, 1910 TO 1915, AND FOR 12 MONTHS ENDING MAY 31, 1918.[1]

Year.	Number of establishments.	Number of workers.	Number of accessions.	Number of separations.			Total.	Per cent due to—		
				Discharges.	Lay offs.	Quits.		Discharges.	Lay offs.	Quits.
1910	7	23,273	15,936	2,608	514	14,230	17,352	15	3	82
1911	13	56,577	53,506	9,837	5,082	35,716	50,635	19	10	71
1912	20	72,526	78,843	13,628	4,057	49,806	67,491	20	6	74
1913	35	134,823	182,276	32,094	13,334	141,035	186,463	17	7	76
1914	50	118,195	82,585	19,565	29,737	46,660	95,962	20	31	49
1915	28	78,984	50,421	6,946	8,536	26,862	42,344	16	20	63
1917–18	108	207,303	393,164	51,400	29,833	299,157	380,390	14	8	79
Total	261	691,681	856,731	136,078	91,093	613,466	840,637	16	11	73

[1] Monthly Labor Review, U. S. Bureau of Labor Statistics, June, 1920, p. 48.

COST OF UNEMPLOYMENT: ITS EFFECT ON INDUSTRY.

Unemployment, affecting as it does the continuity of both production and distribution, concerns manufacturer and merchant as vitally as the wage earner and the public.

The lessened buying power represented by the unemployment of a million and a half wage earners means no slight subtraction from the total demand for goods supplied by American producers and dealers. At an average rate of pay, which is purposely placed low in order not to overestimate its volume, it amounts to a loss of between six and eight million dollars a day,[36] or between $1,500,000,000 and $2,500,000,000 for the 250 to 300 days of the working year. If to this be added an equal amount for wages lost through part-time employment, the total can not be less than from three to five billion dollars. It is much higher [37] at a time such as the present, when two or three times as many persons as usual are unemployed. Even in normal times, therefore, the unemployment of 16,000,000 industrial wage earners for a period of 60 working days in the year represents a loss of no small volume.

Three or five billion dollars less in the tills of merchants means a correspondingly smaller volume of orders for factories. The employed are active consumers. When consumers are unemployed and stop calling for goods factory wheels cease turning. When these factories close, more men are out of work and without purchasing power from current earnings. The more unemployment, the less the demand for goods; the less the demand, the more factory shutdowns, the more unemployed, and the less the demand for goods. So it goes around in a vicious circle, unemployment causing a reduction of buying power and demand, which in turn produces further unemployment.

The effect of this reduced buying power is very evident. The workman who had become a consumer of good shoes and collars, a

[36] The average wage of the common labor employed by the United States Steel Corporation was about $4 per day in June, 1921; skilled labor is much more highly paid. The average wage of factory workers in New York State in March, 1922, was about $24 per week.

[37] Other estimates place the present loss from unemployment at $6,000,000,000 a year.

buyer and reader of newspapers and magazines, a user of many nonluxury conveniences not previously afforded, ceases on account of lack of income to be able to include these things among the products which he commonly buys. His standard of living for a time drops back to lower levels than before, and recovery is very slow. The lowering of the demand level and the standard of living of thousands of workers which accompanies a severe depression such as the present one means fewer comforts in regular demand by the wage earner and less future business for all.

It is thus to the interest of the entire business community to maintain a reasonably high level of general well-being. To this end workmen should be kept employed with reasonable steadiness at fair wages; this is only good business.

Further, idle men as well as idle machinery, for so much of the time as they are idle and not producing goods, must be "carried" and provided for by those who are busy—either other wage earners or the consumer who eventually pays the bills.

A further question which is always present, and which is peculiarly pertinent at such a time as this, is whether it is good policy to permit the human machines, which are so much more than mere machines, to deteriorate. Unemployment means a lowering of physical vitality through less adequate sustenance, the reduction of industrial initiative, and a lessening of self-respect. A struggle for a bare existence replaces comfortable living for the family of the unemployed, even such existence being made possible by the aid of friends and, as a last resort, assistance from relief organizations. These considerations constitute the human side of the unemployment problem. Is it sound public policy to let either the health or the morale of the workers go to pieces?

Because unemployment is both a social and a business problem, the elements composing it have been presented in considerable detail in order to see at what point they offer the most promising solution.

NEED OF BETTER EMPLOYMENT STATISTICS.

For a country of such extended industrial interests as the United States, the lack of adequate statistics on employment matters is surprising. Only by the most persistent and painstaking piecing together of existing data can they be made to present a reasonably adequate and consistent picture of American employment conditions. At a time like the present when the country needs to know how much unemployment there is, where it is, how it compares with past unemployment, how rapidly it is growing or waning, and how much is seasonal or depressional, we are confronted with great gaps in our statistical knowledge, to be bridged only by information secured piecemeal regarding conditions in particular industries. The primary need is for fuller and better data regarding employment and unemployment, collected and published regularly by a responsible statistical body of each State and of the United States.

APPENDIX.

STATISTICAL DATA OF EMPLOYMENT AND UNEMPLOYMENT.

TABLE 1.—AVERAGE NUMBER OF PERSONS EMPLOYED IN MASSACHUSETTS INDUSTRIES, BY MONTHS, 1900 TO 1920.[1]

Year.	Number of establishments.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1900.....	4,696	389,107	393,275	395,188	389,772	389,552	382,342	369,070	374,251	380,663	386,760	388,792	390,970
1901.....	4,658	393,625	395,334	400,078	390,746	396,022	321,740	390,075	395,540	403,728	410,996	415,322	412,875
1902.....	4,673	423,731	424,979	429,796	425,413	427,718	424,719	424,827	427,035	436,040	443,741	445,982	443,072
1903.....	4,673	447,418	449,531	452,599	441,701	440,340	445,364	440,367	438,333	445,059	451,222	448,455	445,129
1904.....	4,730	439,196	439,677	443,390	441,087	434,729	429,115	422,895	411,430	419,444	434,844	438,770	440,686
1905.....	5,055	461,337	467,342	472,535	473,710	474,149	471,201	469,206	475,381	483,331	484,868	488,956	490,879
1906.....	5,055	503,191	505,177	509,203	508,475	507,037	504,205	500,120	502,772	507,959	515,242	522,124	522,163
1907.....	5,671	537,869	547,051	552,517	548,319	545,131	542,823	533,666	538,712	543,343	544,879	533,087	506,946
1908.....	6,044	481,348	476,229	471,918	463,837	460,859	463,059	460,788	468,192	491,159	507,713	508,421	506,038
1909.....	11,684	565,750	572,618	579,519	576,618	576,379	576,055	573,462	581,008	594,686	601,533	604,466	612,615
1910.....	7,939	584,657	590,453	590,763	585,541	580,744	568,439	555,466	562,781	567,125	575,280	584,108	585,216
1911.....	8,132	584,158	586,445	591,880	586,466	575,328	569,077	564,765	571,490	583,344	594,430	598,948	599,982
1912.....	8,271	593,183	590,366	602,980	599,918	603,835	605,408	598,260	599,818	613,188	623,742	631,914	632,739
1913.....	8,405	629,310	630,864	631,398	622,416	610,677	604,521	591,692	602,634	613,814	619,348	623,022	621,210
1914.....	12,013	626,776	628,535	633,583	628,344	619,082	611,928	595,609	588,703	589,194	590,992	587,141	580,489
1915.....	9,707	567,502	575,765	584,116	581,950	580,479	581,699	581,220	593,754	604,754	624,313	636,677	645,391
1916.....	9,829	662,688	672,550	682,689	682,584	677,829	675,595	672,858	675,904	677,233	690,158	705,725	713,454
1917.....	9,865	715,364	722,015	726,487	710,444	699,985	696,500	687,090	685,328	694,660	708,288	722,095	728,171
1918.....	9,695	716,081	719,651	734,211	727,816	727,234	727,725	724,001	718,608	711,710	696,861	716,004	704,459
1919.....	11,905	695,418	677,006	680,548	678,956	689,268	705,186	715,436	726,354	736,208	741,732	751,713	765,546
1920.....	10,221	756,859	748,819	755,002	747,075	738,841	719,041	696,579	683,464	668,541	656,046	610,398	557,525

[1] Annual reports of Census of Manufactures, Massachusetts Bureau of Statistics, 1900 to 1918; data for 1919 and 1920 received from the Massachusetts Department of Labor and Industries.

TABLE 2.—NUMBER OF EMPLOYEES IN MANUFACTURING ESTABLISHMENTS IN NEW JERSEY, BY MONTHS, 1895 TO 1919.[1]

Year.	Number of establishments.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1895....	309	35,387	35,641	37,160	37,981	37,441	36,695	36,346	37,066	38,148	38,801	38,707	38,702
1896....	349	43,674	43,882	43,963	43,847	42,975	41,890	40,132	39,843	41,769	42,573	42,213	42,778
1897....	503	54,115	56,024	56,610	57,823	57,336	56,538	54,076	54,942	54,009	58,440	58,076	57,684
1898....	1,464	142,371	144,278	147,986	149,055	148,599	147,874	143,200	144,332	150,284	151,749	150,720	150,711
1899....	1,738	164,970	167,505	171,509	174,847	177,562	179,563	173,947	177,700	183,552	185,285	183,846	186,162
1900....	1,660	171,521	174,036	177,035	178,885	178,253	176,212	169,460	170,578	174,571	176,493	175,930	175,627
1901....	1,660	181,679	184,887	188,804	191,411	192,302	191,003	187,252	188,548	193,661	198,993	198,624	198,520
1902....	1,811	208,908	211,101	215,327	218,533	218,370	215,263	210,852	215,337	222,396	226,585	226,765	225,711
1903....	1,811	224,631	226,322	230,545	231,480	230,805	228,629	224,145	224,528	228,395	231,079	227,630	225,905
1904....	1,756	204,267	209,397	210,792	211,918	210,617	206,110	201,678	203,983	209,426	211,734	211,829	210,571
1905....	2,018	228,182	231,150	236,819	240,634	240,197	238,973	233,856	236,008	242,968	247,264	247,943	246,541
1906....	2,120	249,308	251,883	256,809	260,650	260,856	261,201	254,631	258,018	264,073	268,422	267,819	267,463
1907....	2,152	277,910	279,179	283,750	283,266	288,291	285,714	277,273	279,221	283,398	284,962	274,084	257,311
1908....	2,127	242,737	242,207	242,726	243,525	240,709	240,575	236,086	241,642	249,470	256,073	256,735	254,769
1909....	2,291	269,051	269,220	273,215	275,510	276,432	276,395	273,239	278,332	283,292	290,259	293,701	292,773
1910....	2,423	294,551	298,398	303,651	304,935	303,527	302,251	292,435	298,007	301,511	307,925	309,032	306,616
1911....	2,475	301,891	303,567	308,009	308,501	306,209	303,620	297,375	302,170	306,272	309,456	309,979	307,291
1912....	2,556	312,171	314,849	319,006	319,232	323,395	321,117	317,229	323,479	328,515	330,585	335,315	333,933
1913....	2,638	334,579	335,974	329,979	326,884	323,618	322,121	327,609	335,767	340,043	342,294	342,608	337,020
1914....	2,624	329,933	332,662	336,462	337,365	335,759	330,638	324,839	317,739	318,544	319,692	313,900	310,211
1915....	2,817	316,755	322,767	330,397	336,757	342,175	347,735	353,806	361,114	370,080	380,692	389,418	394,030
1916....	2,950	410,781	416,932	428,464	432,171	435,359	438,228	438,995	438,701	445,417	450,580	457,020	459,393
1917....	.....	463,149	466,441	469,988	465,388	464,119	461,527	460,250	463,306	469,876	475,736	482,256	481,571
1918....	.....	476,749	482,763	491,394	495,998	503,385	506,641	514,868	512,701	514,114	503,510	493,011	486,077
1919....	.....	504,994	484,983	482,240	489,806	496,342	503,068	510,709	516,895	519,235	528,238	530,083	537,639

[1] Annual reports of the Bureau of Industrial Statistics of New Jersey, 1895 to 1916; U. S. Census of Manufactures, 1919. Data for 1917 and 1918 received from the Bureau of Industrial Statistics of New Jersey.

TABLE 3.—PER CENT OF MEMBERS OF REPRESENTATIVE TRADE-UNIONS IN NEW YORK STATE IDLE AT THE END [1] OF EACH MONTH, 1904 TO 1916, BY INDUSTRIES. [2]

METALS, MACHINERY, AND SHIPBUILDING.

Year.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1904	13.7	13.8	13.0	13.3	16.1	14.7	13.2	10.0	8.0	9.5	8.8	8.8
1905	9.4	7.9	6.2	4.1	4.6	4.2	5.0	4.7	4.5	3.4	4.1	3.8
1906	7.1	5.1	5.4	4.5	4.7	4.8	3.5	4.0	2.8	8.8	7.5	6.2
1907	5.5	5.6	3.7	4.5	4.9	4.4	5.4	7.4	12.0	16.0	24.7	30.9
1908	30.1	35.0	32.4	37.4	35.3	31.9	29.9	23.9	26.5	22.8	21.7	20.9
1909	25.7	24.8	17.9	15.3	14.5	13.2	14.3	8.9	8.7	5.9	7.1	8.5
1910	9.8	9.1	6.4	6.0	5.7	6.1	6.1	6.9	8.2	9.1	9.2	9.7
1911	10.5	12.9	18.8	16.8	32.7	33.9	31.0	26.2	28.0	26.8	25.4	24.4
1912	17.0	15.6	12.3	14.6	13.4	12.8	8.5	8.3	8.3	8.4	7.5	10.2
1913	7.6	9.1	6.8	6.7	6.7	9.1	8.3	10.0	9.0	9.5	21.4	16.2
1914	15.7	18.4	16.2	16.5	16.0	13.9	17.4	19.4	21.1	24.9	30.6	32.0
1915	28.8	24.9	26.8	21.8	13.8	9.9	11.9	8.1	6.5	18.6	5.0	4.0
1916	3.6	2.9	16.1	8.3	8.7	7.2	.....	.....	.....	.....	.....	.....

CLOTHING AND TEXTILES.

Year.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1904	30.0	20.5	28.3	39.4	35.7	38.4	37.1	19.1	18.9	16.3	14.1	14.4
1905	15.2	12.8	16.3	11.3	7.3	10.2	11.1	9.6	11.9	10.8	8.5	7.3
1906	8.1	12.5	10.2	9.4	10.4	5.3	5.2	3.5	8.0	9.4	8.4	11.5
1907	5.4	9.2	6.5	8.2	10.8	8.2	15.4	7.1	10.7	35.5	36.4	43.6
1908	44.1	43.9	46.8	49.6	48.6	45.2	22.8	19.0	29.2	24.1	21.4	16.6
1909	11.8	14.6	16.4	27.2	20.3	23.1	13.0	13.7	23.8	23.7	17.0	21.4
1910	29.3	19.9	32.2	36.0	32.6	30.7	51.0	57.8	15.7	26.1	29.4	47.9
1911	35.1	21.4	19.0	17.5	38.7	27.4	15.2	3.0	3.8	4.5	28.5	59.4
1912	34.8	7.4	14.6	13.3	38.0	52.1	52.9	8.0	2.0	6.4	35.4	80.2
1913	68.3	56.6	30.1	35.1	39.6	35.7	33.2	30.8	23.4	27.6	45.1	65.0
1914	42.4	37.4	33.8	26.2	28.3	31.5	57.0	47.9	27.8	30.0	56.4	47.9
1915	64.4	38.1	27.2	31.2	56.6	36.3	38.3	20.1	12.6	9.1	24.0	31.5
1916	44.7	15.9	13.5	12.4	16.0	27.7	.....	.....	.....	.....	.....	.....

PRINTING, BINDING, ETC.

Year.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1904	15.0	11.0	16.0	10.4	11.3	12.4	10.8	9.9	8.5	9.8	9.8	9.4
1905	7.3	7.3	7.2	8.6	8.6	13.8	9.3	9.2	11.3	10.8	13.0	12.1
1906	19.6	18.9	18.1	17.0	16.9	16.3	15.8	15.7	15.5	15.8	14.4	13.2
1907	12.9	12.8	13.1	11.5	11.6	11.5	11.5	10.3	12.1	12.3	11.7	11.1
1908	21.2	21.7	21.8	21.7	22.3	21.6	19.6	17.5	14.5	13.9	13.6	15.0
1909	11.0	12.1	10.9	11.6	9.9	12.6	6.4	7.4	8.1	6.8	7.1	9.2
1910	5.9	7.2	6.6	7.8	6.8	6.4	3.1	3.3	2.8	2.8	3.4	4.0
1911	4.6	4.8	4.6	8.5	6.7	4.6	3.3	3.8	4.0	5.6	6.0	6.1
1912	4.3	4.1	7.8	5.1	5.2	6.5	9.3	5.9	6.7	5.1	5.1	3.3
1913	6.3	6.4	8.7	6.3	6.5	6.1	4.4	7.4	4.8	10.9	7.4	9.4
1914	8.2	7.4	8.5	10.3	9.9	10.1	11.1	11.9	14.7	12.8	12.4	6.9
1915	9.3	8.6	10.0	9.7	9.9	9.6	10.9	11.0	10.0	9.3	8.4	7.4
1916	7.3	6.6	7.2	6.6	6.2	6.6	.....	.....	.....	.....	.....	.....

BUILDING, STONE WORKING, ETC.

Year.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1904	38.3	31.2	42.6	12.8	9.3	11.9	12.9	19.8	15.2	12.6	17.1	32.9
1905	41.5	32.6	31.8	18.8	12.8	12.7	5.6	4.5	2.5	5.2	7.5	8.4
1906	14.3	16.4	9.4	6.7	7.6	6.4	10.8	6.9	6.4	7.3	10.2	19.2
1907	40.4	36.1	32.5	17.7	14.9	10.7	11.4	18.5	18.1	25.1	32.5	42.1
1908	55.6	56.3	53.6	42.2	38.3	36.3	39.5	35.5	34.3	35.2	36.7	44.3
1909	52.3	46.2	34.7	29.0	23.5	21.5	17.8	13.8	16.7	16.5	18.5	29.7
1910	38.9	37.0	33.6	20.3	17.9	19.6	15.6	13.7	18.9	19.5	23.5	30.4
1911	36.8	44.5	47.7	34.1	31.5	29.6	20.9	20.9	18.0	21.8	26.6	35.5
1912	43.3	40.0	38.2	19.9	20.4	15.6	10.2	11.8	10.2	12.3	12.6	19.9
1913	27.7	29.1	27.9	19.6	17.7	21.9	22.5	20.9	20.3	24.3	28.5	41.4
1914	47.4	50.1	45.3	40.2	33.2	35.5	30.5	32.8	35.7	35.0	44.0	48.2
1915	51.8	52.8	46.0	41.2	36.2	38.2	35.3	33.6	28.9	23.9	23.9	30.9
1916	34.8	36.0	37.3	27.5	27.7	29.7	.....	.....	.....	.....	.....	.....

[1] The reporting date from July, 1915, to June, 1916, was the 15th of the month.
[2] Special Bulletin No. 85 of the New York State Department of Labor, pp. 47–50.

TABLE 3.—PER CENT OF MEMBERS OF REPRESENTATIVE TRADE-UNIONS IN NEW YORK STATE IDLE AT THE END OF EACH MONTH, 1904 TO 1916, BY INDUSTRIES—Concluded.

ALL INDUSTRIES COMBINED.

Year.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1904	25.8	21.6	27.1	17.0	15.9	13.7	14.8	13.7	12.0	10.8	11.1	19.6
1905	22.5	19.4	19.2	11.8	8.3	9.1	8.0	7.2	5.9	5.6	6.1	11.1
1906	15.0	15.3	11.6	7.3	7.0	6.3	7.6	5.8	6.3	6.9	7.6	15.4
1907	21.5	20.1	18.3	10.1	10.5	8.1	8.5	12.1	12.3	18.5	22.0	32.7
1908	36.9	37.5	37.5	33.9	32.2	30.2	26.8	24.6	24.6	23.1	21.5	28.0
1909	29.3	26.5	23.0	20.3	17.1	17.4	13.9	11.9	14.5	13.7	13.3	20.6
1910	24.5	22.4	22.6	16.0	14.5	15.4	19.4	22.3	12.5	15.0	17.5	27.3
1911	26.7	24.8	25.6	21.3	27.2	22.9	15.5	11.7	11.2	11.6	20.0	34.2
1912	25.8	17.6	18.8	13.3	20.1	22.8	21.1	9.1	5.9	7.4	15.3	30.1
1913	38.2	33.4	21.8	21.7	22.9	22.2	20.8	19.6	16.2	19.3	27.8	40.0
1914	32.3	30.7	28.3	23.6	22.7	25.5	32.5	30.3	24.3	24.9	35.8	35.7
1915	40.1	32.2	27.4	26.4	31.8	25.5	26.0	19.3	14.9	12.7	17.6	21.9
1916	30.9	17.0	16.4	13.2	14.6	20.4	.....	.....	.....	.....	.....	.....

TABLE 4.—INDEX NUMBERS OF EMPLOYMENT IN REPRESENTATIVE FACTORIES IN NEW YORK STATE, BY MONTHS, 1914 TO 1921.[1]

[June, 1914=100.]

Month.	1914	1915	1916	1917	1918	1919	1920	1921
January	.....	92	108	121	121	113	123	93
February	.....	94	111	121	123	112	122	94
March	.....	94	112	123	124	111	125	95
April	.....	95	115	121	123	111	123	94
May	.....	97	113	120	122	110	122	92
June	100	98	113	118	123	109	121	90
July	97	97	112	117	125	113	121	88
August	92	96	113	116	122	115	117	88
September	96	101	117	118	122	116	117	92
October	95	102	117	120	116	115	115	94
November	93	106	120	121	120	117	108	94
December	92	108	122	122	119	122	100	94

[1] Data for 1904 to 1916 from Special Bulletin No. 85, New York State Department of Labor, p. 45; data for 1917 to 1921 received from the New York Industrial Commission.

TABLE 5.—INDEX NUMBERS OF EMPLOYMENT IN REPRESENTATIVE FACTORIES IN WISCONSIN, BY QUARTERS, 1915 TO SECOND QUARTER, 1920, AND BY MONTHS, JULY, 1920 TO DECEMBER, 1921.[1]

[First quarter of 1915=100.]

Year and quarter.	Index number.
1915.	
First quarter	100
Second quarter	98
Third quarter	104
Fourth quarter	119
1916.	
First quarter	127
Second quarter	128
Third quarter	125
Fourth quarter	133
1917.	
First quarter	138
Second quarter	134
Third quarter	133
Fourth quarter	137
1918.	
First quarter	141
Second quarter	138
Third quarter	140
Fourth quarter	139
1919.	
First quarter	138
Second quarter	130
Third quarter	134
Fourth quarter	142

Year and quarter or month.	Index number.
1920.	
First quarter	147
Second quarter	142
July	144
August	142
September	138
October	131
November	122
December	113
1921.	
January	100
February	102
March	99
April	93
May	92
June	89
July	89
August	92
September	94
October	94
November	94
December	94

[1] Data received from the Wisconsin Industrial Commission.

TABLE 6.—NUMBER OF INDUSTRIAL WAGE EARNERS IN NEW HAMPSHIRE UNEMPLOYED AND WORKING PART TIME IN DECEMBER, 1920, ON JUNE 1, 1921, AND ON JANUARY 1, 1922.[1]

Industry.	Number of establishments.	Number of employees under normal conditions.		Number of employees idle on account of lack of orders.		Number of employees idle on account of other reasons.		Total number of unemployed.		Number of employees working part time.	
		Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
	December, 1920.										
Automobiles, garage and repairs	84	819	70	174	2	54	.....	228	2	63	2
Bakers and confectioners	28	267	80	41	4	1	.....	42	4	6	7
Bobbins	20	766	62	47	8	12	9	59	17	.....	.....
Boxes and box shooks	60	2,759	372	1,170	115	.....	.....	1,170	115	913	145
Cigars and tobacco	4	1,033	318	5	1	1,015	285	1,020	286	.....	.....
Clothing	15	143	764	84	592	1	.....	85	592	47	63
Composition novelties	4	407	251	239	210	.....	.....	239	210	88	21
Cooperage	14	955	27	59	1	202	3	261	4	98	.....
Cotton, worsted, and silk goods	33	15,485	13,036	5,142	3,810	217	39	5,359	3,849	3,778	2,629
Creamery products	10	63	7	3	.....	.....	.....	3	.....	.....	.....
Doors, sash, and blinds	9	350	8	84	.....	.....	.....	84	.....	3	.....
Excelsior	9	116	.....	53	.....	.....	.....	53	.....	9	.....
Fiberboard and leatherboard products	9	544	258	234	186	20	17	254	203	121	47
Flour and grain mills	11	177	26	12	.....	.....	.....	12	.....	.....	.....
Foundry and machine-shop products	66	4,616	839	834	352	57	.....	891	352	527	35
Furniture	23	1,103	84	312	10	17	1	329	11	243	3
Hosiery and knit goods	20	854	2,246	338	1,080	25	59	363	1,139	306	628
Laundries	46	204	392	24	49	2	5	26	54	12	40
Leather, dressed	18	1,239	260	640	162	15	.....	655	162	275	65
Light, heat, and power	21	636	53	4	.....	2	.....	6	.....	5	.....
Lumber, rough and finished	45	1,678	37	94	.....	125	.....	219	.....	14	.....
Miscellaneous	39	1,312	474	351	58	67	8	418	66	198	30
Monumental and granite works	30	1,026	6	500	.....	218	.....	718	.....	117	.....
Needles	8	362	576	184	326	.....	.....	184	326	107	126
Printing and binding	39	665	276	5	19	1	.....	6	19	11	13
Pulp and paper	27	7,281	314	586	87	.....	.....	586	87	2,044	93
Ship and boat building	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Shoes, slippers, and shoe findings	74	9,456	6,010	5,627	3,837	167	121	5,794	3,958	2,626	1,380
Steam and electric railroad repairs	20	2,185	20	21	.....	20	.....	41	.....	.....	.....
Wood novelties and wooden goods	53	1,460	345	556	119	26	33	582	152	324	47
Woolen goods	43	4,320	1,775	2,412	1,067	19	31	2,431	1,098	841	224
Total	[2]884	62,281	28,986	19,835	12,095	2,283	611	22,118	12,706	12,776	5,598
Total, males and females	.....	91,267		31,930		2,894		34,824		18,374	

[1] Data received from the New Hampshire Bureau of Labor in letters dated Feb. 23 and Apr. 13, 1922.
[2] Not including 60 establishments not reported.

TABLE 6.—NUMBER OF INDUSTRIAL WAGE EARNERS IN NEW HAMPSHIRE UNEMPLOYED AND WORKING PART TIME IN DECEMBER, 1920, ON JUNE 1, 1921, AND ON JANUARY 1, 1922—Continued.

Industry.	Number of establishments.	Number of employees under normal conditions.		Number of employees idle on account of lack of orders.		Number of employees idle on account of other reasons.		Total number of unemployed.		Number of employees working part time.	
		Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
		June 1, 1921.									
Automobiles, garage, and repairs	21	512	26	132	1	24	.....	156	1	54	.....
Bakers and confectioners	10	242	113	1	1	2	.....	3	1	1	2
Bobbins	15	470	45	166	14	.....	.....	166	14	216	25
Boxes and box shooks	60	2,783	368	984	99	7	.....	991	99	694	73
Cigars and tobacco	3	1,071	285	5	1	.....	.....	5	1	.....	.....
Clothing	15	456	822	63	186	3	8	66	194	88	24
Composition novelties	3	387	238	208	160	.....	.....	208	160	92	62
Cooperage	14	750	21	82	5	28	.....	110	5	220	10
Cotton, worsted, and silk goods	37	15,872	12,701	758	829	142	173	900	1,002	2,317	1,531
Creamery products	3	31	5	.....	.....	.....	.....	.....	.....	.....	.....
Doors, sash, and blinds	9	400	1	112	.....	.....	.....	112	.....	50	1
Excelsior	4	72	.....	39	.....	30	.....	69	.....	25	.....
Fiberboard and leatherboard products	10	631	246	171	53	.....	.....	171	53	302	135
Flour and grain mill	1	38	.....	.....	.....	.....	.....	.....	.....	.....	.....
Foundry and machine-shop products	65	4,704	914	1,501	281	63	12	1,564	293	1,840	236
Furniture	18	1,063	28	217	1	13	.....	230	1	122	1
Hosiery and knit goods	18	930	2,371	330	609	4	55	334	664	136	389
Laundries	24	134	302	3	32	.....	.....	3	32	7	30
Leather, dressed	14	1,160	266	445	155	.....	.....	445	155	172	31
Light, heat, and power	7	333	33	.....	.....	.....	.....	.....	.....	.....	.....
Lumber, rough and finished	23	1,356	24	614	7	242	.....	856	7	128	.....
Miscellaneous	34	1,069	477	251	142	.....	.....	251	142	190	137
Monumental and granite works	11	864	3	474	.....	.....	.....	474	.....	48	.....
Needles	9	231	398	51	187	.....	.....	51	187	62	47
Printing and binding	18	615	231	10	19	2	.....	12	19	78	23
Paper and pulp	30	6,325	658	742	68	401	.....	1,143	68	3,302	98
Shoes, slippers, and shoe findings	70	10,177	6,558	3,224	2,149	330	168	3,554	2,317	1,225	778
Steam and electric railroad repairs	14	2,047	21	397	9	420	.....	817	9	92	.....
Wood novelties and wooden goods	42	1,411	323	509	110	34	7	543	117	491	100
Woolen goods	43	4,258	1,831	249	173	77	43	326	216	256	143
Total	[3] 645	60,392	29,309	11,738	5,291	1,822	466	13,560	5,757	12,208	3,876
Total, males and females	.....	89,701		17,029		2,288		19,317		16,084	

[3] Not including 25 establishments not reporting.

TABLE 6.—NUMBER OF INDUSTRIAL WAGE EARNERS IN NEW HAMPSHIRE UNEMPLOYED AND WORKING PART TIME IN DECEMBER, 1920, ON JUNE 1, 1921, AND ON JANUARY 1, 1922—Concluded.

Industry.	Number of establishments.	Number of employees under normal conditions.		Number of employees idle on account of lack of orders.		Number of employees idle on account of other reasons.		Total number of unemployed.		Number of employees working part time.	
		Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
		January 1, 1922.									
Automobiles, garage and repairs	19	328	24	47	3	65	1	112	4	17	1
Bakers and confectioners	12	289	111	39	26	10	16	49	42	24	3
Bobbins	13	589	34	261	15	16	.....	277	15	156	9
Boxes and box shooks	57	2,659	315	775	60	21	.....	796	60	538	51
Cigars and tobacco	2	1,012	303	4	1	.....	.....	4	1	.....	.....
Clothing	14	103	702	17	162	.....	.....	17	162	8	88
Composition novelties	3	387	239	201	167	.....	.....	201	167	.....	.....
Cooperage	14	1,163	13	116	.....	20	3	136	3	100	.....
Cotton, worsted, and silk goods	30	15,719	12,296	952	728	39	41	991	769	1,528	1,464
Creamery products	3	33	5	.....	.....	5	1	5	1	3	1
Doors, sash, and blinds	9	404	1	70	.....	.....	.....	70	.....	5	.....
Excelsior	4	75	.....	32	.....	14	.....	46	.....	22	.....
Fiberboard and leatherboard products	10	594	188	94	6	.....	.....	94	6	234	82
Flour and grain mills	1	40	.....	.....	.....	.....	.....	1,430	168	.....	.....
Foundry and machine-shop products	64	4,793	465	1,402	165	28	3	.....	.....	1,124	68
Furniture	17	1,131	52	166	.....	20	.....	186	.....	144	2
Hosiery and knit goods	17	1,018	1,720	173	283	.....	.....	173	283	105	124
Laundries	24	137	295	3	21	.....	.....	3	21	8	20
Leather, dressed	14	1,151	208	327	67	.....	.....	327	67	39	12
Light, heat, and power	6	361	36	.....	.....	.....	.....	.....	.....	.....	.....
Lumber, rough and finished	22	1,307	28	500	1	36	25	536	26	54	.....
Miscellaneous	33	1,582	631	459	197	2	4	461	201	63	15
Monumental and granite works	11	774	2	536	.....	28	.....	564	.....	.....	.....
Needles	7	284	494	9	14	.....	.....	9	14	.....	.....
Paper and pulp	25	6,864	289	500	86	130	.....	630	86	1,881	14
Printing and binding	18	584	201	.....	.....	1	.....	1	.....	5	3
Shoes, slippers, and shoe findings	71	9,462	6,243	1,108	683	17	11	1,125	694	935	562
Steam and electric railroad repairs	13	2,012	12	161	.....	54	.....	215	.....	833	.....
Wood novelties and wooden goods	39	1,392	311	527	191	15	4	542	195	248	35
Woolen goods	43	4,341	1,778	850	312	7	10	857	322	708	245
Total	[1] 615	60,588	26,996	9,329	3,188	528	119	9,857	3,307	8,782	2,799
Total, males and females	.....	87,584		12,517		647		13,164		11,581	

[1] Not including 24 establishments not reporting.

ADDITIONAL COPIES
OF THIS PUBLICATION MAY BE PROCURED FROM
THE SUPERINTENDENT OF DOCUMENTS
GOVERNMENT PRINTING OFFICE
WASHINGTON, D. C.
AT
10 CENTS PER COPY