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CHAPTER II

THE NUMBER OF EMPLOYEES

How important was the reduction in the number of employees brought about by the decline in business activity occurring between 1920 and 1922? The object of this chapter is to answer the above question.

THE COMPARATIVE MEASURABILITY OF EMPLOYMENT AND UNEMPLOYMENT

It will be observed that the purpose is to measure change in the number working as employees rather than variations in the amount of unemployment. This form of stating the problem is imperative and not optional. Several statisticians have compiled satisfactory indices of unemployment but none has succeeded in measuring its absolute volume, and it is safe to say that none will ever obtain a quantitative statement of the extent of this malady which will successfully withstand the attacks of careful critics. The obstacle which prevents the accurate measurement of the quantity of unemployment is the fact that it is a condition subject to as many definitions as there are writers on the subject. This fact becomes apparent when we analyze the conditions that cause people to work or stop working.

Obviously the potential maximum of employment is very much higher than anything ever experienced by present-day Americans. Under conditions of extreme stress all able-bodied persons over seven years of age might work from twelve to fourteen hours daily. Household duties might be reduced to a fraction of their present extent and the entire population outside of the sick, infirm, and small children might devote part or all of the day to what the Census Bureau calls "gainful occupations." Under such circumstances, one could say that employment had reached a maximum. As the country returned to normal, there would, of course, be a tremendous decline in the volume of employment. Would all of this decline represent unemployment? If so, it follows that under normal conditions we experience perhaps fifty per cent of idleness. To most people, however, such a statement seems absurd. They will say that only those desiring employment can be classed as unemployed and that, when the emergency is past, the new percentage of unemployment must be based upon the number desiring work under normal conditions—in other words, that what is sought is a measure of *voluntary* unemployment.

Experience shows, however, that it is exceedingly difficult to ascertain just who is to be counted as desiring work and what conditions are to be considered normal. Thousands of persons are on the border line. Is the sick man to be counted as unemployed? If so, does he still continue in this status if he remains disabled for years? If he is unemployed, does the same hold true of the cripple who has never been able to work regularly?

These problems are not easy to solve, but they are simple as compared to those involving the relations of employment to pay and working conditions in different phases of the business cycle.

It will perhaps be easier to see this last problem in its true light if we consider in connection with it an analogous case in another field. When cotton prices fell sharply during the autumn of 1920, many a farmer felt that prices were too low and refused to sell his crop. True, he could market it readily enough if he were willing to sell for any price offered; but the price he could get commonly would not cover production costs and frequently its acceptance spelled ruin. Therefore, he held on, and much of his cotton remained on his farm unsold. His refusal to market his crop helped to check the price decline and probably prevented prices from falling as low as they otherwise would have done. If he was financially able, he may have held his cotton until prices rose again at the close of 1921. If, however, he was poor, he was forced to sell earlier—even at a serious loss. Eventually, however, either a forced sale, the rising market price, or the deterioration of the old cotton caused his unsold stock to disappear.

Is there not a close parallel between this situation and what occurred in the labor market at about the same dates? It is a well-known fact that, in the latter part of 1920, there was a serious diminution in the volume of orders for factory products with a resulting collapse in the prices of these goods. Since labor is the second largest item of factory costs, employers could not retain their entire force at the old wage level. Not only must they reduce purchases of raw materials: they must also either cut wages or lay off their less essential employees. At a much lower wage rate, many employers could have afforded to manufacture for stock and many more workers could have been retained on the pay rolls. Most of the employees, however, were not disposed to accept a cut when the option was offered—and it was not offered in all cases, for many employers, knowing that a wage reduction meant trouble, closed their factories without stopping to discuss the matter. Like the cotton planters, wage earners very generally held out for the old rates. As a result, many were laid off—in other words, their labor, like the cotton on the Southern plantation, remained unsold. In economic parlance, the price bid by the employer fell below the price asked by the employee, and unemployment was the inevitable result.

Are we to consider the idleness of the employees under such circum-

stances voluntary or involuntary? The cotton farmer held his cotton because he thought it unwise to accept a serious loss when the prospects were that he would get a better price later. The laborers deemed it bad policy to accept a cut because they feared it would be hard to reestablish the wage rates which they had fought hard to win.¹

Eventually, as has been noted, poverty compelled many of the cotton farmers to sell their cotton below cost of production. Table LVII indicates that, by the beginning of 1921, factory laborers were also being compelled by hard times to market their labor at lower prices, and that this process went on throughout the year, for wage rates continued slowly to decline. Table V shows that, by the last quarter of 1921, this process, coupled presumably with a reduction in the stocks of manufactured products on hand, had caused the number of employees at work in manufacturing to increase noticeably. By the spring of 1922 there was, then, less labor unsold, just as on the cotton plantation there was less cotton unsold. In more technical terms, we may say that either when the price at which the employee holds his labor falls below the price which the employer is willing to pay, or when the employer's demand price for labor rises above the holding price of the employee, unemployment disappears.

Whether it was wise or unwise for the cotton farmers to hold their cotton or the factory employees to stand out for the old wage rates must remain largely a matter of opinion. The statistician is not concerned, however, with the merits or demerits of any policy. The only question at issue here is whether the cyclical unemployment of 1921 was voluntary or involuntary. Does the evidence not indicate that many workers had a measure of choice between unemployment and wage maintenance, just as cotton planters had a measure of choice between selling and holding for a better price? Probably, in particular sections, some grades of cotton could not be sold for any price. Presumably, likewise, in certain localities, given classes of workers might not have been able to sell their labor at any wage, but there are no data showing the number of such cases. Without such figures, how can we measure the amount of unemployment which is involuntary?

The crucial difficulty in measuring the per cent of involuntary unemployment is, then, the fixing of a base. The evidence shows that this base is practically indeterminate. The best method of dealing with the problem seems therefore to be to cut the Gordian knot and to treat of employment

¹ Colonel M. C. Rorty, one of the Bureau's directors, comments as follows: "Laborers might not necessarily lose in the long run if, in times of depression, they were prompt to accept wage liquidations. There is a theory, which is at least worthy of consideration, that the principal reason for the greater severity of business crises in modern times is that wage earners are better organized and hold out for a longer time against necessary wage liquidations."

rather than unemployment. Here we have a really tangible quantity. No elusive base is involved. We can deal with a unit susceptible of statistical measurement—a week's work, a day's work, or an hour's work for one employee. We can ascertain the changes that have taken place from time to time in the total number of days or of employee hours worked and in this way we can measure definitely one of the effects of the business cycle upon the employees of the country. It is this method that is pursued in the following pages.

DO EMPLOYEES SHIFT FROM ONE INDUSTRY TO ANOTHER?

Pay roll statistics have been compiled for a number of years by the Massachusetts Bureau of Statistics for Massachusetts factories. In recent years, similar data have been collected elsewhere. These records have shown large fluctuations in the numbers employed. It has, however, always been a matter of doubt as to whether diminutions in the numbers on the factory pay rolls did or did not represent a falling off in the total volume of employment. Might it not be true that the decline in factory employment represented mainly a shift of employees from the manufacturing field to other industries? Hitherto, no information has been available which would enable one to answer this question. In the present investigation, the attempt has been made to throw light upon this subject from two different directions. First, inquiries have been made to ascertain whether given individuals have shifted their occupations from one industry to another. Second, employers in all important industries have been canvassed to see whether any industry has taken on the employees laid off by the factories. The results of the first inquiry are shown in Tables II, III, and IV.

The chief impression received from a careful study of Table II is one of stability. Manifestly there has been no tendency worth mentioning for the sons or daughters to change occupations because of the fluctuations of the business cycle. The number of factory workers in this group declined by less than a dozen persons. The only shift of moment was the movement of those not gainfully occupied into the ranks of professional service, commerce, and trade, and this change is explained mainly by the fact that a considerable number of boys and girls finished school during the period and began clerking in stores or teaching school.

Table III gives a similar record for the families of entrepreneurs. Those reporting this information for their families are for the most part men doing business on a small scale. They have given quarter by quarter the occupations followed by themselves or by members of their respective families. This table shows even less evidence of change than does Table II. Evidently, the period 1920 to 1922 witnessed no important shift in the industrial affiliations of the members of the families of the reporting entrepreneurs.

EMPLOYMENT HOURS AND EARNINGS

TABLE II

THE NUMBER OF MEMBERS OF 8,477 REPRESENTATIVE^a FARMERS' FAMILIES WHO WERE 16 YEARS OF AGE OR OVER IN 1922 AND THE INDUSTRIES IN WHICH THEY HAD BEEN EMPLOYED

SEX	INDUSTRY	1920				1921				1922			
		First quarter	Second quarter	Third quarter	Fourth quarter	First quarter	Second quarter	Third quarter	Fourth quarter	First quarter	Second quarter	Third quarter	Fourth quarter
MALE	All Industries	14,643	14,643	14,643	14,643	14,642	14,641	14,639	14,637	14,637	14,637	14,637	14,637
	Agriculture	11,671	12,312	12,998	11,810	11,717	12,324	12,909	11,786	11,739	11,739	11,739	11,739
	Extraction of Minerals	30	24	28	37	38	32	44	46	51	46	51	51
	Factory Production	100	90	93	107	100	73	83	94	88	94	88	88
	Construction	102	99	113	104	85	113	134	124	98	134	124	98
	Other Hand Trades	161	125	134	152	163	125	138	138	165	138	165	165
	Transportation	197	174	192	198	201	182	191	197	198	197	198	198
	Commerce and Trade	273	220	232	277	295	249	265	311	325	265	311	325
	Finance	64	58	60	69	67	63	66	75	70	66	75	70
	Public and Professional Service	406	278	221	380	405	287	225	423	420	287	225	423
	Domestic and Personal Service	22	16	29	23	24	22	31	26	26	31	26	26
	Not Gainfully Occupied	1,484	1,126	423	1,371	1,423	1,057	444	1,290	1,336	1,057	444	1,290
	Industry Unknown	133	121	125	115	124	108	122	127	121	108	122	127
		All Industries	6,614	6,614	6,612	6,612	6,611	6,611	6,611	6,609	6,611	6,611	6,609
	Agriculture	26	29	43	29	28	32	48	32	34	32	48	32
Extraction of Minerals	15	15	12	15	15	16	13	19	18	16	13	19	
Factory Production	15	15	12	15	15	16	13	19	18	16	13	19	
Construction	25	27	27	27	27	26	28	27	27	26	28	27	
Other Hand Trades	26	26	30	29	29	31	31	31	31	31	31	31	
Transportation	126	128	145	134	130	134	152	145	137	134	152	145	
Commerce and Trade	9	8	9	10	11	10	8	8	8	10	8	8	
Finance	603	553	228	650	664	604	245	716	722	604	245	716	
Public and Professional Service	64	67	79	71	75	74	88	81	84	74	88	81	
Domestic and Personal Service	5,683	5,723	6,004	5,610	5,996	5,651	5,965	5,513	5,508	5,651	5,965	5,513	
Not Gainfully Occupied	37	38	35	37	36	33	33	37	40	33	33	37	
Industry Unknown													
	All Industries	6,614	6,614	6,612	6,612	6,611	6,611	6,611	6,609	6,611	6,611	6,609	

^a Information obtained from U. S. Agricultural Department's Crop Reporters. All Sections of the Continental United States represented in approximately correct proportions. Many farmers failed to report the occupations of other members of their families; hence the relatively small number of women accounted for otherwise than as "Not Gainfully Occupied."

THE NUMBER OF EMPLOYEES

TABLE III

THE INDUSTRIES ENGAGED IN DURING 1920 AND 1921 BY PERSONS WHO IN 1922 WERE MEMBERS OF THE FAMILIES OF REPORTING ENTREPRENEURS (EXCLUDING FARMERS) AND WHO WERE THEN 16 YEARS OF AGE OR OVER.*

Sex	Industry	1920				1921				1922	
		First quarter	Second quarter	Third quarter	Fourth quarter	First quarter	Second quarter	Third quarter	Fourth quarter	First quarter	
MALE	All Industries	1,415	1,415	1,415	1,414	1,414	1,414	1,415	1,415	1,415	
	Agriculture.....	163	175	219	168	165	177	220	172	169	
	Extraction of Minerals.....	4	6	4	4	4	6	5	5	5	
	Factory Work.....	147	145	147	145	148	148	150	148	149	
	Building and Construction.....	70	73	74	73	68	69	72	68	68	
	Other Hand Trades.....	92	90	92	89	91	92	93	90	90	
	Transportation.....	14	15	16	16	15	16	17	16	16	
	Commerce and Trade.....	615	615	626	616	616	616	629	622	621	
	Finance.....	19	19	19	18	20	19	19	20	18	
	Public and Professional Service.....	22	22	24	23	22	21	22	17	17	
	Domestic and Personal Service.....	86	87	91	89	87	89	92	89	88	
	Not Gainfully Occupied.....	163	148	82	157	159	143	74	148	152	
	Industry Unknown.....	20	20	21	19	19	18	22	20	22	
	FEMALE	All Industries	487	487	487	487	487	487	487	487	487
		Agriculture.....	1	1	3	2	1	1	3	2	1
Factory Work.....		17	16	18	16	16	16	18	16	16	
Other Hand Trades.....		12	12	12	12	12	12	13	13	13	
Transportation.....		2	2	2	2	2	2	2	2	2	
Commerce and Trade.....		70	70	72	70	71	71	72	70	72	
Finance.....		3	3	3	5	3	3	5	3	3	
Public and Professional Service.....		37	37	36	39	39	39	36	41	40	
Domestic and Personal Service.....		29	31	32	31	31	33	35	32	31	
Not Gainfully Occupied.....		290	289	283	284	288	287	282	285	286	
Industry Unknown.....		26	26	24	25	24	23	21	23	23	

* Females working on the home farm are classed as "Not Gainfully Occupied."

TABLE IV

**THE INDUSTRIAL ATTACHMENTS OF 658 PERSONS WHO WERE EMPLOYEES
AT LEAST PART OF THE TIME IN 1920 OR 1921 AND WHO WERE
OVER 15 YEARS OLD IN 1922**

	1920	1921-1922				
	Mar. Apr. May	Mar. Apr. May	June July Aug.	Sept. Oct. Nov.	Dec. Jan. Feb.	
MALE EMPLOYEES						
All Industries.....	516	534	535	536	542	
Agriculture.....	34	34	40	34	33	
Extraction of Minerals.....	39	41	42	40	39	
Factories.....	130	131	129	132	135	
Building and Construction.....	42	45	48	49	50	
Other Hand Trades.....	9	11	11	9	10	
Transportation.....	62	57	66	61	63	
Commerce and Trade.....	75	90	96	92	90	
Finance.....	16	18	19	20	21	
Public and Professional Service.....	31	36	32	36	39	
Domestic and Personal Service.....	23	25	30	31	30	
Industry Unknown.....	10	9	11	9	10	
Not Gainfully Occupied.....	45	37	11	23	22	
FEMALE EMPLOYEES						
All Industries.....	142	145	147	148	147	
Factories.....	28	30	32	30	31	
Building and Construction.....	2	2	1	1	1	
Other Hand Trades.....	3	4	4	4	5	
Transportation.....	10	11	12	10	10	
Commerce and Trade.....	20	23	24	26	25	
Finance.....	7	7	9	10	10	
Public and Professional Service.....	21	23	23	26	26	
Domestic and Personal Service.....	23	24	26	30	30	
Industry Unknown.....	2	1	1	1	1	
Not Gainfully Occupied.....	26	20	15	10	8	

Table IV records the changes in the industrial attachments of 658 employees scattered over the United States. Those who were out of work were assigned for this classification to the last industry in which they had been employed. This accounts for the small number reported as not gainfully occupied. Those doing clerical work of an unspecified nature were assigned arbitrarily to "Commerce and Trade." When this fact is considered, the table seems simply to emphasize the same points brought out by the two previously considered—namely, that the only change of moment has been occasioned by boys and girls finishing school and going to work.

The combined evidence of the three tables is that the transition from a boom to a depression is accompanied by practically no shift of workers

from one industrial field to another. If this is true, employees laid off in an industry must, for the most part, either remain idle or go to work on their own account—often at such casual work as canvassing or peddling. More light upon the validity of this conclusion will be furnished by Tables V, VI, VII, and VIII, which show the average numbers of employees on the pay rolls of the various industries in each quarter during the period.

CHANGES IN THE NUMBERS EMPLOYED IN VARIOUS INDUSTRIES

In the last column of these tables are entered figures intended to show the decline in employment brought about by the cycle. Since many of the industries under consideration are seasonal and since no data are available which make it possible to eliminate the seasonal swings, it has been necessary to compare the figures for corresponding quarters only, in order to avoid gross error in the case of seasonal industries. In such instances, the procedure followed has been first to ascertain the maximum difference between corresponding quarters and then to divide this difference by the number employed in the first quarter of the pair chosen. While frequently this method will produce results somewhat smaller than the actual maximum decline, the error is not likely to be large enough to vitiate the comparison of one industry with another.

When the figures show an increase from one year to another, the rule followed has been to take the minimum increase between corresponding quarters. This method seems to give a fair comparison, for, in most instances, the quarters compared are the same as those used in measuring the maximum decline in several other industries. Practically the same procedure has been followed in computing the last column of a large number of the tables in this volume.

The figures that appear in this and many of the succeeding tables are not the totals of the samples sent in, but rather the estimated totals for the country as a whole. The items have been given weights representing the estimated numbers employed in the respective industrial fields in order that errors due to faulty sampling may be reduced to a minimum.¹ This procedure enables us to form an intelligible picture of what really happened to the number employed in the United States as a whole.

Table V indicates that 5,033,000 fewer workers were on the pay rolls in the early part of 1922 than were employed in the third quarter of 1920. However, part of this decline was seasonal. If we compare the third quarters, we discover that there were 4,102,000 fewer people at work in 1921 than in 1920, or about one-seventh of all who had been employed at the earlier date.

¹ As is shown in Table I, in certain important industries reports were received for relatively few employees; while in other less important fields, many more employees were accounted for.

EMPLOYMENT HOURS AND EARNINGS

TABLE V

AN ESTIMATE FOR THE CONTINENTAL UNITED STATES OF THE TOTAL NUMBER OF EMPLOYEES ON THE PAY ROLLS OF ALL ENTERPRISES OF WHATEVER SIZE

INDUSTRY	THOUSANDS OF EMPLOYEES ON THE PAY ROLLS												MAXIMUM CYCLICAL DECLINE (Per Cent)
	1920				1921				1922				
	First quarter	Second quarter	Third quarter	Fourth quarter	First quarter	Second quarter	Third quarter	Fourth quarter	First quarter	Fourth quarter			
All Industries.....	27,232	28,378	29,180	27,416	24,828	24,598	25,078	24,774	24,147	24,774	24,147	24,147	14.06
Agriculture.....	1,370	1,871	2,300	1,724	1,355	1,823	2,204	1,666	1,372	1,666	1,372	1,372	4.17
Extraction of Minerals.....	1,047	1,072	1,120	1,077	1,011	960	944	862	819	862	819	819	26.88
Building and Construction.....	1,240	1,492	1,600	1,307	1,104	1,211	1,415	1,404	1,320	1,404	1,320	1,320	18.83
Other Hand Trades.....	548	575	550	568	554	581	565	572	561	565	572	561	.70 ^d
Finance.....	390	399	400	396	398	382	380	373	374	380	373	374	6.75
Public and Professional Service.....	3,075	3,022	3,000	3,047	3,120	2,973	2,940	3,161	3,269	2,940	3,161	3,269	2.00
Domestic and Personal Service.....	2,683	2,763	2,820	2,781	2,741	2,753	2,786	2,701	2,661	2,786	2,701	2,661	2.88
All Transportation.....	3,169	3,243	3,420	3,352	2,847	2,739	2,865	2,922	2,674	2,865	2,922	2,674	16.23
Steam Railways.....	2,032	2,044	2,200	2,101	1,724	1,599	1,710	1,741	1,586	1,710	1,741	1,586	22.27
Other Transportation.....	1,136	1,199	1,220	1,251	1,123	1,140	1,155	1,181	1,088	1,155	1,181	1,088	5.60
Commerce and Trade.....	2,562	2,606	2,600	2,656	2,507	2,527	2,520	2,582	2,477	2,520	2,582	2,477	3.08
Wholesale.....	288	303	300	286	274	284	284	273	265	284	273	265	6.27
Retail.....	2,274	2,303	2,300	2,370	2,233	2,242	2,236	2,309	2,212	2,236	2,309	2,212	2.78
All Factories.....	11,149	11,334	11,370	10,507	9,189	8,648	8,460	8,532	8,621	8,460	8,532	8,621	25.59
Food, Drink, and Tobacco.....	1,048	1,015	1,120	1,075	881	858	959	952	861	959	952	861	15.94
Lumber and Its Products.....	985	1,062	1,050	912	839	928	915	852	855	915	852	855	14.82
Metals and Metal Products.....	5,104	5,213	5,200	4,743	3,901	3,305	2,979	3,020	3,238	2,979	3,020	3,238	42.85
Paper and Printing.....	639	636	640	666	619	602	599	623	620	599	623	620	6.46
Mineral Products ^b	878	881	910	892	793	748	750	763	760	748	763	760	17.80
Textile and Leather Products ^c	2,495	2,525	2,450	2,220	2,155	2,206	2,257	2,322	2,287	2,257	2,322	2,287	14.65

^a Vehicles, railroad cars, and all products not elsewhere recorded are included here.^b Includes chemical, stone, glass, and clay products.^c Includes clothing of all kinds.^d Increase = minimum for corresponding quarters.

Though one is impressed by the very great seasonal fluctuations in agricultural employment, there is no evidence of any startling change brought about in that field by the business cycle. There was apparently a slight tendency for farmers to hire fewer employees during the depression, but in corresponding quarters the number of employees diminished by only about 100,000. In the light of this evidence there is then no reason to believe that the farmers took on any considerable number of the workers whom the factories, mines, and railways laid off. Since the sample of farms secured is large enough to be representative, this conclusion seems to rest on a firm foundation and strengthens the indications given by the figures pertaining to entrepreneurs' families that the depression was accompanied by a striking decline in the total volume of employment in the urban industries of the United States. When the agricultural industry is excluded, the decline in other fields is shown to be almost exactly 4,000,000, which accords very well indeed with the estimates by experts made for the President's Conference on Unemployment in September, 1921.¹

In Tables VI, VII, and VIII, the pay-roll records are divided according to the size of the enterprise as measured by the number of workers employed. These tables show that concerns having over 100 employees in the first quarter of 1920 laid off 3,300,000 out of the 4,100,000 who were removed from the pay rolls, while two-thirds of the remaining reduction occurred in enterprises employing 21 to 100 persons at the date mentioned and this despite the fact that about one-third of all employees work for employers hiring fewer than 21 persons. Of the seventeen industrial groups for which records appear in the table, only five showed a cyclical falling off in numbers employed of as much as 6 per cent for enterprises in which fewer than 21 employees were working in 1920, while, in the large scale enterprises, 12 out of the 17 register declines of more than 10 per cent.

Although these records give unequivocal evidence that it is primarily the large concern which is affected by a business depression, it is by no means easy to determine why this should be the case. It is possible that the small employer keeps less accurate accounts, and since he is not in a position to judge as to what size of working force is most advantageous, the number of persons on his pay roll depends largely upon custom rather than upon the size of current profits. Perhaps the small employer, being well acquainted with his employees, is so much interested in the welfare of the latter that his relationships with them are not governed primarily by purely business considerations. It may be that the demand for the products of small establishments is inherently more stable than that for the output of the larger concerns. It is not unlikely that the smaller concern, as compared to the larger one, is usually in closer touch with the consumer of its products—for

¹ See pages 38 and 47 to 58 of the *Report* of that Conference.

EMPLOYMENT HOURS AND EARNINGS

TABLE VI

AN ESTIMATE FOR THE CONTINENTAL UNITED STATES OF THE TOTAL NUMBER OF EMPLOYEES ON THE PAY ROLLS OF ALL ENTERPRISES HAVING FEWER THAN 21 EMPLOYEES

Industry	THOUSANDS OF EMPLOYEES ON THE PAY ROLLS												MAXIMUM CYCLICAL DECLINE (Per Cent)		
	1920				1921				1922						
	First quarter	Second quarter	Third quarter	Fourth quarter	First quarter	Second quarter	Third quarter	Fourth quarter	First quarter	Second quarter	Third quarter	Fourth quarter			
All Industries.....	8,656	9,449	10,110	9,273	8,555	9,235	9,843	9,162	8,739	8,555	9,235	9,843	9,162	8,739	2.64
Agriculture.....	1,231	1,670	2,120	1,562	1,199	1,667	2,059	1,524	1,246	1,199	1,667	2,059	1,524	1,246	2.88
Extraction of Minerals.....	55	58	60	53	53	78	83	67	58	53	78	83	67	58	3.64
Building and Construction.....	443	524	570	522	406	453	546	555	503	406	453	546	555	503	13.55
Other Hand Trades.....	277	298	280	289	277	293	280	284	283	277	293	280	284	283	1.73
Finance.....	146	154	150	151	153	155	155	155	153	153	155	155	155	153	0.65 ^d
Public and Professional Service.....	1,582	1,582	1,600	1,471	1,545	1,490	1,526	1,526	1,637	1,545	1,490	1,526	1,526	1,637	5.82
Domestic and Personal Service.....	1,762	1,832	1,920	1,856	1,817	1,841	1,908	1,789	1,756	1,817	1,841	1,908	1,789	1,756	3.61
All Transportation.....	377	403	400	453	366	390	395	444	360	366	390	395	444	360	3.23
Steam Railways.....															
Other Transportation.....	377	403	400	453	366	390	395	444	360	366	390	395	444	360	3.23
Commerce and Trade.....	1,620	1,646	1,650	1,674	1,627	1,642	1,640	1,662	1,624	1,620	1,642	1,640	1,662	1,624	0.72
Wholesale.....	49	50	50	51	50	50	50	50	49	49	50	50	50	49	2.00
Retail.....	1,570	1,597	1,600	1,623	1,577	1,591	1,590	1,612	1,574	1,570	1,591	1,590	1,612	1,574	0.68
All Factories.....	1,165	1,283	1,360	1,242	1,111	1,227	1,251	1,156	1,121	1,111	1,227	1,251	1,156	1,121	8.01
Food, Drink, and Tobacco.....	226	249	300	268	225	238	283	253	231	226	238	283	253	231	5.67
Lumber and Its Products.....	430	475	470	404	364	435	394	339	344	364	435	394	339	344	16.17
Metals and Metal Products ^a	100	113	140	121	106	98	115	107	101	106	98	115	107	101	30.00
Paper and Printing.....	170	174	170	185	186	185	180	195	184	186	185	180	195	184	1.08
Mineral Products ^b	121	130	140	143	124	133	137	137	134	124	133	137	137	134	4.20
Textile and Leather Products ^c	119	142	140	120	107	138	142	125	127	107	138	142	125	127	10.08

^a Vehicles, railroad cars, and all products not elsewhere recorded are included here.

^b Includes chemical, stone, glass, and clay products.

^c Includes clothing of all kinds.

^d Increase—minimum for corresponding quarters.

^e Enterprises are classified according to the number of employees in the first quarter of 1920.

TABLE VII

AN ESTIMATE FOR THE CONTINENTAL UNITED STATES OF THE TOTAL NUMBER OF EMPLOYEES ON THE PAY ROLLS OF ALL ENTERPRISES HAVING 21 TO 100^c EMPLOYEES

INDUSTRY	THOUSANDS OF EMPLOYEES ON THE PAY ROLLS								MAXIMUM CYCLICAL DECLINE (Per Cent)	
	1920				1921					1922
	First quarter	Second quarter	Third quarter	Fourth quarter	First quarter	Second quarter	Third quarter	Fourth quarter		First quarter
All Industries.....	4,213	4,536	4,630	4,457	4,190	4,125	4,084	4,098	3,956	14.56
Agriculture.....	113	164	130	118	119	125	111	112	114	23.78
Extraction of Minerals.....	147	133	140	146	153	153	154	89	79	46.26
Building and Construction.....	379	462	530	476	473	449	458	435	389	13.58
Other Hand Trades.....	166	163	160	165	163	168	166	169	162	3.57
Finance.....	95	96	100	101	102	105	103	103	102	2.86
Public and Professional Service.....	391	387	400	383	364	372	391	385	362	7.42
Domestic and Personal Service.....	644	634	600	619	622	614	581	617	612	4.97
All Transportation.....	197	211	220	212	197	196	202	192	192	9.43
Steam Railways.....	197	211	220	212	197	196	202	192	192	9.43
Other Transportation.....	197	211	220	212	197	196	202	192	192	9.43
Commerce and Trade.....	391	400	400	409	385	383	378	388	371	5.50
Wholesale.....	97	98	100	96	93	91	91	91	89	11.00
Retail.....	294	302	300	312	292	292	287	297	282	4.81
All Factories.....	1,691	1,886	1,950	1,827	1,615	1,561	1,541	1,607	1,573	20.97
Food, Drink, and Tobacco.....	250	253	280	297	232	229	247	264	225	11.79
Lumber and Its Products.....	271	309	300	243	229	245	260	245	251	20.71
Metals and Metal Products ^a	232	382	420	348	263	192	175	202	216	58.33
Paper and Printing.....	169	169	170	176	160	155	155	167	164	8.82
Mineral Products ^b	247	243	250	257	240	231	232	246	243	7.20
Textile and Leather Products ^c	522	532	530	506	492	509	472	483	474	11.28

^a Vehicles, railroad cars, and all products not elsewhere recorded are included here.
^b Includes chemical, stone, glass, and clay products.
^c Includes clothing of all kinds.
^d Enterprises are classified according to the number of employees in the first quarter of 1920.

EMPLOYMENT HOURS AND EARNINGS

TABLE VIII

AN ESTIMATE FOR THE CONTINENTAL UNITED STATES OF THE TOTAL NUMBER OF EMPLOYEES ON THE PAY ROLLS OF ALL ENTERPRISES HAVING OVER 100^c EMPLOYEES

INDUSTRY	THOUSANDS OF EMPLOYEES ON THE PAY ROLLS										MAXIMUM CYCLICAL DECLINE (Per Cent)	
	1920					1921						1922
	First quarter	Second quarter	Third quarter	Fourth quarter	First quarter	Second quarter	Third quarter	Fourth quarter	First quarter	Fourth quarter		
All Industries	14,363	14,392	14,440	13,687	12,082	11,240	11,151	11,515	11,452	11,452	22.78	
Agriculture	26	37	50	44	38	32	34	30	13	13	65.79 ^f	
Extraction of Minerals	845	881	920	878	806	729	707	705	683	683	25.76	
Building and Construction	418	506	500	310	226	310	412	414	427	427	45.93	
Other Hand Trades	105	114	110	114	114	120	119	119	117	117	2.63 ^d	
Finance	149	149	150	145	143	124	122	116	119	119	22.67	
Public and Professional Service	1,102	1,053	1,000	1,193	1,211	1,111	1,022	1,250	1,271	1,271	2.20 ^d	
Domestic and Personal Service	277	298	300	306	302	298	297	295	293	293	4.25	
All Transportation	2,595	2,630	2,800	2,686	2,284	2,153	2,268	2,287	2,121	2,121	24.25	
Steam Railways	2,032	2,044	2,200	2,101	1,724	1,599	1,710	1,741	1,586	1,586	27.91	
Other Transportation	563	586	600	586	560	555	558	546	535	535	10.83	
Commerce and Trade	552	560	550	573	496	502	532	532	482	482	10.36	
Wholesale	141	156	150	139	132	143	143	132	127	127	8.33	
Retail	410	404	400	434	364	359	359	400	356	356	11.14	
All Factories	8,294	8,165	8,060	7,438	6,463	5,861	5,668	5,769	5,927	5,927	31.66	
Food, Drink, and Tobacco	572	513	540	511	424	390	429	435	405	405	29.20	
Lumber and Its Products	285	279	280	264	247	248	261	268	260	260	8.42	
Metals and Metal Products ^a	4,771	4,719	4,640	4,273	3,582	3,015	2,689	2,711	2,921	2,921	43.18	
Paper and Printing	300	294	300	306	274	263	264	261	273	273	14.71	
Mineral Products ^b	511	509	520	491	429	385	381	379	383	383	27.12	
Textile and Leather Products ^c	1,854	1,832	1,780	1,594	1,556	1,560	1,644	1,715	1,685	1,685	16.07	

^a Vehicles, railroad cars, and all products not elsewhere recorded are included here.

^b Includes chemical, stone, glass, and clay products.

^c Includes clothing of all kinds.

^d Increase—minimum for corresponding quarters.

^e Enterprises are classified according to the number of employees in the first quarter of 1920.

^f Sample too small to be dependable.

example, makes more of its goods to order—and that this more direct connection lessens the tendency to accumulate too large stocks or to overproduce in periods when business men in general are unduly optimistic. Perhaps in times of depression, when “hand-to-mouth” buying is the rule, the small concern profits by taking numerous small orders, none of which would justify the attention of a large plant that had shut down or reduced its force. Without further research, it is impossible to say whether the tendency of large employers to give less stable employment than do the smaller concerns arises from some of the causes just suggested or whether it has an entirely different origin. The discovery that unemployment is directly correlated with the size of the enterprise opens up, however, a whole vista of surmises concerning the probable history of unemployment and its relation to industrial organization. Did cyclical unemployment come into being only after the advent of concerns hiring thousands of employees? Is the business cycle an outgrowth of industrial concentration? Such questions are alluring—but, unfortunately, this interesting field of speculation lies beyond the scope of the present inquiry.

Although the tables record a wide divergence between different industries in the extent of the decline, nearly all of them are alike in showing at the time of the depression a reduction in total numbers employed. True, the miscellaneous hand trades show the numbers on the pay rolls increased, but the gain was entirely negligible. Agriculture, public, professional, and domestic service, miscellaneous transportation enterprises, retail and wholesale concerns, paper and printing establishments, and financial institutions all succeeded in retaining the bulk of their employees. Mines, steam railways, factories, and building enterprises were, as a rule, hard hit. Factories engaged in turning out metal products, vehicles, and the like suffered most of all, the medium-sized establishments in this group reducing their working forces by more than one-half. The large factories included in this category laid off more than forty per cent of their working forces and conditions were reported to be as bad in medium-sized mines and in large scale construction enterprises.

The Bureau of the Census compiled for this study more detailed tables than it is possible to present in the limited space here available and it is worth while to note a few points therefrom in regard to the effect of the cycle in different geographical sections of the United States. The decline in employment in financial institutions was confined almost entirely to large scale enterprises in the northeastern part of the country. The South laid off a larger proportion of workers in textile and chemical mills than did other regions. In most industries, however, the effects of the cycle appear to have been much the same throughout the United States.

THE NUMBER OF EMPLOYEES ON FARMS

Statistics concerning employment in agriculture have heretofore been almost non-existent, and the information secured by this inquiry appears to be so thoroughly representative that it is worth while to present the results in some detail. Table V shows that the farmers of the country, even though they apparently did not allow the cycle to affect materially the number of men hired, nevertheless employed about 900,000 more workers in the third than in the first quarter of each year. Seasonal unemployment among agricultural workers represents, then, a quantity of the first magnitude.

Table IX records the average number of employees working on a single farm in each of the quarters under consideration. The fact should be kept in mind, however, that the Crop Reporters of the United States Department of Agriculture are not typical farmers but employ far more help than do the average of their neighbors. That such is the case is made evident by the figures in Table IX. This table shows that, in 1920, the average Crop Reporter kept in his employ 1.46 men. If every farmer employed an equal number of male workers, the total for the United States would amount to about nine million hired men. The Census of Occupations for 1920, however, shows that on January 1 of that year there were only 1,843,307 males classed as hired agricultural laborers. Though the Census count, because of the season of the year when made, may be too low to represent the average it is, nevertheless, clear that the typical Crop Reporter hires three to five times as much labor as do farmers in general. The figures in Tables IX to XII, therefore, cannot be considered representative as to absolute numbers but there is, notwithstanding, every reason to believe that they are satisfactory criteria of the relative conditions existing in different sections of the United States; for it is highly probable that, in regions where much help is hired, the Crop Reporters hire many employees, and vice versa.

Table IX shows how much greater are the seasonal variations in the North than in the South—and the striking seasonal changes characterizing the Rocky Mountain section. This table also makes the fact clear that, as a rule, farmers in the extreme East and West hire much more help than do those in the Mississippi Valley, the New England or Pacific farmer finding work for approximately three times as many assistants as does the farmer in the North Central section.

In general, five times as many men as women are employed on the farms of the United States. Of the male employees, about as many are hired by the month as by the day, and of the female employees nearly twice as many are hired by the day as by the week. As might be expected, day

TABLE IX

NUMBER OF HIRED EMPLOYEES WORKING ON THE AVERAGE FARM OWNED BY A UNITED STATES DEPARTMENT OF AGRICULTURE CROP REPORTER

SECTION	SEX OF WORKERS	WORKING BY	1920				1921				1922
			First quarter	Second quarter	Third quarter	Fourth quarter	First quarter	Second quarter	Third quarter	Fourth quarter	First quarter
ENTIRE UNITED STATES	Total		1.30	1.77	2.24	1.67	1.28	1.78	2.19	1.62	1.33
	Male	Month	0.63	0.82	0.88	0.73	0.62	0.81	0.86	0.71	0.63
	Male	Day	0.45	0.66	1.00	0.67	0.45	0.68	0.99	0.66	0.48
	Female	Day	0.13	0.19	0.24	0.18	0.12	0.19	0.22	0.16	0.13
	Female	Week	0.09	0.10	0.12	0.09	0.09	0.10	0.12	0.09	0.09
NEW ENGLAND	Total		1.77	2.43	3.52	2.51	1.82	2.53	3.66	2.54	1.79
	Male	Month	0.83	1.01	1.15	0.99	0.85	1.08	1.16	1.02	0.86
	Male	Day	0.62	1.02	1.75	1.07	0.65	1.05	1.82	1.07	0.63
	Female	Day	0.16	0.21	0.39	0.26	0.15	0.20	0.45	0.25	0.13
	Female	Week	0.16	0.19	0.23	0.19	0.17	0.20	0.23	0.20	0.17
MIDDLE ATLANTIC	Total		1.35	1.89	2.61	1.75	1.38	1.93	2.53	1.78	1.45
	Male	Month	0.86	1.02	1.24	0.99	0.86	1.06	1.19	0.98	0.89
	Male	Day	0.33	0.59	0.85	0.57	0.35	0.60	0.91	0.60	0.41
	Female	Day	0.07	0.17	0.28	0.08	0.07	0.18	0.25	0.09	0.07
	Female	Week	0.09	0.11	0.24	0.11	0.10	0.09	0.18	0.11	0.08
EAST NORTH CENTRAL	Total		0.65	1.00	1.27	0.83	0.62	1.01	1.21	0.85	0.62
	Male	Month	0.38	0.56	0.59	0.45	0.37	0.55	0.57	0.45	0.36
	Male	Day	0.18	0.32	0.54	0.28	0.16	0.34	0.50	0.29	0.17
	Female	Day	0.05	0.06	0.08	0.05	0.05	0.06	0.08	0.06	0.05
	Female	Week	0.04	0.06	0.06	0.05	0.04	0.06	0.06	0.05	0.04
WEST NORTH CENTRAL	Total		0.61	1.02	1.63	0.95	0.59	1.00	1.48	0.87	0.62
	Male	Month	0.42	0.64	0.72	0.53	0.40	0.59	0.66	0.49	0.40
	Male	Day	0.11	0.26	0.76	0.31	0.12	0.29	0.67	0.29	0.14
	Female	Day	0.02	0.04	0.05	0.05	0.02	0.05	0.06	0.03	0.02
	Female	Week	0.06	0.08	0.10	0.06	0.05	0.07	0.09	0.06	0.06

TABLE IX—(CONT.)

**NUMBER OF HIRED EMPLOYEES WORKING ON THE AVERAGE FARM OWNED BY A UNITED STATES DEPARTMENT
OF AGRICULTURE CROP REPORTER**

SECTION	SEX OF WORKERS	WORKING BY	1920				1921				1922
			First quarter	Second quarter	Third quarter	Fourth quarter	First quarter	Second quarter	Third quarter	Fourth quarter	First quarter
SOUTH ATLANTIC	Both	Total	2.95	3.31	3.33	3.10	2.64	3.21	3.14	2.89	2.59
	Male	Month	1.24	1.39	1.35	1.28	1.15	1.31	1.28	1.19	1.12
	Male	Day	1.05	1.20	1.25	1.13	0.96	1.21	1.21	1.10	0.96
	Female	Day	0.49	0.54	0.55	0.51	0.35	0.51	0.47	0.42	0.33
	Female	Week	0.17	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
EAST SOUTH CENTRAL	Both	Total	1.82	2.30	2.29	2.00	1.81	2.29	2.33	2.07	2.04
	Male	Month	0.77	0.93	0.90	0.81	0.80	0.94	0.90	0.88	0.85
	Male	Day	0.72	0.88	0.91	0.80	0.69	0.88	0.98	0.79	0.81
	Female	Day	0.26	0.40	0.40	0.32	0.24	0.38	0.37	0.32	0.28
	Female	Week	0.07	0.09	0.08	0.07	0.08	0.09	0.08	0.08	0.10
WEST SOUTH CENTRAL	Both	Total	1.42	1.86	1.97	1.94	1.41	1.86	1.91	1.81	1.60
	Male	Month	0.43	0.51	0.52	0.52	0.43	0.51	0.50	0.50	0.44
	Male	Day	0.70	0.94	1.04	1.04	0.73	0.95	1.04	0.98	0.82
	Female	Day	0.15	0.26	0.28	0.24	0.12	0.26	0.23	0.20	0.21
	Female	Week	0.14	0.15	0.13	0.14	0.13	0.14	0.14	0.13	0.13
MOUNTAIN	Both	Total	0.64	1.26	2.25	1.07	0.63	1.22	2.23	1.04	0.68
	Male	Month	0.44	0.77	1.03	0.58	0.42	0.74	0.99	0.55	0.44
	Male	Day	0.13	0.39	1.06	0.39	0.13	0.39	1.08	0.40	0.16
	Female	Day	0.04	0.06	0.09	0.07	0.05	0.06	0.10	0.07	0.05
	Female	Week	0.03	0.04	0.07	0.03	0.03	0.03	0.05	0.02	0.03
PACIFIC	Both	Total	1.82	2.57	3.95	2.53	1.83	2.70	3.93	2.57	1.83
	Male	Month	0.90	1.16	1.29	0.95	0.92	1.21	1.39	0.99	0.92
	Male	Day	0.82	1.23	2.26	1.32	0.82	1.29	2.19	1.37	0.81
	Female	Day	0.04	0.09	0.31	0.20	0.03	0.11	0.25	0.14	0.04
	Female	Week	0.06	0.09	0.09	0.06	0.06	0.09	0.10	0.07	0.06

work by females is most common in the East and the South. The North Central and Rocky Mountain farmers employ little female help of any kind.

Table X shows the way in which the various classes of farm labor are distributed on the farms of the Crop Reporters of the United States Department of Agriculture.

The figures indicate that one employee of either class is the most common number hired. Scarcely one Crop Reporter in a hundred hires as many as ten laborers from either class of employees. But this merely illustrates the well known fact that farming remains a small scale industry.

While it is probable that females are, as a rule, hired by the day to do a different type of work on farms from that performed by those employed by the week, the duties of male agricultural workers are much the same whether they work by the day or by the month. It has appeared worth while, therefore, to construct Table XI which classifies the farms of the United States on the basis of all male employees at work without regard to the form of contract existing. This table shows that the modal Crop Reporter in every section of the United States hires an average of less than two employees and that, even in rush seasons, one-third of these farmers hire no men.

Tables XII and XIII portray the distribution of female workers on the farms of the United States. Table XII indicates that nine-tenths of the Crop Reporters of the country hire no female labor by the day. As might be expected, the number of farms utilizing female day workers is proportionately much larger in the South and East than in other sections of the United States. The most common number of workers, however, does not rise above 2 in any section of the country.

The farm of the novel, with its inevitable "hired girl," seems to be anything but typical in the United States of today. According to Table XIII, only about one Crop Reporter in sixteen can boast of such an assistant to his wife, and, for reasons previously stated, it is probable that female help is still more rare on the average farm. In this regard no section of the country seems to differ widely from any other. The North Central region shows the greatest seasonal swing, indicating that the hired girl is there somewhat more closely connected with the rush of summer work than is the case in other sections.

An extremely small proportion of farmers' wives employ on the average as many as two hired girls, even in the rush seasons. Among Crop Reporters' wives in the entire United States, not even one in sixty had as many as two female assistants hired by the week. It appears that whether or not farm servants ever have been numerous, at the present time they constitute a rare species.

TABLE XI

FARMS OF CROP REPORTERS FOR THE UNITED STATES DEPARTMENT OF AGRICULTURE CLASSIFIED ACCORDING TO THE TOTAL NUMBER OF MALE EMPLOYEES PER FARM

GEOGRAPHICAL SECTION	AVERAGE NUMBER PER FARM DURING QUARTER	NUMBER OF FARMS					
		1920				1921	1922
		First quarter	Second quarter	Third quarter	Fourth quarter	Second quarter	First quarter
ENTIRE UNITED STATES	None	4,692	3,719	3,278	4,217	3,738	4,564
	Under 1	437	541	701	549	538	483
	1 up to 2	1,620	1,899	1,702	1,595	1,864	1,687
	2 " " 3	666	935	973	734	913	648
	3 " " 4	261	378	470	347	374	284
	4 " " 6	271	372	533	363	411	253
	6 " " 10	147	205	319	233	208	165
	10 and over	120	160	233	169	162	120
	Total	8,214	8,209	8,209	8,207	8,208	8,204
NEW ENGLAND	None	326	226	166	277	210	296
	Under 1	41	60	82	51	56	53
	1 up to 2	187	188	168	173	188	195
	2 " " 3	84	113	117	84	115	81
	3 " " 4	37	56	69	50	59	42
	4 " " 6	41	52	67	53	61	41
	6 " " 10	14	25	43	29	26	21
	10 and over	11	20	29	24	25	12
	Total	741	740	741	741	740	741
MIDDLE ATLANTIC	None	274	198	153	211	192	247
	Under 1	24	34	52	41	27	27
	1 up to 2	138	160	139	149	161	159
	2 " " 3	53	68	87	59	72	55
	3 " " 4	13	30	29	26	36	18
	4 " " 6	19	24	42	21	24	12
	6 " " 10	5	9	15	14	11	7
	10 and over	6	8	15	10	8	7
	Total	532	531	532	531	531	532
EAST NORTH CENTRAL	None	901	695	602	797	690	890
	Under 1	66	83	110	91	91	83
	1 up to 2	335	432	395	356	429	344
	2 " " 3	100	151	179	119	144	86
	3 " " 4	32	47	82	40	50	36
	4 " " 6	14	32	54	35	40	13
	6 " " 10	6	11	24	11	10	2
	10 and over	1	4	8	3	2	1
	Total	1,455	1,455	1,454	1,452	1,456	1,455
WEST NORTH CENTRAL	None	1,182	897	699	1,011	926	1,175
	Under 1	92	114	185	133	113	93
	1 up to 2	381	497	444	394	473	385
	2 " " 3	89	176	207	136	168	88
	3 " " 4	31	61	100	60	59	26
	4 " " 6	19	43	94	45	42	22
	6 " " 10	9	12	44	19	19	12
	10 and over	7	11	36	12	10	6
	Total	1,810	1,811	1,809	1,810	1,810	1,807

