PART III

RELATIVE FLUCTUATIONS IN PER CAPITA EARNINGS

CHAPTER VII

RELATIVE FLUCTUATIONS IN FULL-TIME EARNINGS

Turning, now, from consideration of absolute amounts of earnings, to the present discussion of relative fluctuations in those earnings, we pass to a phase of the subject which is not only no less important than the subject of the amounts of earnings, but one which can be examined with a great deal more confidence, and the accuracy of the results of which can be depended upon much more surely than is the case, unfortunately, with the estimates of absolute amounts. This and the two following chapters are exclusively concerned with relative, or index, numbers. In other words, we are dealing with the degree and direction of the *changes* that have taken place in average earnings. The statement which was stressed in the introductory chapter should be repeated here, that the results presented in this section of the book reflect not average changes in earnings, but something quite different—changes in average earnings. For some purposes it is entirely proper to say that the changes which have taken place in industries A, B, C, and D were increases of 3 per cent, 5 per cent, 10 per cent, and 20 per cent, respectively, and to proceed to average those four percentages and say that the average change in earnings in those four industries was the average of the four percentages, or 7.6 per cent. But this is not the procedure underlying the averages used in this monograph. The operation upon which our averages are based can be illustrated by the following example: In 1899 the average earnings of wage earners in the four industries A, B, C, and D were, let us say, $500. In 1909 the average earnings of the wage earners in the same four industries were, say, $575 or a percentage change in average earnings for these industries of 11.5 per cent. To show the change that has taken place in each of the industries A, B, C, and D, by the method we have adopted, we would ascertain the average in 1899 and 1909 in each of the industries and find for each industry the ratios between the 1909 averages and the 1899 average. These ratios are the changes in average earnings for each of these industries. Of course, having ascertained these changes in each of the four industries by this method, it would be possible to strike an average from them. That result would represent an average change in earnings, which is precisely what the present index numbers are not. In other parts of this analysis it has seemed advisable, it is true, to resort to the somewhat dubious device of averag-

ing averages, but where it is done it is because of the fact that no more suitable alternative seemed to be available. With one or two exceptions, to which attention is called in the appropriate place, totals for all industries combined have never been obtained by averaging the results for the selected industries. In each case the totals for all industries, or for all regions, are based upon all of the manufacturing wage earners included in the census and are computed by finding the aggregate amounts of earnings received by particular groups at different periods and ascertaining the ratios between these amounts.

The three chapters which are devoted to relative fluctuations in per capita earnings deal, respectively, with full-time money earnings, actual money earnings, and the purchasing power of actual money earnings. This present chapter is preliminary to the more important discussion of earnings in the more accurate sense of the word, as they are reported in the two following chapters.

LIMITATIONS OF DATA ON FULL-TIME EARNINGS

Full-time earnings, as already remarked, are something of an anomaly, and, in reality, rather comparable with weekly or monthly rates of wages than with earnings. A brief presentation of the results, however, is made in this chapter in the belief that they are not entirely without importance, as some industries do rather closely approximate, in the actual earnings received by their employees, the hypothetical full-time amount which would be received if all attached to those industries worked regularly the year around. These more or less hypothetical full-time earnings, then, reflect the changes which take place in rates of pay. In other words, fluctuations in full-time earnings are fluctuations from which one of our two chief factors of influence, namely, unemployment, and changes in rates, is eliminated, the one eliminated in this case, of course, being unemployment. The result is that the changes in average earnings shown in this chapter are changes which are caused, primarily if not entirely, by revision of wage rates. The figures in this chapter reflect the direction and degree to which, assuming 100 per cent employment, annual earnings have been affected by changes in rates. It is not forgotten that there is still another factor for which discount must be made, namely, the changing level of prices, which are to be eliminated by deflating our full-time earnings to show the purchasing power. The latter figure, assuming 100 per cent employment, would then indicate the changes in the purchasing power of earnings resultant upon the single factor of changes in wage rates.

What has been said may possibly be made clearer by consulting Table 78, which is a summary of index numbers of annual earnings per capita for each year from 1899 to 1927. This present chapter deals with the sorts of fluctuations shown in the first and third columns, that

is to say, with hypothetical full-time earnings, for the most part dealing with these in the form of money earnings rather than real earnings. The following chapter has to do with such figures as those shown in the second column, and the third and last chapter deals with such figures as those shown in the last column of the table. The trend of nominal full-time earnings reflects the situation which would have prevailed had there been no unemployment—a situation which is more or less closely approximated by those industries which have succeeded in coming somewhere near to the accomplishment of full employment for all attached to industry. Such a trend, however, can not be taken as indicative of the change which has taken place in the

TABLE 78.—INDEX NUMBERS OF ESTIMATED AMOUNTS OF ANNUAL EARNINGS, PER CAPITA, IN MANUFACTURING INDUSTRIES, IN THE UNITED STATES, EACH YEAR: 1899–1927

YEAR	INDEXES OF ANNUAL EARNINGS PER CAPITA				YEAR	INDEXES OF ANNUAL EARNINGS PER CAPITA			
	Nominal (current dollars)		"Real" (purchasing power at 1914 prices)			Nominal (current dollars)		"Real" (purchasing power at 1914 prices)	
	Hypothetical full time	Actual	Hypothetical full time	Actual		Hypothetical full time	Actual	Hypothetical full time	Actual
1899	73	77	99	105	1914	100	100	100	100
1900	76	78	99	103	1915	102	106	104	108
1901	77	82	98	105	1916	118	133	110	125
1902	79	86	98	108	1917	136	149	106	116
1903	81	86	96	103	1918	179	192	114	122
1904	82	84	99	101	1919	199	210	111	118
1905	84	93	101	112	1920	239	258	117	126
1906	87	99	101	115	1921	204	182	116	103
1907	90	101	99	110	1922	198	203	119	122
1908	89	86	103	99	1923	218	229	129	146
1909	89	97	103	111	1924	217	227	128	135
1910	91	97	99	106	1925	220	243	130	143
1911	92	93	97	98	1926	224	249	130	144
1912	95	103	99	107	1927	224	238	131	140
1913	99	107	100	108					

welfare of manufacturing wage earner, even assuming that he has had full employment. Even those among the wage earners who have had full employment certainly do not have a purchasing power at their command which was three times as great in 1925 as it was in 1899. The real benefit, or burden, experienced by wage earners from year to year, as a result of changes in wage rates, will be reflected in the data only if current dollar sums have been deflated to terms of constant purchasing power. When that is done we have a series of relative amounts, such as those in the third column of Table 78. It is believed that this series represents, for all industries and regions combined, the real changes for better or for worse that could be made effective by the purchasing power of the full-time annual

earnings of manufacturing wage earners. Instead of a tripling of purchasing power, there is evident during the 29 years, an increase from an index number of 99 in 1899 to 131 in 1927, or an increase of 32 per cent. Very obviously, however, the intervening period of the quarter century was not one of slow, consistent increase; there was, in fact, no appreciable gain in purchasing power between 1900 an 1914. Since 1914 there evidently has been a considerable increase in purchasing power. This means that the actual conditions as to wage rates would have operated to bring about, on the basis of full employment, the kind and degree of change which we have just described during the period under review. Even granting this full employment, however, it should be noted that increases in wage rates were not sufficient to prevent very large, and for the wage earner no doubt disastrous, declines in purchasing power. The more outstanding examples are the declines shown between 1907 and 1908 and between 1920 and 1921. It is to be noted, on the other hand, that the last five years of our record show that, barring unemployment, changes in wage rates have tended to produce increases in purchasing power to a degree which is unprecedented during the period since 1899.

The above discussion is realistic only in very small part; that is to say, only in respect to changes in rates of wages. In other respects, and chiefly in regard to the all-important factor of unemployment and irregular employment, it is a discussion distinctly metaphysical. The figures which are given elsewhere, reflecting changes in employment and still more those reflecting estimated fractions of full employment, indicate how important—and tragic—an influence is unemployment. Consequently, it is not believed worth while to do more in this chapter than to present briefly the results which have been obtained for changes in full-time earnings.

REGIONAL VARIATIONS

A summary for the different geographic regions and divisions is given in Table 79. It is evident that, although the amounts of per capita earnings are much greater in the West and Northeast than in the South, the degree of increase in full-time money earnings, at least during the period from 1899 to 1921, has been greater in the South than in either of the other two regions of the country; the increase being about 300 per cent in the South and the corresponding increases in the Northeast and the West being 282 per cent and 250 per cent, respectively. It is to be remembered that these figures mean nothing in respect to the increase in actual money earnings and still less in regard to the increase in real earnings, but they indicate that full-time rates of wages have tended to increase in those sections of the country where they stood most in need of

increase. The degree of increase was greatest in the South, next in the North, and least of all in the West, where the amounts of full-time, as well as actual earnings, have all along been the greatest.

TABLE 79.—INDEX NUMBERS OF FULL-TIME MONEY EARNINGS, PER CAPITA, IN THE UNITED STATES, BY GEOGRAPHIC REGIONS AND DIVISIONS, CENSUS YEARS: 1899–1923

[1914=100]

REGION	1899	1904	1909	1914	1919	1921	1923
UNITED STATES	73	82	89	100	199	204	218
NORTHEAST	75	82	89	100	198	205	228
New England	79	85	92	100	194	198	214
Middle Atlantic	78	85	92	100	208	213	250
East North Central	69	79	86	100	197	204	221
West North Central	71	82	89	100	177	201	195
SOUTH	67	81	87	100	211	200	201
South Atlantic	67	79	86	100	223	205	206
East South Central	71	85	87	100	204	196	202
West South Central	68	85	86	100	187	190	181
WEST	70	87	95	100	172	180	182
Mountain	76	91	92	100	159	176	171
Pacific	68	85	95	100	176	181	185

VARIATIONS AMONG INDUSTRIES

In Table 80 are given the relatives of hypothetical full-time money earnings per capita for each of 12 selected industries in each year since 1914. These figures may have no special use other than to call attention to the wide variation even in full-time earnings between different industries and to the large fluctuations in each of these industries between successive years. A summary by industrial divisions and groups is given in Table 81, which exhibits no less wide variations in full-time money earnings than those just shown for different geographic divisions. Whereas, for all industries combined, full-time money earnings increased slightly less than threefold between 1899 and 1921, in some industries this degree of increase was much less and in others it was much greater. In the case of tobacco manufactures the increase was only a little over twofold; in iron and steel, also, the increase was less than in industry as a whole; that is to say, it was about 250 per cent. On the other hand, the rate of increase in chemicals and allied products was somewhat more than threefold, considerably above the average, and this was also true of the industry group, "Vehicles for land transportation."

The changes in full-time money earnings per capita in each of our 41 selected industries are shown for the period from 1899 to 1923 in Table 82. For "All industries" the per capita full-time money earnings of wage earners increased from an index number of 73 in 1899 to 204 in 1921 and 215 in 1923. It is clear that in the case of these selected industries there have been even wider variations than

TABLE 80.—INDEX NUMBERS OF (HYPOTHETICAL) FULL-TIME MONEY EARNINGS, PER CAPITA, IN THE UNITED STATES, ALL INDUSTRIES COMBINED, AND FOR EACH OF 12 SELECTED INDUSTRIES, EACH YEAR: 1914–1923

[Census years in bold-faced type. 1914=100]

YEAR	All industries	Woolen goods	Cotton goods	Silk goods, including throwsters	Knit goods	Clothing, men's	Boots and shoes, not including rubber boots and shoes
1914	**100**	**100**	**100**	**100**	**100**	**100**	**100**
1915	102	97	97	100	99	100	96
1916	118	120	113	112	112	112	108
1917	136	150	135	132	128	142	139
1918	179	185	194	165	164	180	185
1919	**199**	**211**	**213**	**197**	**183**	**226**	**182**
1920	239	268	260	220	217	284	206
1921	**204**	**226**	**206**	**216**	**206**	**244**	**203**
1922	198	219	196	198	202	231	196
1923	**215**	**238**	**220**	**232**	**217**	**242**	**202**

YEAR	Automobiles	Iron and steel, steel works, and rolling mills	Cars, steam-railroad, not including operations of railroad companies	Paper and wood pulp	Tobacco, cigars and cigarettes	Leather, tanned, curried, and finished
1914	**100**	**100**	**100**	**100**	**100**	**100**
1915	----------	95	97	94	90	98
1916	----------	124	96	107	117	117
1917	109	148	133	120	142	126
1918	128	186	174	154	161	171
1919	**176**	**225**	**196**	**198**	**169**	**214**
1920	205	261	237	250	208	236
1921	**184**	**183**	**197**	**201**	**170**	**208**
1921	199	177	171	198	167	208
1923	**200**	**218**	**211**	**208**	**173**	**222**

TABLE 81.—INDEX NUMBERS OF FULL-TIME MONEY EARNINGS, PER CAPITA, IN THE UNITED STATES, BY INDUSTRIAL DIVISIONS AND GROUPS, CENSUS YEARS: 1899–1923

[1914=100]

INDUSTRY GROUP	1899	1904	1909	1914	1919	1921	1923
All groups	73	82	89	100	199	204	218
I.—Food, drink, and tobacco	76	84	91	100	183	199	197
Food and kindred products	74	83	91	100	188	209	206
Liquors and beverages	77	84	88	100	152	176	164
Tobacco manufactures	83	90	90	100	181	185	186
II.—Textiles, garments, and leather	82	90	100	100	221	235	243
Textiles and products	74	81	92	100	205	217	225
Leather and its finished products	74	83	91	100	188	203	204
III.—Lumber and its products[1]	71	80	88	100	191	185	200
IV.—Paper and printing[2]	72	81	89	100	169	208	215
V.—Stone, clay, glass, and chemicals	72	80	89	100	193	207	216
Chemicals and allied products	71	81	86	100	207	218	222
Stone, clay, and glass products	72	85	90	100	170	198	210
VI.—Metals, metal products, miscellaneous	68	74	81	100	179	180	193
Iron and steel and their products	76	82	91	100	203	188	215
Metals and metal products, other than iron and steel	80	87	92	100	182	188	205
Vehicles for land transportation	63	71	80	100	186	196	213
Railroad repair shops	80	87	93	100	204	232	212
Miscellaneous industries	75	81	89	100	205	204	212

[1] Same as the census group "Lumber and its remanufactures."
[2] Same as the census group under the same title.

are shown in the larger and more inclusive groups of industries, which are made up of consolidations of the selected industries and a very much larger number of less important industries in cognate groups.

TABLE 82.—INDEX NUMBERS OF FULL-TIME MONEY EARNINGS, PER CAPITA, BY SELECTED INDUSTRIES, FOR ALL SEX AND AGE GROUPS COMBINED, CENSUS YEARS: 1899–1923

INDUSTRY	1899	1904	1909	1914	1919	1921	1923
All industries	73	82	89	100	199	204	218
Bread and other bakery products	75	86	96	100	181	216	213
Flour-mill and gristmill products	81	82	88	100	180	197	189
Confectionery	75	81	87	100	178	206	215
Slaughtering and meat packing	78	86	91	100	206	207	201
Liquors, malt	76	84	88	100	154	185	179
Mineral and soda waters	81	88	92	100	165	196	198
Tobacco, cigars and cigarettes	83	87	90	100	169	170	173
Carpets and rugs, other than rag	83	88	99	100	226	268	293
Shirts	81	84	93	100	177	199	200
Clothing, men's	75	83	93	100	226	244	242
Clothing, women's	72	81	93	100	216	235	243
Cotton manufactures	74	79	91	100	213	206	220
Dyeing and finishing textiles, exclusive of that done in textile mills	84	85	94	100	200	222	223
Knit goods	74	77	87	100	183	206	217
Silk goods, including throwsters	74	78	89	100	197	216	232
Woolen and worsted goods	75	81	89	100	211	226	238
Boots and shoes, not including rubber boots and shoes	75	84	91	100	182	203	202
Leather, tanned, curried, and finished	76	83	91	100	214	208	222
Furniture	73	81	90	100	181	206	216
Lumber and timber products	72	91	87	100	205	173	192
Lumber, planing-mill products, not including planing mills connected with sawmills	69	81	89	100	164	191	200
Paper and wood pulp	69	81	89	100	198	201	208
Printing and publishing, book and job	72	81	89	100	167	218	223
Printing and publishing, newspapers and periodicals	69	80	88	100	155	210	244
Chemicals		80	87	100	192	184	195
Petroleum refining	72	78	92	100	199	213	203
Brick and tile, terra-cotta, and fire-clay products	66	81	90	100	183	199	217
Glass	78	89	87	100	172	191	188
Iron and steel, blast furnaces	61	70	83	100	229	203	208
Iron and steel, steel works and rolling mills	73	78	90	100	225	183	218
Foundry and machine-shop products	77	85	92	100	192	191	212
Smelting and refining, copper, lead, and zinc	78	89	93	100	168	157	175
Automobile bodies and parts		74	87	100	184	192	211
Automobiles	70	72	77	100	176	184	200
Cars, steam-railroad, not including operations of railroad companies	66	78	82	100	196	197	211
Railroad repair shops—electric	88	90	91	100	177	204	199
Railroad repair shops—steam	80	87	93	100	205	235	215
Agricultural implements	67	74	79	100	172	184	184
Rubber goods	64	71	85	100	210	204	213
Shipbuilding, steel	70	76	82	100	209	197	197
Electrical machinery, apparatus, and supplies	78	85	91	100	181	194	207

The unreality of figures which ignore unemployment is very strikingly indicated here, since on the face of these data earnings appear to have been higher in 1921 than in 1919. This necessitates reemphasis on the fact that these full-time earnings are what might be more accurately described as "annual rates of pay." What is brought out by the figures is that in most of these industries *rates* either did not

suffer a net decline, or continued to advance, through at least the first part of the period from 1919 to 1921. The figures already given for 12 selected industries for each year indicate that most of this gain took place not in the period of depression, but in practically all of the industries, between the year 1919 and the peak year of prosperity, 1920. In every one of the 12 industries shown in Table 80 as a matter of fact, even rates decreased between 1920 and 1921, so that in Table 82 the apparent increase in rates between 1919 and 1921 is something of an illusion and reflects increases in rates which took place in the intercensal year 1920.

Some notion of the differences which have prevailed in the trend of wages in identical industries in different parts of the country may be had from the figures of Table 83, which gives for two leading States the relatives of full-time money earnings per capita in each of the 24 selected industries. The only purpose that is served by the figures of Table 83 is to indicate that even within the same industry changes in rates have differed from one State to another. Thus in men's clothing it would appear that there has been a greater increase in full-time earnings in Illinois than in New York. Similarly, there appears to have been a greater increase in full-time earnings in cotton manufactures in North Carolina than in Massachusetts; a greater increase in silk goods in Pennsylvania than in New Jersey; a greater increase in the furniture industry in Michigan than in New York; a greater increase in newspaper printing and publishing in Illinois than in New York; a much greater increase in the glass industry in West Virginia than in Pennsylvania; a considerably greater increase in rates in the electrical machinery, apparatus, and supplies industry in Illinois than in New York.

TABLE 83.—INDEX NUMBERS OF FULL-TIME MONEY EARNINGS (MALE WAGE EARNERS) IN 24 SELECTED INDUSTRIES, IN SELECTED STATES: 1899–1921

[1904=100]

INDUSTRY AND STATE	1899	1904	1909	1914	1919	1921
Tobacco, cigars and cigarettes:						
Florida	86	100	101	107	166	166
Pennsylvania	99	100	103	106	215	211
Clothing, men's:						
New York	98	100	109	112	283	299
Illinois	81	100	96	119	277	317
Clothing, women's:						
New York	94	100	116	123	279	305
Illinois	72	100	109	119	238	253
Cotton manufactures:						
Massachusetts	95	100	112	121	244	247
North Carolina	82	100	125	143	354	303
Knit goods:						
Pennsylvania	95	100	109	132	246	294
New York	98	100	119	128	237	275
Shirts:						
New York	101	100	115	117	230	264
Pennsylvania	90	100	108	113	178	203
Silk goods:						
Pennsylvania	85	100	121	141	278	319
New Jersey	98	100	119	135	202	278

crease in per capita earnings. Furthermore, there will have been no decrease in earnings even for the unskilled labor which was introduced into the industry. Their earnings may have remained the same, but the effect of their introduction into the industry, in

TABLE 99.—RELATIVE FLUCTUATIONS IN "REAL" EARNINGS, PER CAPITA, IN THE UNITED STATES, BY SELECTED INDUSTRIES, CENSUS YEARS: 1899–1925

[1914=100]

INDUSTRY	1899	1904	1909	1914	1919	1921	1923	1925
All industries				100				
Bread and other bakery products	98	112	120	100	109	121	128	129
Flour-mill and gristmill products	106	106	109	100	109	111	115	116
Confectionery	97	91	98	100	102	109	124	133
Slaughtering and meat packing	108	113	111	100	135	118	140	135
Liquors, malt	102	104	101	100	88	91	116	------
Mineral and soda waters	108	109	101	100	95	97	129	------
Tobacco, cigars and cigarettes	113	107	104	100	96	96	106	109
Carpets and rugs, other than rag	112	104	118	100	122	141	180	164
Shirts	109	99	111	100	96	105	122	108
Clothing, men's	101	98	111	100	122	129	148	130
Clothing, women's	96	96	111	100	117	124	149	142
Cotton manufactures	100	92	104	100	117	112	130	120
Dyeing and finishing textiles, exclusive of that done in textile mills	113	101	112	100	108	117	138	130
Knit goods	99	91	103	100	99	109	134	127
Silk goods, including throwsters	90	92	106	100	106	114	143	138
Woolen and worsted goods	87	99	116	100	112	126	159	138
Boots and shoes, not including rubber boots and shoes	107	103	113	100	108	111	129	116
Leather, tanned, curried, and finished	108	103	113	100	128	111	168	122
Furniture	103	101	111	100	108	114	155	166
Lumber and timber products	102	114	107	100	122	96	139	145
Lumber, planing-mill products, not including planing mills connected with sawmills	97	101	109	100	97	106	144	153
Paper and wood pulp	98	99	109	100	117	107	141	135
Printing and publishing, book and job	102	99	109	100	100	129	153	154
Printing and publishing, newspapers and periodicals	97	98	108	100	93	124	148	156
Chemicals	------	100	102	100	110	91	126	127
Petroleum refining	118	94	103	100	110	101	127	128
Brick and tile, pottery, terra-cotta, and fire-clay products	87	106	117	100	117	111	158	156
Glass	107	104	91	100	99	95	123	121
Iron and steel, blast furnaces	95	90	112	100	146	97	154	139
Iron and steel, steel works and rolling mills	114	100	121	100	143	87	161	152
Foundry and machine-shop products	118	108	121	100	120	93	152	150
Smelting and refining, copper, lead, and zinc	111	112	114	100	98	68	119	110
Automobile bodies and parts	------	84	102	100	101	79	134	145
Automobiles	93	81	91	100	97	75	128	134
Cars, steam-railroad, not including operations of railroad companies	92	88	92	100	123	92	153	138
Railroad repair shops—electric	124	109	114	100	105	90	137	136
Railroad repair shops—steam	112	105	117	100	122	104	147	137
Agricultural implements	95	89	101	100	105	96	127	124
Rubber goods	90	86	110	100	129	107	150	160
Shipbuilding, steel	99	91	105	100	128	103	136	134
Electrical machinery, apparatus, and supplies	110	102	116	100	110	102	145	146

the absence of separate reports of the wage payments to them, is that the industry appears as one in which per capita earnings have declined.

It is in this sort of situation that there is real danger in the interpretation of the figures. It is therefore of prime importance to

CHAPTER VIII

CHANGES IN PER CAPITA MONEY EARNINGS

This chapter and the following one deal with changes in earnings in the proper and important sense of the word earnings. They are concerned, that is to say, with index numbers which represent changes which have taken place in the amounts of earnings estimated to have been actually received, taking into account the amount of time lost out of full time by unemployment, underemployment, irregular employment, etc., as accurately as it has been possible to determine those factors. In making this unemployment discount, by multiplying full-time earnings by the ratios of actual to full employment, described in Chapters XV and XVI, we have intended to take into account not only the unemployment of those on pay rolls, but also the unemployment experienced by those workers in manufacturing industry who were completely out of employment, and who yet remained attached to their respective industries; that is to say, the result of our discount produces an estimated amount of actual earnings *per capita of wage earners attached to industry* and the index numbers presented are index numbers of changes in the earnings of all those attached to manufacturing industry. In this chapter the index numbers presented are for per capita money earnings; in the following chapter are given the deflated relatives indicating changes in real earnings, per capita, of wage earners attached to industry.

By means of the method of interpolation of intercensal years, elsewhere described, it has been possible to construct annual indices of per capita money earnings for manufacturing industries. This series of relatives on the 1914 base is presented in Table 84. The

TABLE 84.—INDEX NUMBERS OF ACTUAL ANNUAL MONEY EARNINGS, PER CAPITA, IN THE UNITED STATES, ALL INDUSTRIES COMBINED, EACH YEAR: 1899–1927

[Census years in bold-faced type. 1914=100]

YEAR	Index of money earnings	YEAR	Index of money earnings	YEAR	Index of money earnings	YEAR	Index of money earnings
1899	77	1907	101	**1914**	**100**	**1921**	182
1900	78	1908	86	1915	106	1922	203
1901	82	**1909**	97	1916	133	**1923**	220
1902	86	1910	97	1917	149	1924	227
1903	86	1911	93	1918	192	**1925**	243
1904	84	1912	103	**1919**	210	1926	249
1905	93	1913	107	1920	258	1927	238
1906	99						

figures show that, since the first of this century, money earnings have increased about threefold, the greater part of that increase having taken place since the opening of the Great War in Europe. The trend between 1899 and 1927 while predominantly upward, has been by no means uniformly so. There are one or two marked drops in earnings reflected in the figures, the more important of which are the declines which took place between 1907 and 1909 and between 1920 and 1921. These declines, it should be remembered, are the result chiefly of unemployment and irregular employment; that is to say, the trend in rates throughout the period has been practically an unbroken rise during the quarter century, as was explained in the preceding chapter.

REGIONAL FLUCTUATIONS

A summary for census years of the relative fluctuations in per capita money earnings for different parts of the country is given in Table 85, in which earnings are classified by geographic regions and divisions. It will be remembered that the *amounts* of per capita earnings were highest in the West, next highest in the Northeast, and lowest in the southern region of the country. Table 85 indicates

TABLE 85.—INDEX NUMBERS OF MONEY EARNINGS, PER CAPITA, BY GEOGRAPHIC REGIONS AND DIVISIONS, ALL INDUSTRIES COMBINED, CENSUS YEARS: 1899–1923

REGION	1899	1904	1909	1914	1919	1921	1923
UNITED STATES	77	84	97	100	210	182	229
NORTHEAST	77	83	96	100	232	176	240
New England	81	87	99	100	227	170	225
Middle Atlantic	80	86	99	100	243	183	263
East North Central	71	81	92	100	230	175	232
West North Central	73	83	95	100	207	172	205
SOUTH	71	83	94	100	223	179	227
South Atlantic	71	80	93	100	235	183	232
East South Central	75	87	94	100	216	175	228
West South Central	72	87	93	100	197	169	204
WEST	75	89	102	100	182	161	205
Mountain	81	93	99	100	168	158	193
Pacific	72	87	106	100	186	162	210

that the relationship between the three regions in respect to *changes* in average earnings is very different. In the South, where amounts of earnings have been lowest, and in the Northeast, which occupies a middle position in respect to amounts of earnings, manufacturing labor incomes have shown, through the 25-year period, much greater increases in earnings than has the West. In the West, where amounts of earnings were highest of all the three regions, the rate of increase appears to have been least, falling far behind the South and Northeast. There are evident wide differences within each of the three regions, but these differences are not so great but that we can rely pretty

confidently on the index numbers for the three regions among which the nine divisions are distributed. Of the nine geographic divisions, the one which has witnessed the greatest increase in money earnings, per capita, appears to have been the Middle Atlantic, while the one which has experienced the least rapid increase is the Mountain division.

The figures in Table 85 present interesting differences between different geographic regions in respect to the extent of the fall in money earnings between 1919 and 1921. The greatest decline, as might be expected, occurred in the two most highly industrialized regions—the New England and Middle Atlantic divisions, where the decline was in each case about 25 per cent. The smallest decline was in the Mountain division, where earnings per capita in 1921 were only 6 per cent less than in 1919. The caution is due in this connection that apparent declines from 1919 to 1921 may be misleading because of the fact that the year 1920, which was for most industries the peak year of prosperity, intervenes between the two census years 1919 and 1921. This, of course, means that the maximum decline from the peak of prosperity to the bottom of the depression was considerably greater than 25 per cent and probably came close to 35 per cent.

Difficulties of this kind are much less serious in the biennial period 1921–1923, since no peak occurred in 1922. For the country as a whole and for most of the separate geographic divisions there was a larger gain in money earnings between 1921 and 1923 than there was (net) loss between 1919 and 1921. But the gain in the later period did *not* bring money earnings back to a point as high as the 1920 level, which our interpolations put at 258, as indicated in Table 84. Index numbers of money earnings in 1920 are not available for the separate regions, but so far as one may judge from the figures which we have, it seems scarcely likely that in any of the geographic divisions the 1921–1923 gain could have been as great as the 1920–1921 loss.[1] Moreover, it will be noticed that in three of the nine geographic divisions, namely, the New England, West North Central, and South Atlantic divisions, money earnings in 1923 had not climbed back even to the 1919 level—a level considerably lower than that of 1920.

Figures showing relative amounts of per capita money earnings in each State for each manufactures census year are given in Table 86. As would be expected, these figures show that even within the geographic divisions there are considerable differences in the trend of money earnings since the beginning of the century. The State showing the maximum increase between 1899 and 1923 was North Carolina, where money earnings increased 302 per cent between 1899 and

[1] It is evident, however, that, in several of the industries, the 1921–1923 gain in money earnings was greater than the 1920–1921 loss.

1923. Half of this increase took place between 1914 and 1919, in which 5-year period per capita money earnings increased 154 per cent. Michigan is a close second with an increase during the 25-year period of 292 per cent, of which 135 per cent occurred between 1914 and

TABLE 86.—INDEX NUMBERS OF MONEY EARNINGS, PER CAPITA, ALL INDUSTRIES COMBINED, BY STATES, CENSUS YEARS: 1899–1923

STATE	1899	1904	1909	1914	1919	1921	1923
United States	77	84	97	100	210	182	220
Maine	71	84	96	100	236	180	220
New Hampshire	76	84	96	100	218	169	216
Vermont	73	82	96	100	210	165	209
Massachusetts	82	86	98	100	224	170	224
Rhode Island	80	86	100	100	220	174	228
Connecticut	86	89	101	100	235	164	228
New York	79	85	100	100	232	187	243
New Jersey	82	87	99	100	246	185	254
Pennsylvania	81	86	98	100	255	176	242
Ohio	73	82	95	100	243	176	237
Indiana	72	79	91	100	222	174	224
Illinois	73	83	94	100	214	176	224
Michigan	61	70	82	100	235	176	238
Wisconsin	72	83	96	100	223	167	219
Minnesota	73	83	96	100	204	171	202
Iowa	66	75	90	100	207	171	201
Missouri	76	87	97	100	202	172	208
North Dakota	68	81	93	100	190	175	205
South Dakota	75	83	98	100	208	169	182
Nebraska	72	82	91	100	219	173	198
Kansas	77	86	100	100	223	181	211
Delaware	82	87	102	100	202	185	243
Maryland	73	81	93	100	254	183	230
District of Columbia	76	87	102	100	186	195	247
Virginia	74	82	90	100	244	197	244
West Virginia	65	80	91	100	210	188	235
North Carolina	62	76	91	100	254	185	248
South Carolina	61	71	89	100	247	178	223
Georgia	69	83	99	100	237	174	207
Florida	73	86	97	100	215	161	204
Kentucky	76	85	93	100	206	192	246
Tennessee	76	87	93	100	203	175	220
Alabama	69	84	95	100	227	168	228
Mississippi	76	95	98	100	229	155	202
Arkansas	69	91	94	100	203	151	195
Louisiana	75	91	94	100	200	159	195
Oklahoma	63	83	94	100	198	188	232
Texas	78	85	97	100	191	175	205
Montana	85	104	107	100	161	140	183
Idaho	66	82	86	100	167	149	188
Wyoming	80	91	102	100	231	222	244
Colorado	86	96	103	100	174	169	198
New Mexico	72	89	95	100	173	137	189
Arizona	86	94	102	100	241	141	175
Utah	69	84	98	100	153	158	180
Nevada	76	91	98	100	150	153	193
Washington	75	89	101	100	202	149	206
Oregon	69	87	103	100	202	162	204
California	72	87	103	100	174	169	213

1919. Other States showing unusually large increases in earnings between 1899 and 1923 are Maryland, Delaware, Virginia, and Kentucky. At the other end of the scale, the State of Arizona appears to be the one where per capita earnings increased least of all during the quarter century, the per cent of increase being 103. The rate of

increase was also relatively low in Montana, Colorado, South Dakota, Nevada, and Utah. Delaware seems to have the distinction not only of having experienced the greatest increase in per capita earnings between 1899 and 1919, but also to be the State wherein earnings experienced the most headlong drop between 1919 and 1921. The decline in that State between those two years was 37 per cent.

CHANGES IN EARNINGS IN LEADING CITIES

Since manufacturing is so very largely an urban activity, it seems very desirable to present such data as are available for the larger cities. Because of the fact that the special investigation into the earnings of wage earners made by the Census Bureau in 1904 did not report average weekly earnings by cities and because our estimates of the amounts of earnings have had their starting point in the results of the 1904 investigation, it has not been feasible to report amounts of earnings by cities. It is possible, however, to present index numbers of per capita earnings for 18 of the largest cities in the United States. In Table 87 indexes of per capita earnings are reported for these cities. In the 18 cities are employed a little more than one-fourth of the manufacturing wage earners of the country. The list includes the 10 cities having the greatest value-product in the year 1919; they have also been chosen, so far as is possible in so short a list, with an eye to having all parts of the country fairly well represented.

TABLE 87.—INDEX NUMBERS OF PER CAPITA MONEY EARNINGS, OF MANUFACTURING WAGE EARNERS, BY CITIES, CENSUS YEARS: 1899–1923

[1914=100]

CITY	1899	1904	1909	1914	1919	1921	1923
United States	77	84	97	100	210	182	229
Baltimore	74	82	97	100	256	186	227
Boston	87	87	97	100	202	168	219
Buffalo	72	79	93	100	230	174	226
Chicago	73	84	93	100	216	181	228
Cincinnati	78	85	100	100	208	181	227
Cleveland	74	81	93	100	240	169	233
Detroit	58	68	81	100	247	195	251
Los Angeles	69	90	102	100	161	160	212
Minneapolis	73	80	93	100	190	162	194
New York	85	88	103	100	242	200	253
Oakland	67	82	107	100	186	164	206
Philadelphia	82	86	97	100	247	187	248
Pittsburgh	83	87	97	100	239	172	234
San Francisco	71	84	107	100	164	162	200
St. Louis	77	87	100	100	195	169	208
St. Paul	63	77	92	100	192	176	204
Seattle	81	87	100	100	206	156	200
New Orleans	83	88	103	100	199	174	200

The maximum increase in money earnings between 1899 and 1923 appears to have taken place in the city of Detroit, where it has

amounted to 332 per cent. It is to be noticed, however, that per capita earnings in Detroit in 1899 were, relative to 1914, much lower than in most of the cities, lower indeed than in any of the other cities listed. The lowest increase in money earnings per capita appears to have been in New Orleans, where they rose only about 141 per cent.

The greatest decline in earnings between 1919 and 1921 appears to have taken place in Baltimore, where the fall was about 27 per cent. Philadelphia, Detroit, and New York also witnessed rather heavier declines than did the country as a whole. The least decline between 1919 and 1921 appears to have been experienced in Los Angeles, where the fall was less than 1 per cent.

COMPARISON OF FLUCTUATIONS IN DIFFERENT INDUSTRIES

More significant, probably, than classification by geographic regions or by cities, is that which follows lines of industrial division. Table 88 gives a summary classification which includes all manufacturing industries arranged in 14 groups of industries as classified by the census and these in turn grouped into 6 industrial divisions. The table also gives the index numbers for all of these groups and divisions combined. Naturally, the fluctuations shown in these relatively large groupings, in even the smallest of which are included a fairly large number of separate industries, are less wide than for separate industries, a selected number of which are reported a little

TABLE 88.—INDEX NUMBERS OF MONEY EARNINGS, PER CAPITA, IN THE UNITED STATES, BY INDUSTRIAL GROUPS AND DIVISIONS, CENSUS YEARS: 1899–1923

[1914=100]

INDUSTRY GROUP AND DIVISION	1899	1904	1909	1914	1919	1921	1923
All groups	77	84	97	100	210	182	229
I.—Food, drink, and tobacco	75	86	92	100	196	197	209
Food and kindred products	73	85	92	100	201	207	218
Liquors and beverages	76	86	89	100	163	173	174
Tobacco manufactures	82	92	97	100	194	183	197
II.—Textiles, garments, and leather	82	88	103	100	214	219	250
Textiles and products	74	79	95	100	199	202	232
Leather and its finished products	74	81	94	100	182	189	210
III.—Lumber and its products	75	89	94	100	204	181	244
IV.—Paper and printing	76	83	95	100	181	208	271
V.—Stone, clay, glass, and chemicals	73	53	95	100	205	186	244
Chemicals and allied products	72	86	92	100	219	196	251
Stone, clay, and glass products	73	90	96	100	190	178	237
VI.—Metals, metal products, and miscellaneous	71	74	88	100	190	140	224
Iron and steel and their products	79	82	99	100	215	147	249
Metals and metal products, other than iron and steel	83	87	100	100	193	147	238
Vehicles for land transportation	66	71	87	100	197	153	247
Railroad repair shops	83	87	101	100	216	181	246
Miscellaneous industries	78	81	97	100	217	159	246

further on in this chapter. This is due, of course, to the fact that the extreme fluctuations which characterize certain industries are canceled out when those industries are consolidated with cognate industries in which the fluctuations have taken place within narrower limits.

Despite the blurring resultant upon such consolidation it is evident from Table 88 that there are clearly marked differences between the different industrial groups as to the changes which have taken place in per capita earnings since 1899. Among the six large industrial divisions, the largest increase between 1899 and 1923 appears to have been attained by the stone, clay, glass, and chemicals division, where the increase was about 235 per cent; next in rank was the textile, garment, and leather group, where the increase was about 205 per cent. The textile, garment, and leather group is not the only division, moreover, wherein there appears to have been not a fall but an increase in money earnings as between 1919 and 1921; it was true also of food, drink, and tobacco; and paper and printing; in the former group the increase was less than 1 per cent, in paper and printing it was about 15 per cent. More than balancing these cases of increased earnings between 1919 and 1921 were the three other groups which showed considerable declines in earnings. Lumber and timber products dropped from 204 to 181; stone, clay, glass, and chemicals went from 205 to 186; metals, metal products, and miscellaneous from 190 to 140, the result, of course, being reflected in figures for all groups combined, which show a considerable drop between 1919 and 1921. Even the three divisions in which there seems to have been increases in earnings between 1919 and 1921 are probably misleading, and if the index numbers for 1920 were available, it would undoubtedly be shown that in few, if any cases, was there a rise between 1920, the peak year, and the following year, 1921. There certainly is none shown among the 12 selected industries reported in Table 92.

Among the six industrial divisions the increases range from one of 180 per cent in the case of food, drink, and tobacco, to one of 257 per cent in the case of paper and printing. A closer approach is made to the fluctuations in individual industries in the index numbers for the 14 groups of industries which make up the six divisions just discussed. In the case of these groups there is apparently much less uniformity than appears to prevail among the grand divisions. The greatest increase occurs in the manufacture of vehicles for land transportation, a rise of 275 per cent. The minimum increase was in liquors and beverages—128 per cent.

The relative amounts of per capita money earnings in each of the 41 selected industries are shown in Table 89, where we undoubtedly get the most faithful reflection of differences in income fluctuations

of money earnings as between different industries. The range of variation among the different industries is quite evidently much greater than in the preceding table based upon a group and division classification. Here we note uncommonly high rates of increase such as that experienced in the blast-furnace branch of the iron and steel industry, where the index numbers are 70 and 261 for 1899 and 1919, respectively. Other industries to be credited with especially large

TABLE 89.—INDEX NUMBERS OF MONEY EARNINGS, PER CAPITA, IN THE UNITED STATES, BY SELECTED INDUSTRIES, CENSUS YEARS: 1899–1923

INDUSTRY	1899	1904	1909	1914	1919	1921	1923
All industries	77	84	97	100	210	182	229
Bread and other bakery products	73	93	104	100	196	214	217
Flour-mill and gristmill products	79	88	95	100	195	195	195
Confectionery	72	75	85	100	183	193	210
Slaughtering and meat packing	80	94	96	100	242	208	235
Liquors, malt	75	86	88	100	157	161	197
Mineral and soda waters	80	91	88	100	169	171	219
Tobacco, cigars and cigarettes	83	88	91	100	171	170	178
Carpets and rugs	83	87	103	100	218	249	305
Shirts	80	82	96	100	171	185	207
Clothing, men's	75	82	96	100	219	227	249
Clothing, women's	71	80	97	100	209	218	252
Cotton manufactures	74	76	91	100	210	198	220
Dyeing and finishing textiles	84	84	97	100	193	206	234
Knit goods	73	75	99	100	177	191	226
Silk goods	73	76	92	100	190	200	242
Woolen and worsted goods	64	82	100	100	200	221	268
Boots and shoes	79	86	98	100	193	195	217
Leather, tanned, curried, and finished	80	85	98	100	230	196	282
Furniture	76	84	96	100	194	201	262
Lumber, timber products	76	95	93	100	218	169	235
Lumber, planing-mill products	72	84	95	100	174	187	242
Paper and wood pulp	73	82	95	100	209	189	238
Printing and publishing, book and job	75	82	95	100	179	227	256
Printing and publishing, newspapers, etc	72	81	94	100	167	219	250
Chemicals		83	88	100	196	160	212
Petroleum refining	88	78	80	100	196	179	215
Brick and tile, pottery, terra-cotta, and fire-clay products	65	88	102	100	210	195	266
Glass	79	87	79	100	177	167	205
Iron and steel, blast furnaces	70	75	97	100	261	170	260
Iron and steel, steel works and rolling mills	85	83	105	100	257	153	272
Foundry and machine-shop products	88	89	105	100	215	164	256
Smelting and refining, copper, lead, and zinc	82	93	100	100	175	120	202
Automobile bodies and parts		70	89	100	182	138	226
Automobiles	69	68	79	100	173	133	216
Cars, steam-railroad	68	73	80	100	221	162	259
Railroad repair shops—electric	92	90	99	100	187	158	231
Railroad repair shops—steam	83	87	102	100	217	182	248
Agricultural implements	70	74	88	100	188	169	212
Rubber goods	67	71	95	100	230	188	254
Shipbuilding, steel	73	76	91	100	229	182	231
Electrical machinery, apparatus, and supplies	81	85	101	100	197	179	244

increases during the period from 1899 to 1921 were slaughtering and meat packing; leather, tanned, curried, and finished; iron and steel, steel works and rolling mills; cars, steam-railroad; and rubber goods. Among industries at the other end of the scale, showing relatively small increases in earnings, were liquors, malt; mineral and soda waters; shirts; printing and publishing, newspapers and periodicals; glass; and electric-railroad repair shops.

In order to set forth more clearly the differences between industries in regard to relative fluctuations in money earnings, a summary has been made in Table 90 in which the 41 industries are arranged in each census year according to the relative money earnings paid in the industry. There is evident here, as was explained in connection with an earlier table presenting the amounts of earnings, the same marked division of the whole period into two fields of concentration, one including the period prior to 1914 and the other including the last three census years shown in the table. The first period is marked by relatively low money earnings, the second and more recent one, by very much higher money earnings. The second period is also in contrast with the first in respect to the wider range of variation between industries. There seems to be a much more definite concentration in the earlier than in the later period. Thus, in 1899,

TABLE 90.—FORTY-ONE SELECTED INDUSTRIES, ARRANGED ACCORDING TO RELATIVES OF ANNUAL MONEY EARNINGS, PER CAPITA, CENSUS YEARS: 1899–1923

[1914=100]

RELATIVE MONEY EARNINGS	NUMBER OF INDUSTRIES			RELATIVE MONEY EARNINGS	NUMBER OF INDUSTRIES			RELATIVE MONEY EARNINGS	NUMBER OF INDUSTRIES			RELATIVE MONEY EARNINGS	NUMBER OF INDUSTRIES		
	1899	1904	1909		1919	1921	1923		1919	1921	1923		1919	1921	1923
60–64	1			115–119				170–174	4	3		225–229	1	2	2
65–69	4	1		120–124		1		175–179	4	2	1	230–234	2		3
70–74	12	4		125–129				180–184	2	2		235–239			3
75–79	8	7	2	130–134		1		185–189	2	4		240–244	1		3
80–84	10	12	1	135–139		1		190–194	4	2		245–249		1	2
85–89	3	11	7	140–144				195–199	5	5	2	250–254			3
90–94	1	5	7	145–149				200–204	1	2	1	255–259	1		3
95–99		1	15	150–154		1		205–209	2	2	2	260–264	1		2
100–104			7	155–159	1	1		210–214	2	1	3	265–269			2
105–109			2	160–164		4		215–219	5	2	5	270–274			1
110–114				165–169	2	3		220–224	1	1	1	275–305			2

[1] 39 industries.

out of 39 industries 12 had per capita earnings ranging between 70 and 74 as compared with 100 for 1914; 10 had per capita money earnings ranging between 80 and 84. In 1904, 12 out of 41 industries had per capita money earnings ranging between 80 and 84, and in 1909, 15, or more than one-third of the industries, had per capita earnings ranging between 95 and 99 as compared with 100 for 1914. For the whole of this earlier period, including the three manufactures census years shown, the relatives ranged between the industry which reported the minimum per capita earnings, which fell between 60 and 64, and the two industries which reported the maximum per capita earnings which fell between 100 and 105. In the later period there is no case where more than five industries fell in the same earnings class and there are only three cases where as many as five industries fell in the same earnings class. Moreover the range between maximum and minimum is very much wider than in the

earlier period. In 1919 the range was between 155 and 260, with 1914 as 100; in 1921, the range was between 120 and 245 on the same base.

PERCENTILE DISTRIBUTION OF THE 41 INDUSTRIES

A more condensed representation of the same facts is contained in Table 91, which shows the median, decil, and extreme industry relatives of annual money earnings per capita for each manufactures census year. The items in this table represent, not the number of industries, but the relative amounts of per capita earnings as compared with 1914, in the industry which occupied the median, or middle, position among the 41 industries in respect to relative earnings; in the industries which occupied the extreme positions (that is, the industry having the very lowest, and the one having the very highest, earnings), and similarly the relative numbers representing

TABLE 91.—MEDIAN, DECIL, AND EXTREME INDUSTRY RELATIVES OF ANNUAL MONEY EARNINGS, PER CAPITA, CENSUS YEARS: 1899–1923

[1914=100]

	1899 [1]	1904	1909	1914	1919	1921	1923
Maximum relative	92	95	105	100	261	249	305
Ninth decil	84	91	102	100	230	219	266
Eighth decil	82	88	100	100	218	206	256
Seventh decil	80	87	97	100	210	196	250
Sixth decil	79	85	96	100	200	193	242
Median	75	83	95	100	196	187	235
Fourth decil	73	82	93	100	190	179	226
Third decil	73	78	91	100	182	169	217
Second decil	71	75	88	100	175	162	212
First decil	68	73	85	100	171	153	202
Minimum relative	64	68	79	100	157	120	178

[1] Only 39 industries used in 1899. "Automobiles, bodies and parts," and "Chemicals" not included.

the per capita earnings of industries occupying positions between the median and high and low extremes, positions, to be more precise, which separate the whole number of industries into 10 equal parts. Thus, taking the year 1921 for illustration, the data of Table 91 are to be interpreted after this fashion: Half of the 41 industries had relative earnings, the amounts of which were between 187 and 249, as compared with 100 for 1914; another one-half earnings the relative amounts of which were between 120 and 187, as compared with 100 for 1914; the median relative of per capita earnings was 187. In one-tenth of the 41 industries the relative per capita earnings, as compared with 1914 as 100, were between 187 and 193; in another one-tenth between 193 and 196; and the highest one-tenth of the industries had relative earnings between 219 and 249. The lowest one-tenth of the industries, on the other hand, had per capita earnings falling between 120 and 153. The general degree of concentration,

and the variation in the degree of concentration between different census years, is more clearly brought out in Figure 15 (on p. 119 above), based on the absolute dollar figures of Table 49. The lines of the chart bring out still more clearly the fact mentioned in an earlier chapter, that there has been a much greater degree of concentration around the typical, or median, industry in the first half of the 25-year period than in the last half, the difference being represented in Table 91 by the relative distances between the minimum of 64 and the maximum of 92 in 1899, and the minimum of 178 and the maximum of 305 in 1923.

An annual series of index numbers of per capita money earnings for 12 industries is presented in Table 92. These relatives, being continuous, have the advantage of showing the changes which took place in intercensal years and help to correct the figures given in preceding tables for census years only. It is evident that every one of the 12 industries had a decline in money earnings between

TABLE 92.—INDEX NUMBERS OF ACTUAL ANNUAL MONEY EARNINGS, PER CAPITA, IN THE UNITED STATES, FOR EACH OF 12 SELECTED INDUSTRIES: 1899–1927

[Census years in bold-faced type. 1914=100]

YEAR	Woolen goods	Cotton manufactures [1]	Silk goods, including throwsters	Knit goods	Clothing, men's	Boots and shoes [1]	Automobiles	Iron and steel, steel works and rolling mills	Cars, steam-railroad [2]	Paper and wood pulp	Tobacco, cigars and cigarettes	Leather, tanned, curried, and finished
1899	64	74	73	73	75	79	69	85	68	73	83	80
1900	66	79	68	74	76	78	70	90	75	76	86	84
1901	83	80	67	73	77	82	73	69	79	76	85	83
1902	84	83	78	75	81	86	77	76	87	80	90	82
1903	81	86	80	75	80	86	77	75	84	79	80	85
1904	82	76	76	75	82	86	68	83	73	82	88	85
1905	95	76	82	111	85	91	75	98	87	84	88	85
1906	110	85	84	81	88	95	79	99	82	89	88	105
1907	115	97	91	82	90	101	88	107	84	92	91	103
1908	97	96	87	69	87	100	85	82	74	83	92	99
1909	100	91	92	90	96	98	79	105	80	95	91	98
1910	101	91	92	93	108	99	90	109	72	96	93	99
1911	100	90	94	94	116	99	84	112	92	97	94	100
1912	104	98	95	98	113	99	81	116	105	99	96	99
1913	98	104	101	99	116	100	89	115	105	100	99	101
1914	100	100	100	100	100	100	100	100	100	100	100	100
1915	102	97	102	101	102	99	-------	106	78	98	91	101
1916	164	118	133	132	132	121	-------	158	88	119	116	132
1917	168	143	150	146	161	152	131	184	127	130	147	138
1918	206	202	186	184	202	197	129	227	147	163	161	184
1919	200	210	190	177	219	193	173	257	221	209	171	230
1920	235	255	220	208	266	210	220	325	292	286	228	228
1921	221	198	200	191	227	195	133	153	102	189	170	196
1922	225	192	189	194	228	204	180	185	177	214	170	221
1923	268	220	242	226	249	217	216	272	259	238	178	282
1924	234	200	201	198	227	189	233	238	193	232	158	225
1925	234	204	235	216	221	197	227	259	235	230	185	207
1926	234	204	236	225	215	196	219	263	238	235	189	210
1927	236	211	238	233	214	196	217	258	243	232	187	207

[1] Not including rubber boots and shoes.
[2] Not including operations of railroad companies.

1920 and 1921, the drop which in earlier tables seemed apparent between 1919 and 1921 being, in reality, made up in respect to most of the industries, of an appreciable rise between 1919 and 1920 and a still more appreciable fall between 1920 and 1921. In the cotton manufactures industry, for example, earnings were evidently lower per capita in both 1919 and 1921 than in 1920. For these industries, moreover, it is possible to include figures for 1923, 1925 and 1927, and they bear out the impression created by the census year tables that there was a very considerable increase in money earnings between 1921 and 1923 and a still further increase between 1923 and 1925. Indeed each one of the 12 industries shown in Table 92 participated in the increase between 1921 and 1923, some, it is true, only slightly, as in the case of boots and shoes, but others, including the leather and iron and steel and automobile industries, shared in it very heavily. Between 1925 and 1927 the increases are fewer and less marked.

REGIONAL VARIATIONS IN SELECTED INDUSTRIES

The final table of relative money earnings is Table 93, which is designed to bring out for identical industries the differences prevailing in different parts of the country. For this purpose 24 industries are shown. A similar table was presented in Part II and it showed wide differences in the *amounts* of earnings received in identical industries in different parts of the country. This table of relatives shows no less significant differences as to the degree of change in earnings in identical industries in different parts of the country. In men's clothing, for example, it shows that there has been a very much greater increase in money earnings in Illinois than in New York, the first and last relatives being 68 and 247 for Illinois and 87 and 248 for New York. In cotton manufactures, there appears to have been a fourfold increase in per capita earnings in North Carolina, as compared to a less than threefold increase in Massachusetts. In silk goods, the State of Pennsylvania evidently has witnessed a greater increase in earnings than the State of New Jersey; in the furniture industry, earnings have increased more rapidly in Michigan than in New York; in printing and publishing, newspapers, per capita earnings in Illinois have increased more rapidly than in New York; in the blast-furnace division of the iron and steel industry, money earnings have increased much more rapidly in Alabama than in Pennsylvania; in foundry and machine-shop products, per capita earnings have increased more rapidly in Ohio than in New York; in electrical machinery, apparatus, and supplies, New York again suffers by comparison with Illinois, where earnings have increased much more rapidly than in the former State.

TABLE 93.—INDEX NUMBERS OF ACTUAL MONEY EARNINGS OF MALE WAGE EARNERS, PER CAPITA, IN 24 SELECTED INDUSTRIES, BY SELECTED STATES, CENSUS YEARS: 1899–1921

[1914=100]

INDUSTRY AND STATE	1899	1904	1909	1914	1919	1921
Tobacco, cigars and cigarettes:						
Florida	79	96	96	100	165	154
Pennsylvania	92	96	98	100	216	197
Clothing, men's:						
New York	87	87	101	100	245	248
Illinois	68	82	83	100	226	247
Clothing, women's:						
New York	76	80	98	100	220	230
Illinois	60	82	95	100	193	197
Cotton manufactures:						
Massachusetts	70	79	98	100	214	202
North Carolina	57	68	90	100	239	197
Knit goods:						
Pennsylvania	72	74	85	100	180	207
New York	76	76	96	100	179	199
Shirts:						
New York	86	84	102	100	190	209
Pennsylvania	79	87	99	100	152	167
Silk goods, including throwsters:						
Pennsylvania	60	70	89	100	191	210
New Jersey	72	73	91	100	188	191
Woolen goods:						
Massachusetts	74	82	93	100	211	214
Pennsylvania	78	77	93	100	228	210
Worsted goods:						
Massachusetts	74	77	93	100	197	202
Pennsylvania	74	79	91	100	223	214
Boots and shoes, not including rubber boots and shoes:						
Massachusetts	77	85	95	100	178	181
Missouri	74	87	104	100	164	190
Leather, tanned, curried, and finished:						
Massachusetts	83	85	95	100	210	201
Pennsylvania	74	80	92	100	224	202
Furniture:						
New York	82	88	99	100	197	211
Michigan	70	80	92	100	195	211
Lumber and timber products:						
Washington	74	90	99	100	208	153
Louisiana	64	89	86	100	201	142
Lumber, planing-mill products, not including planing mills connected with sawmills:						
New York	77	88	98	100	187	213
California	71	88	103	100	154	162
Paper and wood pulp:						
New York	74	83	95	100	214	212
Maine	69	81	97	100	200	200
Printing and publishing, newspapers and periodicals:						
New York	76	84	95	100	154	197
Illinois	69	91	96	100	161	227
Printing and publishing, book and job:						
New York	81	84	96	100	191	229
Illinois	68	80	91	100	182	208
Glass:						
Pennsylvania	84	100	94	100	201	170
West Virginia	65	93	99	100	194	188
Iron and steel, blast furnaces:						
Pennsylvania	64	69	87	100	244	161
Alabama	51	70	107	100	261	170
Iron and steel, steel works and rolling mills:						
Pennsylvania	80	80	100	100	250	142
Ohio	76	82	98	100	243	137
Foundry and machine-shop products:						
Ohio	77	81	98	100	209	148
New York	81	83	99	100	194	143
Agricultural implements:						
Illinois	64	72	83	100	166	136
Indiana	76	81	92	100	222	142
Electrical machinery, apparatus, and supplies:						
New York	83	83	105	100	188	138
Illinois	64	69	96	100	158	151
Chemicals:						
New Jersey	80	83	93	100	192	174
New York	75	83	91	100	208	163

CHAPTER IX

CHANGES IN REAL EARNINGS

It is necessary to make two important discounts from the estimated amounts of full-time earnings in order to reach results which may have some colorable claim to serve as indices of changes in the economic well-being of wage earners in different industries and in different parts of the country and to indicate the changes which have taken place in their economic welfare. The two adjustments referred to are, first, the subtraction from full-time earnings of whatever proportion of them is estimated to represent unemployment, or underemployment, the remainder being taken to represent actual money earnings; second, the process of deflating these money earnings by application of the cost of living index. The result of this process of deflation is a series of estimates of relative real labor incomes, and it is these results that are presented in this chapter.

FACTORS AFFECTING REAL EARNINGS

Before discussing the data for real earnings it is appropriate to reconsider briefly the different factors which in some degree affect real earnings; for it is of the interplay of these factors that real earnings may be said to be the resultant. The factors referred to are existing wage rates (both time and piece), the prices of the necessities and comforts of life which wage earners buy, and the amount of employment. The tendency, speaking by and large, and disregarding such lags as that between wages and general prices, is for these three factors of influence to rise together and fall together. However, the three factors by no means always fluctuate together, and even when they do so in point of time the degree of fluctuation is almost always different in the case of the different factors. To the extent that retail prices and the amount of unemployment remain the same, the effect of increased wage rates is to bring about a proportionate increase in the purchasing power of money earnings. In so far as wage rates and retail prices remain the same, the effect of variations in the amount of unemployment is to bring about an inverse change in the purchasing power of a worker's earnings—that is to say, his real earnings are increased with each diminution in the amount of unemployment and decreased with each increase in the amount of unemployment. Assuming that wage rates and the amount of unemployment remain the same, the effect of changing prices upon the purchasing power of wage earners' income is

also inverse—that is to say, to the degree the prices fall to that degree the purchasing power of a worker's income rises. The process of deflating money wages has for its object, of course, neutralization or elimination of the effect of price fluctuations upon the purchasing power of wage rates or earnings. It is evident that the present series of relatives of real earnings represents the amounts of purchasing power received in any given year, which amounts, in turn, are the cumulated aggregates of time rates of pay received for all of the time actually worked during the year. This is, of course, strictly true only if the time rates are hourly rates, because weekly or monthly rates give no indication of the exact time during which labor was performed; the hour does do it. In other words, the year's real earnings may be thought of as the number of deflated dollars which the average wage earner received (unfortunately we still have to deal with the average wage earner) for whatever number of hours, at a constant rate or at varying rates, he put in during the year.

TWENTY-NINE YEARS OF FLUCTUATION IN REAL EARNINGS

The changes which have taken place in real earnings in manufacturing industries generally in the 29 years since 1899 are indicated in summary Table 94, in connection with which the reader should again examine Figure 5 on page 55. It is evident, if these figures can be relied on, that between 1899 and 1927 there has been a large appreciation of the purchasing power of manufacturing wage earners' annual income, the largest increases apparently having taken place between the census years 1921 and 1925. During the first five years of the quarter-century period under review there was little change

TABLE 94.—INDEX NUMBERS OF THE PURCHASING POWER (IN TERMS OF THE DOLLAR OF 1914) OF ACTUAL ANNUAL LABOR INCOMES, PER CAPITA, IN THE UNITED STATES, ALL INDUSTRIES COMBINED, EACH YEAR: 1899–1927

YEAR	Index of real earnings	Link relatives of year-to-year change	YEAR	Index of real earnings	Link relatives of year-to-year change
1899	105		1914	100	−7.5
1900	103	−2.0	1915	108	7.6
1901	105	2.2	1916	125	15.8
1902	108	2.8	1917	116	−7.1
1903	103	−4.5	1918	122	5.4
1904	101	−1.9	1919	118	−3.7
1905	112	11.0	1920	126	7.2
1906	115	2.2	1921	103	−18.0
1907	110	−3.6	1922	122	18.5
1908	99	−10.4	1923	146	17.0
1909	111	12.3	1924	135	−7.5
1910	106	−5.0	1925	143	6.0
1911	98	27.6	1926	144	1.0
1912	107	9.8	1927	140	−2.5
1913	108	1.0			

in real earnings, what there was took the form, evidently, of a slight decline. This situation was the result of the combined effect of a slowly rising cost of living during that period, a somewhat less gradual rise in wage rates, and an increase between 1899 and 1900, and again in 1903 and 1904 in the amount of unemployment. The pronounced drop in purchasing power in 1903-1904 was the result, chiefly, of a large increase in unemployment, which was reinforced to some extent in 1903 by a continued rise in the cost of living, with a resultant reduction in purchasing power, despite the continued rise of yearly rates of wages. The two years following 1904 were characterized by considerable gains in the purchasing power of actual labor incomes. During these two years and even in 1907, which witnessed some recession, earnings were appreciably above the level of 1899 and 1900. This high level of purchasing power was the result of somewhat accelerated increases in wage rates, but it was due more largely to diminution in the amount of unemployment. The increases in purchasing power would have been still greater were it not that the third factor—cost of living—underwent a somewhat more rapid increase than in the preceding years, and this, of course, tended to offset in part the resultant high purchasing power which would otherwise have been brought to the wage earner as a result of increased rates and diminished unemployment.

In 1908 came a much larger drop in purchasing power than occurred four years earlier. This decline pulled down the manufacturing wage-earners buying power to the lowest point within the quarter century here surveyed; although in 1914 it dropped to a low level which topped that of 1908 by a negligible margin. The drop in 1908 was brought about primarily, of course, by a very large increase in unemployment. This decline in employment was reinforced in its effect upon purchasing power by a slackening, which was so marked, indeed, for two or three years following 1907, as to take the form of a decline in the rise in rates. The loss in buying power would have been even greater were it not for the fact that living costs turned downward between 1907 and 1909. After 1908 and until 1915 the wage earners buying power fluctuated irregularly but not widely, about the level of the year 1900. The persistence of low levels of purchasing power for this period resulted, at least so far as the period up to 1915 is concerned, from intermittent declines in employment, especially marked in 1911 and 1914, reinforced by renewed increases in the cost of living, both of which factors tended to more than offset the moderate increases which took place in rates. After 1916 employment fell off somewhat and 1917 and 1919 saw minor recessions in real earnings. In 1920 the buying power of earnings reached a high level which up to that time had never been reached—and which had been nearly approached in only one preceding year—1916. The year 1920 marked

the peak in employment for industry generally and the crest of the wave of business prosperity. The high point of purchasing power reached in 1920 was the joint result of increased employment and higher rates of wages, both of which increased even more rapidly than the cost of living. But 1920 does not mark the peak year of real earnings as it does the peak of the cost of living. This is partly due, of course, to the increased unemployment which began to be evident a considerable time before the year 1920 had passed. There were also large drops in living costs and in rates before the beginning of 1921. The drop in purchasing power in 1921 was simply one phase of the depression of that year.

It appears on the face of the figures, however, that there was no such precipitate fall in purchasing power from 1920 to 1921 as there was in money earnings. This less unfavorable feature of the situation was probably due to the rapid drop in the cost of living following the break in prices in 1921. This break in commodity prices preceded for the most part the break in prices of labor; that is to say, in the rates of wages, and where the wage earner had lagged behind other prices on the upgrade, he now was able to make up, at least in part, for that disadvantage, for his rates persisted at relatively high levels for appreciable periods after general prices had fallen headlong. The result of all this was, of course, the maintenance of purchasing power at points less low than those to which they would otherwise have fallen.

The peak in real earnings came in 1923. Following 1921 and persisting through 1922 and 1923, and, after a sag in 1924, through 1925 and 1926 a quite unprecedented increase in the purchasing power of money earnings took place. So great an increase was it, apparently, that it not only exceeded any other increase in the records of the quarter century but has put the purchasing power of labor incomes in manufacturing far above the 1900 level and in 1923, 1924, 1925, and 1926 boosted them to high points not reached before in the quarter century with which we are dealing.

Yet, it is clear from the figures given in Table 94 that because there has been an increase of relative earnings from 105 in 1899 to 146 in 1923, and to 143 in 1925, it does not by any means follow that manufacturing wage earners have been better off economically all through the 29-year period than they were before the beginning of it. If the figures are reasonably accurate it may be said, of course, that manufacturing wage earners were better off in 1923 than they were in 1899 and, indeed, in any other year of the 29-year period. But wage earners are not living only in the year 1923; in fact they must live longer than the whole period shown in this table; but even if we assume that this period from 1899 to 1927 represents the working life span of the manufacturing wage earner, it is evident that during a large part of

the period he was no better off economically than he was at the beginning of the period.

BALANCE OF GAINS AND LOSSES THROUGH THE QUARTER CENTURY

It is important then not only to inquire whether the wage earner is receiving higher real earnings than he formerly received, a question which as of 1925 we, fortunately, can answer with an emphatic affirmative, but also to ascertain for what proportion of the period under consideration the wage earner was worse off, and for what proportion he was better off, than in 1899. This latter question gets some light from the figures of Table 94. It appears that there were seven years in which the purchasing power of money earnings was no greater or was even less than it was at the beginning of the century. These losses, as well as the much greater gains, in buying are represented in Figure 5 by the areas marked off from the curve representing real earnings by the dotted projection of the purchasing power level of 1899–1900. The shaded area above the projection line represents the extent of accomplished gains in purchasing power over 1899, whereas the shaded area below that line represents corresponding amounts of purchasing power lost during the period covered. None of this comment, of course, presumes even to raise the question whether the absolute purchasing power of manufacturing wages in 1899–1900 was as high as it ought to be, or too high.

Estimated monthly changes in annual rates of real and money income, per capita, are shown in Figure 24 for the period from January, 1915, to December, 1927, inclusive. The data from which this chart was drawn are given in Table 22. The chart shows in greater time detail the fluctuations in labor income during the last 13 years of the period under examination.

FLUCTUATIONS AMONG THE INDUSTRIES

It will not do to stop with a showing of the apparent fluctuations in real earnings for all industries combined. Such a showing is all the more inadequate because of the likelihood that wider changes up and down in the separate industries, and groups of industries, will have to some extent canceled each other in the figures which are given for all industries combined. This is less likely to be the case to any serious degree in view of the fact that the index numbers for all industries combined are not made by averaging the relatives for separate industries, but are computed directly from the census average wage, obtained by dividing aggregate amounts paid in wages in all manufacturing establishments by the aggregate number of wage earners in those establishments. But even with this method in use it still remains eminently desirable to inquire into the fluctuations in the separate industries.

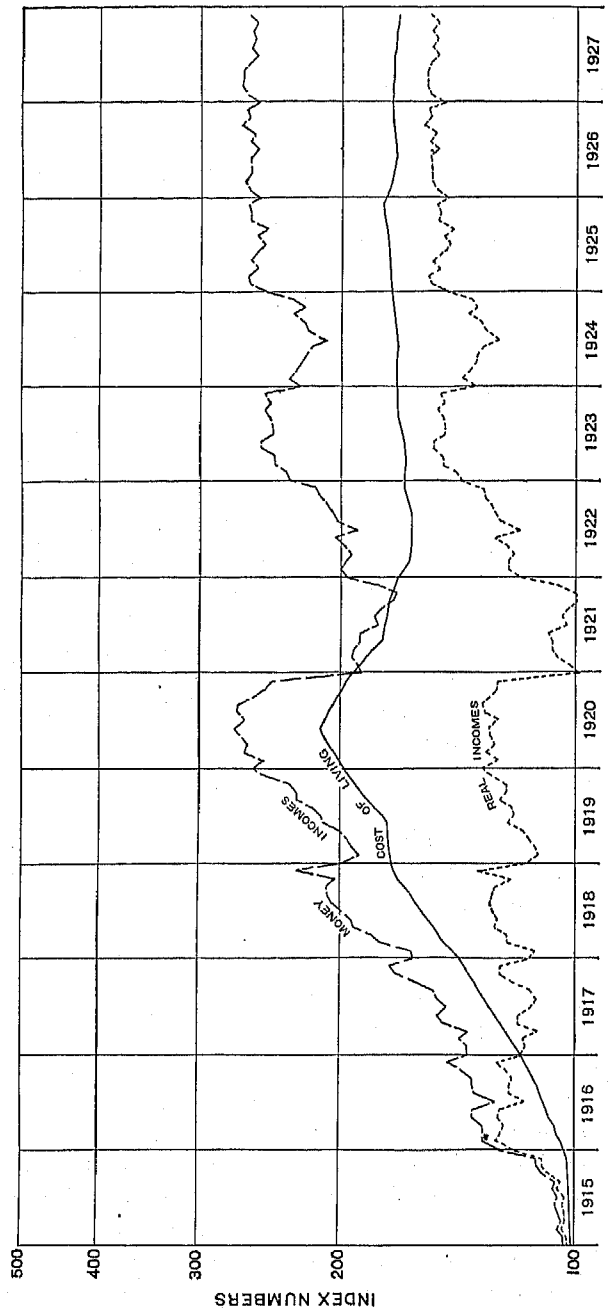

FIG. 24.—MONTHLY INDEXES OF MANUFACTURING LABOR INCOMES, PER CAPITA, AND OF THE COST OF LIVING, JANUARY, 1915, TO DECEMBER, 1927

A summary classification of the 41 selected industries is presented in Table 95. The table shows, for each manufactures census year since 1899, the number of industries in which relative real earnings per capita (on the 1914 base) fell within the specified groups. There is noticeable, first of all, a vastly greater degree of uniformity as between the different industries from one census year to another than has appeared to be the case in a similar arrangement of data based on money earnings and presented in the preceding chapter. Yet there is observable in the postwar part of the period an extraordinarily wide dispersion between the industries in respect to their respective per capita earnings. The years 1899, 1904, and 1909 seem to reflect especially great concentration among the industries at central points; thus in 1904 in 11 out of 41 industries, the relatives of per capita real earnings were between 95 and 99. In the following census year, 1909, in 11 out of 41 industries, the per capita real earnings were between 100 and 105. In 1899 in one industry the

TABLE 95.—THE 41 SELECTED INDUSTRIES AND THE WAGE EARNERS EMPLOYED THEREIN, DISTRIBUTED ACCORDING TO RELATIVE "REAL" EARNINGS, PER CAPITA, PREVAILING IN EACH INDUSTRY, CENSUS YEARS: 1899–1925

[In 1914 *all* industries are in the relative earnings group 100–104, since 1914 is taken as the base, or 100]

RELATIVE "REAL" EARNINGS (1914=100)	THE NUMBER OF INDUSTRIES IN EACH RELATIVE EARNINGS GROUP AND PERCENTAGE BORNE BY THE AVERAGE NUMBER OF WAGE EARNERS IN THOSE INDUSTRIES TO THE TOTAL NUMBER OF WAGE EARNERS IN ALL MANUFACTURING INDUSTRIES							
	1899*		1904		1909		1919	
	Number [1]	Per cent	Number [2]	Per cent	Number [3]	Per cent	Number [4]	Per cent
65–69								
70–74								
75–79								
80–84			[a] 2	0.22				
85–89	[a] 2	4.91	[b] 3	1.88			[a] 1	0.38
90–94	[b] 3	1.19	[c] 7	11.42	[a] 3	1.69	[b] 1	1.32
95–99	[c] 11	13.90	[d] 7	12.56	[b] 1	.67	[c] 8	8.59
100–104	[d] 6	21.89	[e] 11	16.44	[c] 9	13.70	[d] 3	3.65
105–109	[e] 7	8.34	[f] 7	18.65	[d] 8	19.16	[e] 8	8.85
110–114	[f] 7	12.40	[g] 4	13.10	[e] 12	15.62	[f] 4	5.42
115–119	[g] 2	7.69			[f] 5	10.65	[g] 4	9.12
120–124	[h] 1	.15			[g] 3	13.17	[h] 6	18.68
125–129							[i] 3	5.90
130–134								
135–139							[j] 1	1.78
140–144							[k] 1	4.12
145–149							[l] 1	.46
150–154								
155–159								
160–164								
165–169								
170–174								
175–179								
180–184								
Total (41 industries)	39	70.47	41	74.27	41	74.66	41	68.27
Not reported here		29.53		26.73		25.34		31.73
Total wage earners in all manufacturing industries	4,712,763		5,468,383		6,615,046		9,096,372	

* 39 industries only reported for 1899, data for "Automobiles, bodies and parts," and "Chemicals" being unavailable.

(See pp. 196 and 197 for footnotes)

TABLE 95.—THE 41 SELECTED INDUSTRIES AND THE WAGE EARNERS EMPLOYED THEREIN, DISTRIBUTED ACCORDING TO RELATIVE "REAL" EARNINGS, PER CAPITA, PREVAILING IN EACH INDUSTRY, CENSUS YEARS: 1899–1925—Contd.

[In 1914 *all* industries are in the relative earnings group 100–104, since 1904 is taken as the base, or 100]

RELATIVE "REAL" EARNINGS (1914=100)	THE NUMBER OF INDUSTRIES IN EACH RELATIVE EARNINGS GROUP AND PERCENTAGE BORNE BY THE AVERAGE NUMBER OF WAGE EARNERS IN THOSE INDUSTRIES TO THE TOTAL NUMBER OF WAGE EARNERS IN ALL MANUFACTURING INDUSTRIES					
	1921		1923		1925†	
	Number [5]	Per cent	Number [6]	Per cent	Number [7]	Per cent
65–69	[a] 1	0.27				
70–74						
75–79	[b] 2	3.07				
80–84						
85–89	[c] 1	3.39				
90–94	[d] 5	6.70				
95–99	[e] 6	8.87				
100–104	[f] 4	10.11				
105–109	[g] 6	7.60	[a] 1	1.48	[a] 2	1.99
110–114	[h] 7	14.48			[b] 1	.39
115–119	[i] 2	2.42	[b] 3	.97	[c] 2	2.85
120–124	[j] 3	5.78	[c] 3	2.15	[d] 4	7.39
125–129	[k] 3	6.46	[d] 7	9.34	[e] 4	5.58
130–134			[e] 3	9.71	[f] 5	6.50
135–139			[f] 4	7.35	[g] 8	12.85
140–144	[l] 1	.33	[g] 4	5.49	[h] 1	1.51
145–149			[h] 5	13.31	[i] 3	11.23
150–154			[i] 5	9.44	[j] 4	12.08
155–159			[j] 3	5.73	[k] 2	3.06
160–164			[k] 1	4.42	[l] 2	1.78
165–169			[l] 1	.08	[m] 1	2.16
170–174						
175–179						
180–184			[m] 1	.40		
Total (41 industries)	41	69.48	41	70.47	39	69.37
Not reported here		30.52		29.53		30.63
Total wage earners in all manufacturing industries	6,946,570		8,778,173		8,384,261	

† 39 industries only reported for 1925. Data for "Mineral and soda waters" and "Liquors, malt" being unavailable.

[1] The industries represented by the figures in this column are:
- [a] Brick and tile, terra-cotta, and fire-clay products; Woolen and worsted goods.
- [b] Automobiles; Cars, steam-railroad; Rubber tires, inner tubes, and rubber goods, not elsewhere specified.
- [c] Agricultural implements; Bread and bakery products; Clothing, women's; Confectionery; Iron and steel, blast furnaces; Knit goods; Lumber, planing-mill products; Paper and wood pulp; Printing and publishing, newspapers and periodicals; Silk goods; Shipbuilding, steel.
- [d] Clothing, men's; Cotton manufactures; Furniture; Liquors, malt; Lumber and timber products; Printing and publishing, book and job.
- [e] Boots and shoes; Flour-mill and gristmill products; Glass; Leather, tanned, curried, and finished; Mineral and soda waters; Shirts; Slaughtering and meat packing.
- [f] Dyeing and finishing textiles; Carpets and rugs, other than rag; Electrical machinery, apparatus, and supplies; Iron and steel, steel works and rolling mills; Railroad repair shops, steam; Smelting and refining copper, lead, and zinc; Tobacco, cigars, and cigarettes.
- [g] Foundry and machine-shop products; Petroleum refining.
- [h] Railroad repair shops, electric.

[2] The industries represented by the figures in this column are:
- [a] Automobiles; Automobiles, bodies and parts.
- [b] Agricultural implements; Cars, steam-railroad; Rubber tires, inner tubes, and rubber goods, not elsewhere specified.
- [c] Cotton manufactures; Confectionery; Iron and steel, blast furnaces; Knit goods; Petroleum refining; Shipbuilding, steel; Silk goods.
- [d] Clothing, men's; Clothing, women's; Paper and wood pulp; Printing and publishing, book and job; Printing and publishing, newspapers and periodicals; Woolen and worsted goods; Shirts.
- [e] Boots and shoes; Carpets and rugs, other than rag; Chemicals; Dyeing and finishing textiles; Electrical machinery, apparatus and supplies; Furniture; Glass; Iron and steel, steel works and rolling mills; Liquors, malt; Lumber, planing-mill products; Leather, tanned, curried, and finished.
- [f] Brick and tile, terra-cotta, and fire-clay products; Flour-mill and gristmill products; Foundry and machine shop products; Mineral and soda waters; Railroad repair shops—electric; Railroad repair shops—steam; Tobacco, cigars and cigarettes.
- [g] Bread and other bakery products; Lumber and timber products; Slaughtering and meat packing; Smelting and refining, copper, lead, and zinc.

[3] The industries represented by the figures in this column are:
- [a] Automobiles; Cars, steam-railroad; Glass.
- [b] Confectionery.
- [c] Automobiles, bodies and parts; Agricultural implements; Cotton manufactures; Chemicals; Knit goods; Liquors, malt; Petroleum refining; Mineral and soda waters; Tobacco, cigars and cigarettes.
- [d] Flour-mill and gristmill products; Lumber, planing-mill products; Lumber and timber products; Paper and wood pulp; Printing and publishing, book and job; Printing and publishing, newspapers and periodicals; Shipbuilding, steel; Silk goods.
- [e] Boots and shoes; Clothing, men's; Clothing, women's; Dyeing and finishing textiles; Furniture; Iron and steel, blast furnaces; Leather, tanned, curried, and finished; Railroad repair shops—electric; Rubber tires, inner tubes, and rubber goods, not elsewhere specified; Shirts; Slaughtering and meat packing; Smelting and refining, copper, lead, and zinc.
- [f] Brick and tile, terra-cotta and fire-clay products; Carpets and rugs, other than rag; Electrical machinery, apparatus and supplies; Railroad repair shops—steam; Woolen and worsted goods.
- [g] Bread and other bakery products; Foundry and machine shop products; Iron and steel, steel works and rolling mills.

[4] The industries represented by the figures in this column are:
- [a] Liquors, malt.
- [b] Printing and publishing, newspapers and periodicals.
- [c] Automobiles; Glass; Knit goods; Lumber, planing-mill products; Mineral and soda waters; Smelting and refining, copper, lead, and zinc; Shirts; Tobacco, cigars and cigarettes.
- [d] Automobiles, bodies and parts; Confectionery; Printing and publishing, book and job.
- [e] Agricultural implements; Boots and shoes; Bread and other bakery products; Dyeing and finishing textiles; Flour-mill and grist mill products; Furniture; Railroad repair shops—electric; Silk goods.
- [f] Chemicals; Electrical machinery, apparatus, and supplies; Petroleum refining; Woolen and worsted goods.
- [g] Brick and tile, terra-cotta and fire-clay products; Clothing, women's; Cotton manufactures; Paper and wood pulp.
- [h] Carpets and rugs, other than rag; Cars, steam-railroad; Clothing, men's; Foundry and machine shop products; Lumber and timber products; Railroad repair shops—steam.
- [i] Leather, tanned, curried, and finished; Rubber tires, inner tubes, and rubber goods, not elsewhere specified; Shipbuilding, steel.
- [j] Slaughtering and meat packing.
- [k] Iron and steel, steel works and rolling mills.
- [l] Iron and steel, blast furnaces.

[5] The industries represented by the figures in this column are:
- [a] Smelting and refining, copper, lead, and zinc.
- [b] Automobiles; Automobiles, bodies and parts.
- [c] Iron and steel, steel works and rolling mills.
- [d] Cars, steam-railroad; Chemicals; Foundry and machine shop products; Liquors, malt; Railroad repair shops—Electric.
- [e] Agricultural implements; Glass; Iron and steel, blast furnaces; Lumber and timber products; Mineral and soda waters; Tobacco, cigars and cigarettes.
- [f] Electrical machinery, apparatus, and supplies; Petroleum refining; Railroad repair shops—steam; Shipbuilding, steel.
- [g] Confectionery; Knit goods; Lumber, planing-mill products; Paper and wood pulp; Rubber tires, inner tubes, and rubber goods, not elsewhere specified; Shirts.

Footnote [5]—Continued.
- [h] Boots and shoes; Brick and tile, terra-cotta and fire-clay products; Cotton manufactures; Flour-mill and gristmill products; Furniture; Leather, tanned, curried, and finished; Silk goods.
- [i] Dyeing and finishing, textiles; Slaughtering and meat packing.
- [j] Bread and other bakery products; Clothing, women's; Printing and publishing, newspapers and periodicals.
- [k] Clothing, men's; Printing and publishing, book and job; Woolen and worsted goods.
- [l] Carpets and rugs, other than rag.

[6] The industries represented by the figures in this column are:
- [a] Tobacco, cigars, and cigarettes.
- [b] Flour-mill and gristmill products; Liquors, malt; Smelting and refining, copper, lead, and zinc.
- [c] Confectionery; Glass; Shirts.
- [d] Agricultural implements; Automobiles; Boots and shoes; Bread and other bakery products; Chemicals; Mineral and soda waters; Petroleum refining.
- [e] Automobiles, bodies and parts; Cotton manufactures; Knit goods.
- [f] Dyeing and finishing textiles; Lumber and timber products; Railroad repair shops—electric; Shipbuilding, steel.
- [g] Lumber and planing-mill products; Paper and wood pulp; Silk goods; Slaughtering and meat packing.
- [h] Clothing, men's; Clothing, women's; Electrical machinery, apparatus, and supplies; Printing and publishing, newspapers and periodicals; Railroad repair shops—steam.
- [i] Cars, steam railroad; Foundry and machine shop products; Iron and steel, blast furnaces; Printing and publishing, book and job; Rubber tires, inner tubes, and rubber goods, not elsewhere specified.
- [j] Brick and tile, terra-cotta and fire-clay products; Furniture; Woolen and worsted goods.
- [k] Iron and steel, steel works and rolling mills.
- [l] Leather, tanned, curried, and finished.
- [m] Carpets and rugs, other than rag.

[7] The industries represented by the figures in this column are:
- [a] Shirts; Tobacco, cigars and cigarettes.
- [b] Smelting and refining, copper, lead, and zinc.
- [c] Boots and shoes; Flour-mill and gristmill products.
- [d] Agricultural implements; Cotton manufactures; Glass; Leather, tanned, curried, and finished.
- [e] Bread and other bakery products; Chemicals; Petroleum refining; Knit goods.
- [f] Automobiles; Clothing, men's; Confectionery; Dyeing and finishing textiles; Shipbuilding, steel.
- [g] Cars, steam railroads; Iron and steel, blast furnaces; Paper and wood pulp; Railroad repair shops—electric; Railroad repair shops—steam; Silk goods; Slaughtering and meat packing; Woolen and worsted goods.
- [h] Clothing, women's.
- [i] Automobiles, bodies and parts; Electrical machinery, apparatus and supplies; Lumber and timber products.
- [j] Foundry and machine-shop products; Iron and steel, steel works and rolling mills; Lumber, planing-mill products; Printing and publishing, book and job.
- [k] Brick and tile, terra-cotta and fire-clay products; Printing and publishing, newspapers and periodicals.
- [l] Carpets and rugs, other than rag; Rubber tires, inner tubes, and rubber goods, not elsewhere specified.
- [m] Furniture.

wage earners received real earnings per capita which were 20 to 25 per cent greater than the average wage earner in the same industry received in 1914. In two industries in the same year the wage earners received per capita 15 to 20 per cent more than in the same industries in 1914. In 1921 the largest single group of industries, seven in number, received per capita real earnings from 10 to 15 per cent greater than were received by wage earners in the same industries in 1914. But in five industries the wage earners received in 1921 per capita real earnings between 5 and 10 per cent less than they received in 1914. These five industries, moreover, included 6.7 per cent of all manufacturing wage earners. In the right-hand columns, under each census year, are the percentages borne by the wage earners employed in the group of industries to the left, to all manufacturing wage earners.

TABLE 96.—MEDIAN, DECIL,[1] AND EXTREME INDUSTRY RELATIVES OF THE PURCHASING POWER OF ESTIMATED MONEY EARNINGS RECEIVED, PER CAPITA, IN EACH CENSUS YEAR: 1899–1925

[1914=100]

	1899 [2]	1904	1909	1914	1919	1921	1923	1925 [3]
Maximum relative	124	114	121	100	146	141	180	166
Ninth decil	114	109	117	100	128	124	158	156
Eighth decil	112	106	114	100	122	117	153	153
Seventh decil	108	104	112	100	117	111	148	145
Sixth decil	107	102	111	100	112	109	144	138
Median	102	100	109	100	109	106	139	136
Fourth decil	99	99	108	100	108	102	134	134
Third decil	98	96	104	100	102	96	128	129
Second decil	96	91	102	100	99	93	126	124
First decil	92	89	101	100	96	90	119	116
Minimum relative	87	81	91	100	88	68	97	108
All industries, average	105	101	111	100	118	103	146	143

[1] The deciles are those points in the percentage scale of relative real earnings which divide the whole number of relatives for each year into 10 equal groups.
[2] Only 39 industries used in 1899; "Automobiles, bodies and parts," and "Chemicals" not included.
[3] Only 39 industries used in 1925, data for "Mineral and soda waters" and "Liquors, malt," not being available.

The identity of the industries making up the groups in the left-hand columns, is indicated in the footnote.

The 41 selected industries are arranged in a somewhat different way, in respect to real earnings, in Table 96, which shows for each census year the relative real earnings figure for the industry which had in that year the lowest relative of real earnings and at the other end of the scale, at the top of the column, the relative real earnings figure for the industry which had the highest real earnings relative; between these two extremes are listed the corresponding relatives pertaining to whatever industries occupied the median and decil positions when the industries were arranged according to the amount of their respective relatives of real earnings. The fluctuations and general variations in the concentration of the different industries around the median industry have been presented in graphic form in Figure 10 on page 71.

A summary for the 6 industrial divisions and the 14 groups of industries is given in Table 97 for each manufactures census year. It is

evident even from these figures, despite the fact that the individual vicissitudes of the separate industries are somewhat blurred, that some lines of industry have not shared the net gain in purchasing power over 1899 that was so clearly evident in the figures for all industries combined, as shown in this table and in Table 94. It is true that in the case of each of the 6 industrial divisions the 1923 level of real earnings was higher than the 1899 level. If, however, we examine the 14 groups of industries, we find that in tobacco manufactures the 1923 level of real earnings was exactly at the level of 1899. Moreover, in 8 of the 13 industry groups in which the 1923 levels are higher than that of 1899, there occurred more or less serious declines in real earnings between 1899 and 1914. The data of Table 97 are put into graphic form in Figure 25.

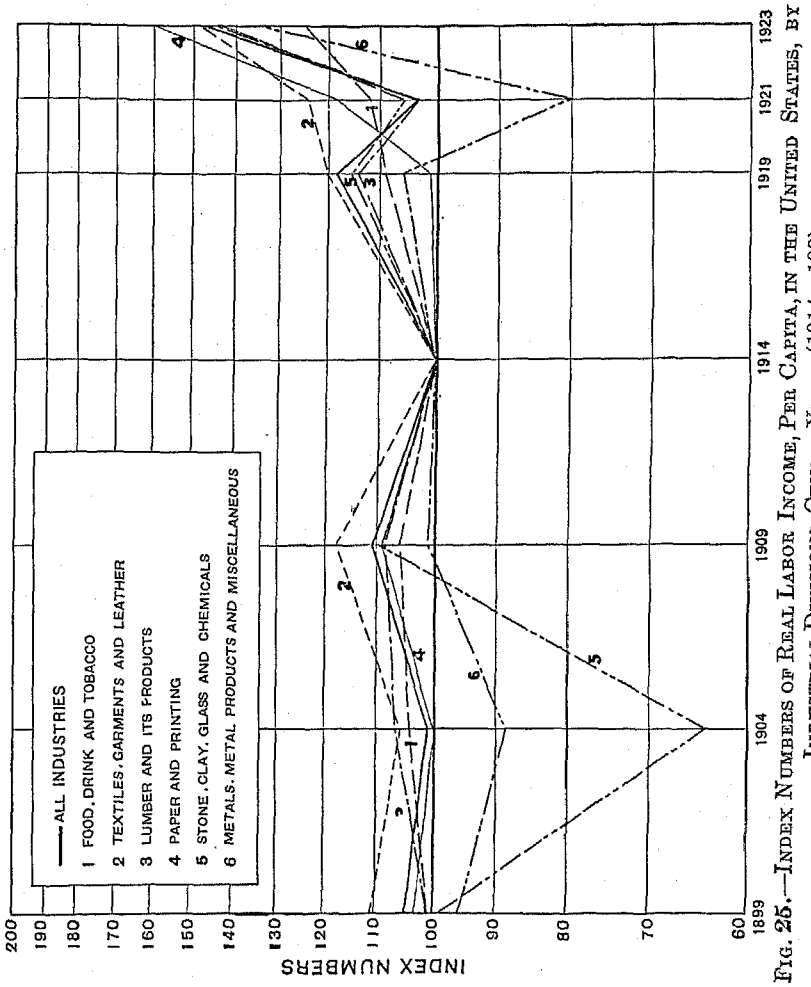

FIG. 25.—INDEX NUMBERS OF REAL LABOR INCOME, PER CAPITA, IN THE UNITED STATES, BY INDUSTRIAL DIVISIONS, CENSUS YEARS (1914=100)

TABLE 97.—RELATIVE FLUCTUATIONS IN REAL EARNINGS, PER CAPITA, IN THE UNITED STATES, BY INDUSTRIAL DIVISIONS AND GROUPS OF INDUSTRIES, CENSUS YEARS: 1899–1923

[1914=100]

INDUSTRY GROUP AND DIVISION	1899	1904	1909	1914	1919	1921	1923
All groups	105	101	111	100	118	103	146
I.—Food, drink, and tobacco	101	104	106	100	109	112	124
Food and kindred products	99	102	106	100	112	118	129
Liquors and beverages	103	104	102	100	91	98	103
Tobacco manufactures	111	111	111	100	108	104	117
II.—Textiles, garments, and leather	111	106	118	100	120	124	148
Textiles and products	100	95	109	100	111	115	137
Leather and its finished products	100	98	108	100	102	107	124
III.—Lumber and its products	101	107	108	100	114	103	144
IV.—Paper and printing	103	100	109	100	101	118	160
V.—Stone, clay, glass, and chemicals	99	64	109	100	115	106	144
Chemicals and allied products	97	104	106	100	122	111	149
Stone, clay, and glass products	99	108	110	100	106	101	140
VI.—Metals, metal products, and miscellaneous	96	89	101	100	106	80	133
Iron and steel and their products	107	99	114	100	120	84	147
Metals and metal products, other than iron and steel	112	105	115	100	108	84	141
Vehicles for land transportation	89	86	100	100	110	87	146
Railroad repair shops	112	105	116	100	121	103	146
Miscellaneous industries	105	98	111	100	121	90	146

ANNUAL INDEX OF THE PURCHASING POWER OF MANUFACTURING LABOR INCOMES

Annual indexes of real earnings from 1899 to 1927, for the 12 industries for which it has been possible to make interpolations, are presented in Table 98.

An examination of this table and of the Figure 26, drawn from its data, shows that 11 of the 12 industries are to be credited with higher levels of purchasing power in 1927 than in 1899. The exception is tobacco, cigars and cigarettes (1899 index, 113; 1927 index, 110). Of course, even among the 11 industries which showed a higher level in 1927 or 1925 than in 1899 there were in intervening years numerous cases where real earnings fell far below their level at the beginning of the period. This is especially noticeable in 1904, 1909, 1914, 1915, and 1921.

INTERPRETATION OF DATA ON CHANGES IN EARNINGS

Relative fluctuations in real earnings per capita for each of the 41 selected industries are indicated for census years in Table 99. There is evident here, of course, wide variations in the trend of real earnings as between the different industries. It is distinctly not to be inferred that the trend shown by these figures in the case of any industry represents the course of per capita earnings for all of the wage earners in that industry; it merely creates a presumption that that has been the course followed in respect of the real earnings of

the average worker. The figures, moreover, as has been pointed out, can be taken to represent the course of real earnings for any definite group of workers only to the degree that there is evidence that that group of wage earners remained fairly homogeneous throughout the period surveyed. If it did not remain homogeneous, the figures are certainly misleading and may be utterly worthless.[1] For example, if it should turn out in the case of any industry which

TABLE 98.—INDEX NUMBERS OF PURCHASING POWER OF MANUFACTURING LABOR INCOMES, PER CAPITA, FOR EACH OF 12 SELECTED INDUSTRIES, EACH YEAR: 1899–1927

[1914=100]

YEAR	Woolen goods	Cotton manufactures	Silk goods, including throwsters	Knit goods	Clothing, men's	Boots and shoes [1]	Automobiles	Iron and steel, steel works and rolling mills	Cars, steam-railroad [2]	Paper and wood pulp	Tobacco, cigars and cigarettes	Leather, tanned, curried, and finished
1899	87	100	99	99	101	107	93	114	92	98	113	108
1900	87	104	90	97	100	102	92	118	99	100	113	110
1901	106	102	87	94	99	105	93	89	101	98	109	106
1902	105	104	97	93	100	108	96	95	108	100	112	103
1903	98	102	95	89	95	102	92	90	100	94	106	101
1904	99	92	92	91	98	103	81	100	88	99	107	103
1905	114	92	98	134	102	109	90	118	105	101	106	103
1906	128	99	97	95	103	111	92	115	95	104	103	122
1907	126	107	100	90	99	111	97	117	92	101	100	113
1908	112	110	100	80	101	115	98	94	85	96	106	113
1909	116	104	106	103	111	113	91	121	92	100	104	113
1910	110	98	100	101	117	107	98	118	79	104	101	107
1911	106	94	98	99	122	104	88	118	96	102	99	105
1912	109	102	99	102	117	104	85	121	109	103	100	103
1913	99	105	102	100	117	101	90	116	106	100	100	102
1914	100	100	100	100	100	100	100	100	100	100	100	100
1915	104	99	104	103	104	101	90	108	80	100	93	103
1916	153	110	124	123	124	113	86	148	83	111	108	124
1917	130	111	116	113	125	118	101	142	98	100	114	107
1918	131	129	118	117	129	126	82	145	94	104	102	117
1919	112	117	106	99	122	108	97	143	123	117	96	128
1920	115	124	107	102	130	102	107	159	142	140	111	111
1921	126	112	114	109	129	111	75	87	92	107	96	111
1922	135	116	114	117	138	123	109	112	107	126	102	133
1923	159	130	143	134	148	129	128	161	153	141	106	168
1924	139	124	119	117	134	112	138	141	114	138	94	133
1925	138	120	138	127	130	116	134	152	138	135	109	122
1926	135	118	137	130	124	113	127	152	138	136	110	121
1927	138	123	139	136	125	114	127	151	142	136	110	121

[1] Not including rubber boots and shoes.
[2] Not including operations of railroad companies.

shows an apparent drop in real earnings, that during the interval when this apparent drop occurred there was introduced into the industry a considerably increased proportion of unskilled laborers, then the apparent downward trend of real earnings per capita would simply be the reflection of that infiltration of a different kind of labor—a more poorly paid kind of labor. It is evident, furthermore, that this industry into which larger proportions of unskilled labor have

[1] This subject was given some attention in Ch. I, but its importance in connection with changes in earnings seems to justify a more thorough discussion at this point.

been introduced may in 1925 actually be paying all or nearly all of those wage earners included in the figures for, say 1899, considerably higher wages than they were paid in 1899. The incomes of this group of skilled workers which originally made up the bulk of workers in the industry would then have risen appreciably, but we would

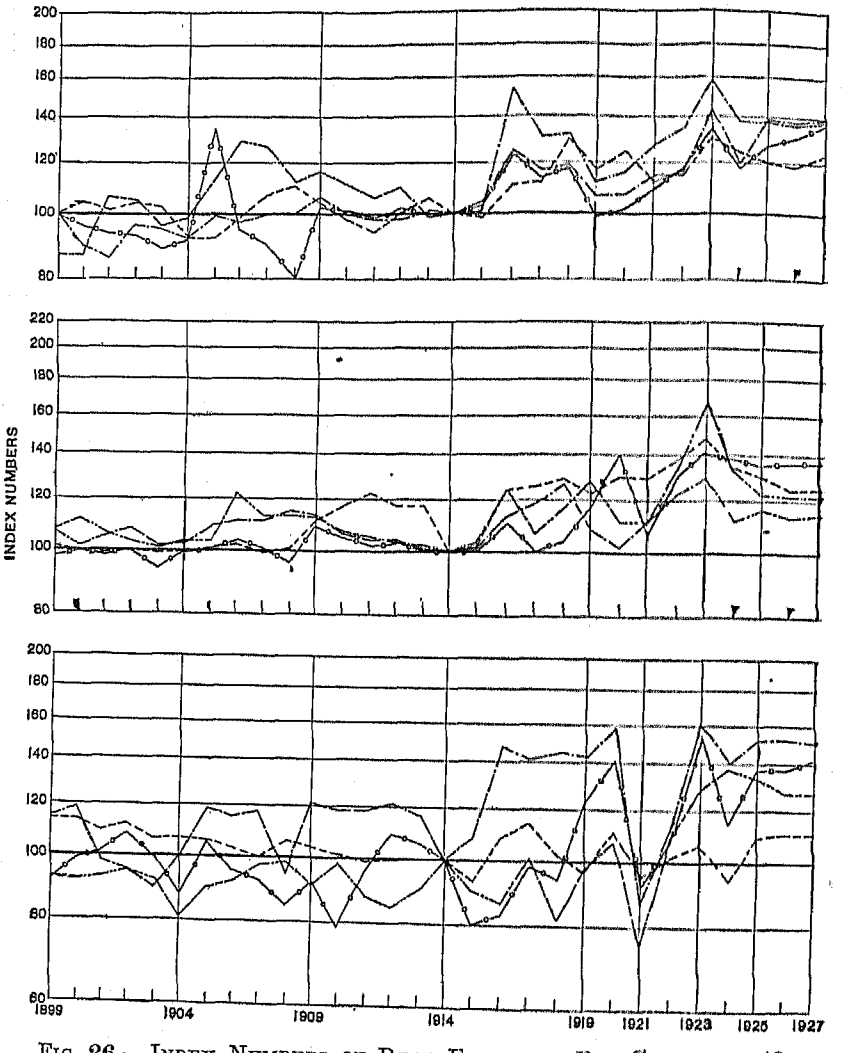

FIG. 26.—INDEX NUMBERS OF REAL EARNINGS, PER CAPITA, IN 12 SELECTED INDUSTRIES, EACH YEAR, 1899–1927 (1914=100)

not be aware of it, since we have only the figures showing per capita earnings for the whole wage-earnings personnel of the industry as the industry existed in each census year; and these figures, because of the infiltration of a lower-paid type of labor, show a diminution of per capita earnings despite the fact that there was actually an in-

crease in per capita earnings. Furthermore, there will have been no decrease in earnings even for the unskilled labor which was introduced into the industry. Their earnings may have remained the same, but the effect of their introduction into the industry, in

TABLE 99.—RELATIVE FLUCTUATIONS IN "REAL" EARNINGS, PER CAPITA, IN THE UNITED STATES, BY SELECTED INDUSTRIES, CENSUS YEARS: 1899–1925

[1914=100]

INDUSTRY	1899	1904	1909	1914	1919	1921	1923	1925
All industries				100				
Bread and other bakery products	98	112	120	100	109	121	128	129
Flour-mill and gristmill products	106	106	109	100	109	111	115	116
Confectionery	97	91	98	100	102	109	124	133
Slaughtering and meat packing	108	113	111	100	135	118	140	135
Liquors, malt	102	104	101	100	88	91	116	------
Mineral and soda waters	108	109	101	100	95	97	129	------
Tobacco, cigars and cigarettes	113	107	104	100	96	96	106	109
Carpets and rugs, other than rag	112	104	118	100	122	141	180	164
Shirts	109	99	111	100	96	105	122	108
Clothing, men's	101	98	111	100	122	129	148	130
Clothing, women's	96	96	111	100	117	124	149	142
Cotton manufactures	100	92	104	100	117	112	130	120
Dyeing and finishing textiles, exclusive of that done in textile mills	113	101	112	100	108	117	138	130
Knit goods	99	91	103	100	99	109	134	127
Silk goods, including throwsters	90	92	106	100	106	114	143	138
Woolen and worsted goods	87	99	116	100	112	126	159	138
Boots and shoes, not including rubber boots and shoes	107	103	113	100	108	111	129	116
Leather, tanned, curried, and finished	108	103	113	100	128	111	168	122
Furniture	103	101	111	100	108	114	155	166
Lumber and timber products	102	114	107	100	122	96	139	145
Lumber, planing-mill products, not including planing mills connected with sawmills	97	101	109	100	97	106	144	153
Paper and wood pulp	98	99	109	100	117	107	141	135
Printing and publishing, book and job	102	99	109	100	100	129	153	154
Printing and publishing, newspapers and periodicals	97	98	108	100	93	124	148	156
Chemicals	------	100	102	100	110	91	126	127
Petroleum refining	118	94	103	100	110	101	127	128
Brick and tile, pottery, terra-cotta, and fire-clay products	87	106	117	100	117	111	158	156
Glass	107	104	91	100	99	95	123	121
Iron and steel, blast furnaces	95	90	112	100	146	97	154	139
Iron and steel, steel works and rolling mills	114	100	121	100	143	87	161	152
Foundry and machine-shop products	118	108	121	100	120	93	152	150
Smelting and refining, copper, lead, and zinc	111	112	114	100	98	68	119	110
Automobile bodies and parts	------	84	102	100	101	79	134	145
Automobiles	93	81	91	100	97	75	128	134
Cars, steam-railroad, not including operations of railroad companies	92	88	92	100	123	92	153	138
Railroad repair shops—electric	124	109	114	100	105	90	137	136
Railroad repair shops—steam	112	105	117	100	122	104	147	137
Agricultural implements	95	89	101	100	105	96	127	124
Rubber goods	90	86	110	100	129	107	150	160
Shipbuilding, steel	99	91	105	100	128	103	136	134
Electrical machinery, apparatus, and supplies	110	102	116	100	110	102	145	146

the absence of separate reports of the wage payments to them, is that the industry appears as one in which per capita earnings have declined.

It is in this sort of situation that there is real danger in the interpretation of the figures. It is therefore of prime importance to

marshal whatever information can be assembled to throw ligh the question, Has this industry remained homogeneous throug the period? If it has remained practically homogeneous ther may safely use the figures as representing the trend in the real ings of the wage earners making up the work force of the indu If it has not remained homogeneous, then, in the degree that industry has changed in the character of labor it employs, to degree we must discount the data presented.

Of course, it is not only by the introduction of larger propor of skilled or of unskilled labor by which an industry's unifo homogeneous character is altered; its composition may be cha by readjustments in the proportion of the two sexes employe the industry. If in any given industry in 1921 there is twic large a proportion of women or of children employed than employed in 1899, we must not be surprised to note what app to be an unusually heavy decline in per capita earnings. Bu reality this is not a decline in per capita earnings. It is a mo less fortuitous result of the intermingling of cheaply paid labor highly paid labor, which, despite the fact that neither kind of l may be receiving lower earnings, produces an average which s to indicate that all or most of those employed in the industry received lower earnings.

Some figures bearing on this question of homogeneousness, sho the proportions of unskilled, semiskilled, and skilled labor, re tively, the proportions of women and children, and the proportic trade-unionists employed in different industries at the diffe periods, are given in Tables F and G in Part VI and in Tables 11 12 in Chapter I. The figures showing the proportions of women children employed have shown so little variation, except in the of an occasional industry, that there seems to be little need concern in regard to that factor. The available data indicating proportions of semiskilled and unskilled labor are much more mentary, and in some industries there is no evidence whatever reg ing changes which have taken place in the quality of labor. How even these inadequate figures ought to be of some help in interpre the results set forth and discussed in this and preceding chap As has been pointed out elsewhere, it is true that there are c factors which have a similar warping effect upon our figures, as the proportion of men organized in unions in the different indust the extent to which the nature of the industrial process has changed because of technological developments, and so forth.

REGIONAL VARIATIONS IN SELECTED INDUSTRIES

The geographic differences within identical industries in respec changes in real earnings are indicated in Table 100, which pres

TABLE 100.—RELATIVE FLUCTUATIONS OF "REAL" EARNINGS, PER CAPITA, IN EACH OF 24 SELECTED INDUSTRIES IN 2 LEADING STATES, CENSUS YEARS: 1899–1921

[1914=100]

INDUSTRY AND STATE	1899	1904	1909	1914	1919	1921
Tobacco, cigars and cigarettes:						
Florida	107	115	110	100	92	88
Pennsylvania	124	116	113	100	121	112
Clothing, men's:						
New York	118	105	116	100	137	141
Illinois	92	99	96	100	126	140
Clothing, women's:						
New York	103	96	112	100	123	131
Illinois	81	99	109	100	108	112
Cotton manufactures:						
Massachusetts	106	95	112	100	120	115
North Carolina	77	82	104	100	134	112
Knit goods:						
Pennsylvania	97	90	98	100	101	117
New York	103	92	111	100	100	113
Shirts:						
New York	116	101	117	100	106	119
Pennsylvania	107	105	113	100	85	95
Silk goods, including throwsters:						
Pennsylvania	81	84	102	100	107	119
New Jersey	98	87	105	100	105	109
Woolen goods:						
Massachusetts	100	98	107	100	118	121
Pennsylvania	105	92	107	100	127	119
Worsted goods:						
Massachusetts	101	93	107	100	110	115
Pennsylvania	100	95	104	100	125	122
Boots and shoes, not including rubber boots and shoes:						
Massachusetts	104	103	110	100	99	103
Missouri	100	105	120	100	92	108
Leather, tanned, curried, and finished:						
Massachusetts	112	102	109	100	118	114
Pennsylvania	100	97	106	100	125	115
Furniture:						
New York	111	106	113	100	110	120
Michigan	94	97	106	100	109	120
Lumber and timber products:						
Washington	100	108	114	100	116	87
Louisiana	86	108	99	100	112	81
Lumber, planing-mill products, not including planing mills connected with sawmills:						
New York	104	106	112	100	105	121
California	96	106	118	100	86	92
Paper and wood pulp:						
New York	100	101	109	100	119	120
Maine	93	97	111	100	112	117
Printing and publishing, newspapers and periodicals:						
New York	103	101	109	100	86	112
Illinois	94	109	111	100	90	129
Printing and publishing, book and job:						
New York	110	101	111	100	107	130
Illinois	92	96	104	100	102	118
Glass:						
Pennsylvania	114	120	108	100	112	97
West Virginia	87	112	113	100	108	107
Iron and steel, blast furnaces:						
Pennsylvania	86	83	100	100	136	91
Alabama	68	84	128	100	146	102
Iron and steel, steel works and rolling mills:						
Pennsylvania	109	96	114	100	140	81
Ohio	102	99	113	100	136	78
Foundry and machine-shop products:						
Ohio	104	98	112	100	117	84
New York	110	100	114	100	108	81
Agricultural implements:						
Illinois	87	87	96	100	93	77
Indiana	103	98	106	100	124	81
Electrical machinery, apparatus, and supplies:						
New York	112	100	120	100	105	79
Illinois	87	84	111	100	89	86
Chemicals:						
New Jersey	108	100	107	100	107	99
New York	102	100	105	100	116	93

the relatives for two leading States for each of 24 selected industries. For example, comparing 1899 with 1921 in the case of men's clothing, the index numbers indicate that while there was during that period a very large increase in the purchasing power of real earnings in this industry in New York, there was a still larger increase between 1914 and 1921, which more than compensated for the loss in purchasing power which occurred in that industry between 1899 and 1914. In Illinois there was, on the contrary, a gain in purchasing power between 1899 and 1914, and yet the latter year was followed by an increase in purchasing power just as great as the industry witnessed in New York, so that for Illinois we appear to have an increase in purchasing power of 52 per cent from 1899 to 1921. In women's clothing, although there was a net gain through the period, evidently a markedly different course was followed in New York from that in Illinois. In the case of silk goods there is a marked difference in the trend even between the two adjoining States of Pennsylvania and New Jersey; in the former State real earnings appear to have undergone a much larger increase between 1899 and 1921 than was the case in New Jersey. Almost the same situation appears to have prevailed in the woolen-goods industry as between Massachusetts and Pennsylvania. In iron and steel, the blast-furnace division of the industry, Pennsylvania appears to have witnessed only a slight gain in the purchasing power of money earnings, from 86 in 1899 to 91 in 1921, whereas in the same industry in Alabama there was an increase in purchasing power of money earnings from 68 to 102.

REGIONAL DIFFERENCES FOR MANUFACTURING INDUSTRY AS A WHOLE

A summary of the relatives of real earnings in each census year for different geographic regions is given in Table 101. The absolute

TABLE 101.—INDEX NUMBERS OF PURCHASING POWER (AT 1914 PRICE LEVEL) OF ANNUAL MONEY EARNINGS, PER CAPITA, IN THE UNITED STATES, ALL INDUSTRIES COMBINED, BY GEOGRAPHIC REGIONS AND DIVISIONS, CENSUS YEARS: 1899–1923

[1914=100]

REGION	1899	1904	1909	1914	1919	1921	1923
UNITED STATES	105	101	111	100	118	103	140
NORTHEAST	104	100	110	100	130	100	142
New England	109	104	114	100	127	97	133
Middle Atlantic	103	104	114	100	136	104	150
East North Central	96	97	105	100	129	100	137
West North Central	99	100	109	100	110	98	124
SOUTH	97	100	108	100	125	101	134
South Atlantic	96	97	107	100	131	104	137
East South Central	102	105	108	100	120	99	135
West South Central	98	105	107	100	110	96	124
WEST	101	107	118	100	102	91	122
Mountain	109	112	114	100	94	90	114
Pacific	98	105	122	100	104	92	124

amounts corresponding to these relatives were charted in Figure 18 (p. 139). Fluctuations in real earnings appear to have been determined chiefly by the fluctuations in the Northeast region, but it is noticeable that in 1919 real earnings in that section rose higher, relatively to 1914, than was true of the United States as a whole, and that in 1921, they dropped to a somewhat lower relative level than in the country at large. Each of the three regions saw real earnings at a higher relative level in 1923 than in 1899, the greatest gain being in the South, the least in the West. Yet in each of the three regions there occurred large declines in real earnings, lapses which were especially serious during the period from 1919 to 1921. An examination of the figures for the nine geographic regions in Table 101 will show that there was not one that did not see higher real earnings in 1923 than in 1899. The geographic division which witnessed the largest increase in purchasing power between 1899 and 1923 was the Middle Atlantic, and the one which experienced the smallest increase was the Mountain division.

A summary, showing the distribution of the 48 States and the District of Columbia, according to index numbers of real earnings per capita is given in Table 102. In an adjacent column are given the proportions of all manufacturing wage earners in the different groups of States, and in the footnotes to the table are given the names of the States in each group. As explained in connection with earlier

TABLE 102.—THE 48 STATES AND THE DISTRICT OF COLUMBIA AND THE WAGE EARNERS EMPLOYED THEREIN, DISTRIBUTED ACCORDING TO RELATIVE "REAL" ANNUAL EARNINGS, PER CAPITA PREVAILING IN EACH STATE, ALL INDUSTRIES COMBINED—CENSUS YEARS: 1899–1923

[In 1914 *all* of the States are in the relative earnings group 100-104, since 1914 is taken as the base, or 100]

RELATIVE "REAL" EARNINGS PER CAPITA (1914=100)	NUMBER OF STATES IN EACH RELATIVE EARNINGS GROUP AND PERCENTAGE BORNE BY AGGREGATE AVERAGE NUMBER OF WAGE EARNERS IN THAT GROUP OF STATES TO THE TOTAL NUMBER OF WAGE EARNERS IN ALL MANUFACTURING INDUSTRIES											
	1899		1904		1909		1919		1921		1923	
	Number [1]	Per cent	Number [2]	Per cent	Number [3]	Per cent	Number [4]	Per cent	Number [5]	Per cent	Number [6]	Per cent
75–79									[a] 2	0.22		
80–84	[a] 3	5.29	[a] 1	3.20			[a] 1	0.03	[b] 1	.07		
85–89	[b] 4	2.05	[b] 1	1.09			[b] 1	.21	[c] 6	2.98		
90–94	[c] 6	3.57	[c] 2	2.40	[a] 1	3.50	[c] 2	.34	[d] 5	5.60		
95–99	[d] 12	27.85	[d] 9	14.55	[b] 1	.12	[d] 3	3.13	[e] 15	27.42		
100–104	[e] 12	10.49	[e] 21	67.26	[c] 7	9.64	[e] 1	.12	[f] 10	38.09	[a] 1	0.10
105–109	[f] 5	32.60	[f] 8	8.44	[d] 11	20.95	[f] 2	1.23	[g] 7	24.16	[b] 3	.42
110–114	[g] 4	14.52	[g] 4	1.74	[e] 16	40.92	[g] 8	8.96	[h] 2	1.39	[c] 3	.30
115–119	[h] 3	3.85	[h] 2	1.11	[f] 12	24.96	[h] 5	3.00			[d] 6	4.38
120–124					[g] 1	.18	[i] 6	13.90			[e] 9	8.71
125–129			[i] 1	.16			[j] 6	13.30	[i] 1	.10	[f] 4	7.06
130–134							[k] 5	24.23			[g] 6	21.53
135–139							[l] 5	15.89			[h] 5	5.52
140–144							[m] 3	15.76			[i] 6	40.80
145–149											[j] 5	8.15
150–154											[k] 1	3.00
155–159												
160–164							[n] 1	.32				

(See next page for footnotes)

[1] The States represented by the numbers in this column are:
[a] Michigan, North Carolina, South Carolina.
[b] Idaho, Iowa, Oklahoma, West Virginia.
[c] Alabama, Arkansas, Georgia, North Dakota, Oregon, Utah.
[d] California, Florida, Illinois, Indiana, Maine, Maryland, Minnesota, Nebraska, New Mexico, Ohio, Vermont, Wisconsin.
[e] District of Columbia, Kansas, Kentucky, Louisiana, Mississippi, Missouri, Nevada, New Hampshire, South Dakota, Tennessee, Virginia, Washington.
[f] New York, Pennsylvania, Rhode Island, Texas, Wyoming.
[g] Delaware, Massachusetts, Montana, New Jersey.
[h] Arizona, Colorado, Connecticut.

[2] The States represented by the numbers in this column are:
[a] Michigan.
[b] South Carolina.
[c] Iowa, North Carolina.
[d] Idaho, Indiana, Maryland, Nebraska, North Dakota, Ohio, Vermont, Virginia, West Virginia.
[e] Alabama, California, District of Columbia, Florida, Georgia, Illinois, Kansas, Kentucky, Maine, Massachusetts, Minnesota, New Hampshire, New Jersey, New York, Oklahoma, Pennsylvania, Rhode Island, South Dakota, Texas, Utah, Wisconsin.
[f] Connecticut, Delaware, Missouri, Nevada, New Mexico, Oregon, Tennessee, Washington.
[g] Arizona, Arkansas, Louisiana, Wyoming.
[h] Colorado, Mississippi.
[i] Montana.

The States represented by the numbers in this column are:
[a] Michigan.
[b] Idaho.
[c] Indiana, Iowa, Nebraska, North Carolina, South Carolina, Virginia, West Virginia.
[d] Alabama, Arkansas, Illinois, Kentucky, Louisiana, Maryland, New Mexico, North Dakota, Ohio, Oklahoma, Tennessee.
[e] Florida, Georgia, Maine, Massachusetts, Minnesota, Mississippi, Missouri, Nevada, New Hampshire, New Jersey, Pennsylvania South Dakota, Texas, Utah, Vermont, Wisconsin.
[f] Arizona, California, Colorado, Connecticut, Delaware, District of Columbia, Kansas, New York, Oregon, Rhode Island, Washington, Wyoming.
[g] Montana.

[4] The States represented by the numbers in this column are:
[a] Nevada.
[b] Utah.

Footnote [4]—Continued.
[c] Idaho, Montana.
[d] California, Colorado, New Mexico.
[e] District of Columbia.
[f] North Dakota, Texas.
[g] Arkansas, Louisiana, Minnesota, Missouri, Oklahoma, Oregon, Tennessee, Washington.
[h] Iowa, Kentucky, South Dakota, Vermont, West Virginia.
[i] Florida, Illinois, Indiana, Nebraska, New Hampshire, Rhode Island.
[j] Alabama, Kansas, Massachusetts, Mississippi, Wisconsin, Wyoming.
[k] Connecticut, Georgia, Maine, Michigan, New York.
[l] Arizona, New Jersey, Ohio, South Carolina, Virginia.
[m] Maryland, North Carolina, Pennsylvania.
[n] Delaware.

[5] The States represented by the numbers in this column are:
[a] Montana, New Mexico.
[b] Arizona.
[c] Arkansas, Idaho, Mississippi, Nevada, Oregon, Washington.
[d] Connecticut, Florida, Louisiana, Utah, Vermont.
[e] Alabama, California, Colorado, Georgia, Indiana, Iowa, Massachusetts, Minnesota, Missouri, Nebraska, New Hampshire, North Dakota, Rhode Island, South Dakota, Wisconsin.
[f] Illinois, Kansas, Maine, Maryland, Michigan, Ohio, Pennsylvania, South Carolina, Tennessee, Texas.
[g] Delaware, Kentucky, New Jersey, New York, North Carolina, Oklahoma, West Virginia.
[h] District of Columbia, Virginia.
[i] Wyoming.

[6] The States represented by the numbers in this column are:
[a] Arizona.
[b] Montana, South Dakota, Utah.
[c] Idaho, Nevada, New Mexico.
[d] Arkansas, Colorado, Iowa, Louisiana, Minnesota, Nebraska.
[e] Florida, Georgia, Mississippi, Missouri, North Dakota, Oregon, Texas, Vermont, Washington.
[f] California, Kansas, New Hampshire, Wisconsin.
[g] Illinois, Indiana, Maine, Massachusetts, South Carolina, Tennessee.
[h] Alabama, Maryland, Oklahoma, Rhode Island, West Virginia.
[i] Delaware, Michigan, New York, Ohio, Pennsylvania, Virginia.
[j] District of Columbia, Kentucky, New Jersey, North Carolina, Wyoming.
[k] Connecticut.

tables, the figures given in the left-hand column under each census year represent (in this case) the number of States in which manufacturing wage earners for all industries combined received per capita earnings bearing the indicated relationship to earnings in 1914. The percentages to the right show what proportion of all manufacturing wage earners were in these States. Thus, in 1899 in 24 States, employing 38 per cent of all manufacturing wage earners, real earnings were within 5 per cent of their level in 1914. In four States the per capita real earnings were between 10 and 15 per cent higher than they were in 1914. In 1904, in 21 of the 49 States (employing 67 per cent of the country's wage earners), real earnings were from 1 to 5 per cent higher than they were in 1914. In 1909, in 18 of the States (employing 30 per cent of all manufacturing wage earners), per

capita real earnings were between 1 and 10 per cent higher than they were in 1914. In 1921, in 17 of the States (employing 62 per cent of all manufacturing wage earners), per capita real earnings were between 1 and 10 per cent higher than per capita earnings in those same States in 1914, and in 2 States (employing 1 per cent of the wage earners) they were between 10 and 15 per cent higher. In 1923, in 24 States (employing 43 per cent of all manufacturing wage earners), real earnings per capita were from 20 to 40 per cent higher than in 1914.

The results given in Table 102 are compressed somewhat in Table 103 and put in a slightly different form to show the high, low, median, and decil State relatives of real earnings.

TABLE 103.—MEDIAN, DECIL, AND HIGH AND LOW STATE RELATIVES OF ESTIMATED REAL EARNINGS, PER CAPITA, IN EACH CENSUS YEAR: 1899–1923

[1914=100]

	1899	1904	1909	1914	1919	1921	1923
Highest relative	116	126	123	100	163	126	150
Ninth decil	111	110	115	100	138	107	145
Eighth decil	108	107	110	100	133	105	143
Seventh decil	103	105	114	100	129	100	136
Sixth decil	103	104	112	100	125	100	132
Median	99	103	110	100	120	99	125
Fourth decil	98	101	109	100	116	96	123
Third decil	97	100	108	100	113	95	121
Second decil	93	99	106	100	107	90	117
First decil	88	95	103	100	97	85	111
Lowest relative	82	84	94	100	84	78	104

Detailed figures for each of the 48 States and the District of Columbia are given in Table 104. The differences between the western, the northeastern, and the southern regions, already remarked upon, is confirmed by wide differences between the trends in the Western States, shown separately, and the individual States in the Northeast and South. In some States, especially in the West, there were declines in real earnings between 1899 and 1919. In Colorado, for example, the decrease was from 116 to 97. The District of Columbia experienced, apparently, the smallest increase (between 1899 and 1919) of any State in the East and South, with the possible exception of Texas, the real earnings in the District having been 103 in 1899 and 104 in 1919.

When the comparison runs between 1899 and 1923, however, the results are much more gratifying. Only two States, Montana and Arizona, saw lower real earnings per capita in 1923 than in 1899. Colorado showed only a very slight gain, her indices being 116 and 117 for 1899 and 1923, respectively. In most of the States the 1923 level of real earnings was considerably above that of 1899. Most of the States suffered declines both in the decade preceding the war

and in 1921. There was no 1921 slump in the District of Columbia, and the slump in 1921 was relatively slight, so far as regards losses in real earnings, in Utah and Nevada.

TABLE 104.—RELATIVE FLUCTUATIONS IN THE PURCHASING POWER (AT 1914 PRICE LEVEL) OF PER CAPITA MONEY EARNINGS IN THE UNITED STATES, ALL INDUSTRIES COMBINED, BY STATES, CENSUS YEARS: 1899–1923

[1914=100]

STATE	1899	1904	1909	1914	1919	1921	1923
United States	105	101	111	100	118	103	146
Maine	96	101	110	100	132	102	130
New Hampshire	103	101	110	100	122	96	128
Vermont	98	99	110	100	117	94	124
Massachusetts	110	103	113	100	125	96	133
Rhode Island	108	104	115	100	123	99	135
Connecticut	116	107	117	100	131	93	150
New York	107	103	115	100	130	106	143
New Jersey	110	104	114	100	137	105	149
Pennsylvania	109	104	113	100	142	100	144
Ohio	98	99	109	100	136	100	141
Indiana	98	95	104	100	124	99	133
Illinois	99	100	108	100	120	100	132
Michigan	82	84	94	100	131	100	141
Wisconsin	98	100	110	100	125	95	129
Minnesota	99	100	110	100	114	97	119
Iowa	89	90	103	100	116	97	119
Missouri	103	105	112	100	113	98	123
North Dakota	92	97	106	100	106	99	121
South Dakota	101	100	113	100	116	96	108
Nebraska	97	98	104	100	122	98	117
Kansas	104	104	115	100	125	103	126
Delaware	111	105	117	100	163	105	144
Maryland	99	97	107	100	142	104	136
District of Columbia	103	104	117	100	104	111	147
Virginia	100	99	103	100	136	112	144
West Virginia	88	96	104	100	117	107	139
North Carolina	83	92	104	100	142	105	147
South Carolina	82	85	103	100	138	101	132
Georgia	94	100	114	100	133	99	123
Florida	99	104	112	100	120	91	121
Kentucky	103	102	107	100	115	109	145
Tennessee	103	105	107	100	114	100	130
Alabama	94	101	109	100	127	95	135
Mississippi	103	115	112	100	128	88	120
Arkansas	93	110	108	100	113	86	115
Louisiana	101	110	108	100	112	90	116
Oklahoma	85	100	108	100	111	107	138
Texas	105	103	112	100	107	100	122
Montana	114	126	123	100	90	79	109
Idaho	89	99	98	100	94	85	111
Wyoming	109	110	118	100	129	126	145
Colorado	116	115	118	100	97	96	117
New Mexico	97	107	109	100	97	78	112
Arizona	116	113	117	100	135	80	104
Utah	94	101	113	100	86	90	106
Nevada	103	109	112	100	84	87	114
Washington	101	107	116	100	113	85	122
Oregon	93	105	119	100	113	86	121
California	97	104	119	100	97	96	126

The fluctuations in real earnings per capita in each of 18 cities are reported in Table 105. In all cities the 1923 level of real earnings was higher than that of 1899. But all of the cities witnessed more or less serious declines in real earnings either in the decade before the war or in the postwar depression of 1921, or in both these periods.

So far as can be ascertained from census year data, Los Angeles and San Francisco suffered no decline between 1919 and 1921. In St. Paul the pre-war slump apparently was relatively slight. In Detroit there does not appear to have been a pre-war slump in real earnings. There is not a single exception to the general increase in real earnings between 1921 and 1923.

TABLE 105.—RELATIVE FLUCTUATIONS IN THE PURCHASING POWER (AT 1914 PRICE LEVEL) OF ANNUAL MONEY EARNINGS, PER CAPITA, IN CERTAIN SELECTED CITIES, CENSUS YEARS: 1899–1923

[1914=100]

CITY	1899	1904	1909	1914	1919	1921	1923
United States	105	101	111	100	118	103	146
Baltimore	100	99	111	100	143	106	134
Boston	118	105	111	100	113	95	130
Buffalo	97	95	107	100	128	99	134
Los Angeles	93	108	117	100	90	91	125
Minneapolis	99	96	107	100	106	92	115
New York	115	106	118	100	135	114	150
Oakland	91	99	123	100	104	93	122
Philadelphia	111	104	111	100	138	106	147
Pittsburgh	112	105	111	100	134	98	138
San Francisco	96	101	123	100	92	92	118
St. Louis	104	105	115	100	109	96	123
St. Paul	85	93	108	100	107	100	121
Seattle	109	105	115	100	115	89	118
New Orleans	112	106	118	100	111	99	118
Chicago	99	101	107	100	121	103	135
Cincinnati	105	102	115	100	116	103	134
Cleveland	100	98	107	100	134	96	138
Detroit	78	82	93	100	138	111	149

PERCENTAGE CHANGES IN SELECTED INDUSTRIES

The remaining tables of this chapter, instead of presenting the results in the form of fixed base relatives, are built of link relatives showing the direction and degree of change in real earnings, either between one manufactures census year and the next, or, in the case of a dozen industries, between successive years. In Table 106 is presented a conspectus of such changes in real earnings. It has been constructed by arranging the 41 selected industries according to the direction and percentage of change between each successive census year. For example, in this table it is shown that between 1899 and 1904 in 14 industries (employing 29 per cent of all manufacturing wage earners) there was a decline in real earnings from 1899 to 1904 of between 5 and 10 per cent; in 9 industries (employing 14 per cent of all wage earners) there was during the same interval a decline in real earnings of between 1 and 5 per cent; in 7 industries (employing 8 per cent of the wage earners) there was an increase of between 1 and 5 per cent. These three groups make up, then, a majority of the 41 industries, so that in more than three-fourths of them the change between 1899 and 1904 was less than 10 per cent, either up or down. In one industry, employing in 1904 only one-third of 1 per

cent of all manufacturing wage earners, however, the per capita real earnings underwent a decline of between 20 and 25 per cent. On the other hand, in two industries (Woolen and worsted goods and Bread and other bakery products), employing 4 per cent of all manufacturing wage earners, real earnings per capita rose between 10 and 15 per cent. A footnote to the table lists the industries represented by each entry in the left-hand columns.[3]

TABLE 106.—THE 41 SELECTED INDUSTRIES AND THE WAGE EARNERS EMPLOYED THEREIN, DISTRIBUTED ACCORDING TO THE DIRECTION AND DEGREE OF CHANGE (FROM CENSUS-YEAR TO CENSUS-YEAR) IN THE PER CAPITA "REAL" EARNINGS PREVAILING IN EACH INDUSTRY

DIRECTION AND DEGREE OF CHANGE	THE NUMBER OF INDUSTRIES IN EACH DEGREE-OF-CHANGE GROUP AND PERCENTAGE BORNE BY THE AVERAGE NUMBER OF WAGE EARNERS IN THOSE INDUSTRIES TO TOTAL NUMBER OF WAGE EARNERS IN MANUFACTURING INDUSTRY													
	1899–1904*		1904–1909		1909–1914		1914–1919		1919–1921		1921–1923		1923–1925†	
	No.[1]	Per cent	No.[2]	Per cent	No.[3]	Per cent	No.[4]	Per cent	No.[5]	Per cent	No.[6]	Per cent	No.[7]	Per cent
Real earnings *rose*	10	13.81	35	67.98	4	2.36	31	56.44	19	22.65	41	69.48	15	26.46
Percentage of rise:														
85–89.9											[a] 1	3.39		
80–84.9														
75–79.9														
70–74.9											[b] 2	1.27		
65–69.9											[c] 2	2.72		
60–64.9											[d] 1	4.63		
55–59.9											[e] 1	.27		
50–54.9											[f] 2	1.18		
45–49.9							[a] 1	0.42			[a] 1	5.24		
40–44.9							[b] 1	3.53			[h] 4	9.95		
35–39.9							[c] 1	1.40			[i] 3	3.55		
30–34.9									[a] 1	1.32	[j] 4	3.51		
25–29.9			[a] 1	.39			[d] 3	1.98	[b] 1	1.35	[k] 5	5.48		
20–24.9	[a] 1	2.24	[b] 3	4.66			[e] 6	20.48			[l] 3	5.33		
15–19.9			[c] 4	6.93			[f] 4	10.67	[c] 1	.25	[m] 8	17.51		
10–14.9	[b] 2	3.95	[d] 15	33.29	[a] 1	(‡)	[c] 2	3.94	[d] 2	3.39	[n] 1	.88		
5–9.9			[e] 9	11.14	[b] 2	1.69	[h] 8	9.91	[e] 9	11.42	[o] 2	4.00	[c] 6	8.56
Under 5	[c] 7	7.62	[f] 3	1.57	[c] 1	.67	[i] 5	4.11	[f] 5	4.02	[p] 1	.51	[b] 9	17.90
Percentage of fall:														
Under 5	[d] 9	13.59	[g] 3	5.18	[d] 10	14.13	[j] 7	9.10	[g] 2	5.76			[a] 9	13.20
5–9.9	[e] 14	29.32	[h] 2	9.94	[e] 12	26.05	[k] 2	1.85	[h] 5	5.98			[d] 10	23.89
10–14.9	[f] 5	13.49	[i] 1	1.17	[f] 11	18.45	[l] 1	.88	[i] 4	8.25			[e] 4	5.90
15–19.9					[g] 4	13.67			[j] 3	5.71				
20–24.9	[g] 1	.26							[k] 4	14.37				
25–29.9									[l] 1	.57			[f] 1	.08
30–34.9									[m] 2	.87				
35–39.9									[n] 1	4.12				
Real earnings *fell*	29	56.66	6	16.29	37	72.30	10	11.83	22	45.63			24	43.67
Total	39	70.47	41	74.27	41	74.66	41	68.27	41	68.28	41	69.48	39	70.13
Not covered in this table		29.53		25.73		25.34		31.73		31.72		30.52		29.87
Total wage earners, all manufacturing industries, number	4,712,763		5,468,383		6,615,016		7,036,247		9,096,372		8,778,173		8,384,201	

*Only 39 industries reported for 1899, data for "Automobile bodies and parts" and "Chemicals" being unavailable.

†Only 39 industries reported for 1925, data for "Liquors, malt," and "Mineral and soda waters" being unavailable.

‡Automobiles included in "Automobiles, bodies and parts."

[3] Compare Table 26 and Figure 11, which are based on the same set of link relatives as Table 106.

(See pp. 213 and 214 for footnotes to table.)

[1] The industries represented by the figures in this column are:
- [a] Brick and tile, pottery, terra-cotta, and fire-clay products.
- [b] Bread and other bakery products; Woolen and worsted goods.
- [c] Liquors, malt; Lumber planing-mill products, not including planing mills connected with sawmills; Mineral and soda waters; Paper and wood pulp; Printing and publishing, newspapers and periodicals; Slaughtering and meat packing; Smelting and refining, copper, lead, and zinc.
- [d] Boots and shoes, not including rubber boots and shoes; Cars, steam-railroad, not including operations of railroad companies; Clothing, men's; Clothing, women's; Flour-mill and gristmill products; Furniture; Glass; Printing and publishing, book and job; Rubber tires, tubes, and rubber goods, not elsewhere specified.
- [e] Agricultural implements; Carpets and rugs, other than rag; Cars and general shop construction and repairs by steam-railroad companies; Confectionery; Cotton manufactures; Electrical machinery, apparatus, and supplies; Foundry and machine-shop products; Iron and steel, blast furnaces; Leather, tanned, curried, and finished; Knit goods; Shipbuilding, steel; Shirts; Silk goods, including throwsters; Tobacco, cigars and cigarettes.
- [f] Automobiles; Cars and general shop construction and repairs by electric-railroad companies; Dyeing and finishing textiles, exclusive of that done in textile mills; Iron and steel, steel works and rolling mills; Lumber and timber products.
- [g] Petroleum refining.

[2] The industries represented by the figures in this column are:
- [a] Rubber tires, tubes, and rubber goods not elsewhere specified.
- [b] Automobiles, bodies and parts; Iron and steel, blast furnaces; Iron and steel, steel works and rolling mills.
- [c] Clothing, women's; Shipbuilding, steel; Silk goods, including throwsters; Woolen and worsted goods.
- [d] Agricultural implements; Automobiles; Brick and tile, pottery, terra-cotta, and fire-clay products; Carpets and rugs, other than rag; Cars and general shop construction and repairs by steam-railroad companies; Clothing, men's; Cotton manufactures; Dyeing and finishing textiles, exclusive of that done in textile mills; Electrical machinery, apparatus, and supplies; Foundry and machine-shop products; Knit goods; Printing and publishing, newspapers and periodicals; Printing and publishing, book and job; Paper and wood pulp; Shirts.
- [e] Boots and shoes, not including rubber boots and shoes; Bread and other bakery products; Cars and general shop construction and repairs by electric-railroad companies; Cars, steam-railroad, not including operations of railroad companies; Confectionery; Furniture; Leather, tanned, curried, and finished; Lumber, planing-mill products, not including planing mills connected with sawmills; Petroleum refining.
- [f] Chemicals; Flour-mill and gristmill products; Smelting and refining, copper, lead, and zinc.
- [g] Liquors, malt; Slaughtering and meat packing; Tobacco, cigars, and cigarettes.
- [h] Lumber and timber products; Mineral and soda waters.
- [i] Glass.

[3] The industries represented by the figures in this column are:
- [a] Automobiles.
- [b] Cars, steam-railroad, not including operations of railroad companies; Glass.
- [c] Confectionery.

Footnote [3]—Continued.
- [d] Agricultural implements; Automobiles, bodies and parts; Chemicals; Cotton manufactures; Knit goods; Liquors, malt; Mineral and soda waters; Petroleum refining; Shipbuilding, steel; Tobacco, cigars and cigarettes.
- [e] Clothing, men's; Flour-mill and gristmill products; Furniture; Lumber, planing-mill products, not including planing mills connected with sawmills; Lumber and timber products; Paper and wood pulp; Printing and publishing, book and job; Printing and publishing, newspapers and periodicals; Rubber tires, tubes, and rubber goods not elsewhere specified; Shirts; Silk goods, including throwsters; Slaughtering and meat packing.
- [f] Boots and shoes, not including rubber boots and shoes; Brick and tile, pottery, terra-cotta, and fire-clay products; Clothing, women's; Dyeing and finishing textiles, exclusive of that done in textile mills; Electrical machinery, apparatus, and supplies; Cars and general shop construction and repairs by electric-railroad companies; Iron and steel, blast furnaces; Leather, tanned, curried, and finished; Smelting and refining, copper, lead, and zinc; Woolen and worsted goods; Cars and general shop construction and repairs by steam-railroad companies.
- [g] Bread and other bakery products; Carpets and rugs, other than rag; Foundry and machine-shop products.

[4] The industries represented by the figures in this column are:
- [a] Iron and steel, blast furnaces.
- [b] Iron and steel, steel works and rolling mills.
- [c] Slaughtering and meat packing.
- [d] Leather, tanned, curried, and finished; Rubber tires, tubes, and rubber goods, not elsewhere specified; Shipbuilding, steel.
- [e] Carpets and rugs, other than rag; Cars and general shop construction and repairs by steam-railroad companies; Cars, steam-railroad, not including operations of railroad companies; Clothing, men's; Foundry and machine-shop products; Lumber and timber products.
- [f] Brick and tile, pottery, terra-cotta, and fire-clay products; Clothing, women's; Cotton manufactures; Paper and wood pulp.
- [g] Electrical machinery, apparatus, and supplies; Woolen and worsted goods.
- [h] Boots and shoes not including rubber boots and shoes; Bread and other bakery products; Dyeing and finishing textiles, exclusive of that done in textile mills; Flour-mill and gristmill products; Furniture; Chemicals; Petroleum refining; Silk goods.
- [i] Agricultural implements; Automobiles, bodies and parts; Cars and general shop construction and repairs by electric-railroad companies; Confectionery; Printing and publishing, book and job.
- [j] Automobiles; Glass; Knit goods; Lumber, planing-mill products, not including planing mills connected with sawmills; Shirts; Smelting and refining, copper, lead, and zinc; Tobacco, cigars and cigarettes.
- [k] Mineral and soda waters; Printing and publishing, newspapers and periodicals.
- [l] Liquors, malt.

[5] The industries represented by the figures in this column are:
- [a] Printing and publishing, newspapers and periodicals.
- [b] Printing and publishing, book and job.
- [c] Carpets and rugs other than rag.
- [d] Bread and other bakery products; Woolen and worsted goods.
- [e] Clothing, men's; Clothing, women's; Confectionery; Dyeing and finishing textiles, exclusive of that done in textile mills; Furniture; Knit goods; Lumber, planing-mill products, not including planing mills connected with sawmills; Shirts; Silk goods, including throwsters.

Footnote [5]—Continued.
- [f] Boots and shoes, not including rubber boots and shoes; Flour-mill and gristmill products; Liquors, malt; Mineral and soda waters; Tobacco, cigars and cigarettes.
- [g] Cotton manufactures; Glass.
- [h] Agricultural implements; Brick and tile, pottery, terra-cotta, and fire-clay products; Electrical machinery, apparatus, and supplies; Paper and wood pulp; Petroleum refining; Woolen and worsted goods.
- [i] Cars and general shop construction and repairs by electric-railroad companies; Cars and general shop construction and repairs by steam-railroad companies; Leather, tanned, curried, and finished; Slaughtering and meat packing.
- [j] Chemicals; Rubber tires, tubes, and rubber goods not elsewhere specified; Shipbuilding, steel.
- [k] Automobiles; Automobiles, bodies and parts; Foundry and machine-shop products; Lumber and timber products.
- [l] Cars, steam-railroad, not including operations of railroad companies.
- [m] Iron and steel, blast furnaces; Smelting and refining, copper, lead, and zinc.
- [n] Iron and steel, steel works and rolling mills.

[6] The industries represented by the figures in this column are:
- [a] Iron and steel, steel works, and rolling mills.
- [b] Automobiles, bodies and parts; Smelting and refining, copper, lead, and zinc.
- [c] Automobiles; Cars, steam-railroad, not including operations of railroad companies.
- [d] Foundry and machine-shop products.
- [e] Iron and steel, blast furnaces.
- [f] Cars and general shop construction and repairs by electric-railroad companies; Leather, tanned, curried, and finished.
- [g] Lumber and timber products.
- [h] Brick and tile, pottery, terra-cotta, and fire-clay products; Cars and general shop construction and repairs by steam-railroad companies; Electrical machinery, apparatus, and supplies; Rubber tires, tubes and rubber goods, not elsewhere specified.
- [i] Chemicals; Furniture; Lumber, planing-mill products, not including planing mills connected with sawmills.
- [j] Agricultural implements; Mineral and soda waters; Paper and wood pulp; Shipbuilding, steel.
- [k] Carpets and rugs, other than rag; Glass; Liquors, malt; Silk goods, including throwsters; Woolen and worsted goods.

Footnote [6]—Continued.
- [l] Clothing, women's; Knit goods; Petroleum refining.
- [m] Boots and shoes, not including rubber boots and shoes; Clothing, men's; Cotton manufactures; Dyeing and finishing textiles, exclusive of that done in textile mills; Printing and publishing, book and job; Printing and publishing, newspapers and periodicals; Shirts; Slaughtering and meat packing.
- [n] Confectionery.
- [o] Bread and other bakery products; Tobacco, cigars and cigarettes.
- [p] Flour-mill and gristmill products.

[7] The industries represented by the figures in this column are:
- [a] Automobiles, bodies and parts; Confectionery; Furniture; Lumber, planing-mill products, not including planing mills connected with sawmills; Printing and publishing, newspapers and periodicals; Rubber tires, tubes, and rubber goods not elsewhere specified.
- [b] Automobiles; Bread and other bakery products; Chemicals; Electrical machinery, apparatus, and supplies; Flour-mill and gristmill products; Lumber and timber products; Petroleum refining; Printing and publishing, book and job; Tobacco, cigars and cigarettes.
- [c] Agricultural implements; Brick and tile, pottery, terra-cotta, and fire-clay products; Cars and general shop construction and repairs by electric-railroad companies; Foundry and machine shop products; Glass; Paper and wood pulp; Shipbuilding, steel; Silk goods, including throwsters; Slaughtering and meat packing.
- [d] Boots and shoes, not including rubber boots and shoes; Carpets and rugs, other than rag; Cars and general shop construction and repairs by steam-railroad companies; Clothing, women's; Cotton manufactures; Dyeing and finishing textiles, exclusive of that done in textile mills; Iron and steel, blast furnaces; Iron and steel, steel works and rolling mills; Knit goods; Smelting and refining, copper, lead, and zinc.
- [e] Cars, steam-railroad, not including operations of railroad companies; Clothing, men's; Shirts; Woolen and worsted goods.
- [f] Leather, tanned, curried, and finished.

Between 1904 and 1909 in 15 industries (employing 33 per cent of all wage earners) real earnings rose between 10 and 15 per cent. Between 1909 and 1914 in 22 industries (employing 40 per cent of all wage earners) real earnings fell between 1 and 10 per cent; but in 3 industries (employing slightly more than 2 per cent of all wage earners) earnings rose between 1 and 10 per cent. Between 1914 and 1919, in 12 industries (employing 35 per cent of all manufacturing wage earners) real earnings rose between 10 and 25 per cent. Between 1919 and 1921, in 14 industries (employing 26 per cent of all wage earners) real earnings fell from 1 to 20 per cent; in 14 industries (employing 16 per cent of all wage earners) earnings rose from 1 to 10 per cent. Between 1921 and 1923 in 15 industries (employing 18 per cent of the wage earners) real earnings rose from 20 to 40 per cent; not a single industry showed a decline in per capita real earn-

ings between 1921 and 1923. Between 1923 and 1925, in 19 industries, employing 37 per cent of the wage earners, real earnings fell from 1 to 10 per cent, and in 15 industries, employing 26 per cent of the workers, they rose in the same proportions. There were no industry changes upward in this last biennial period greater than 10 per cent.

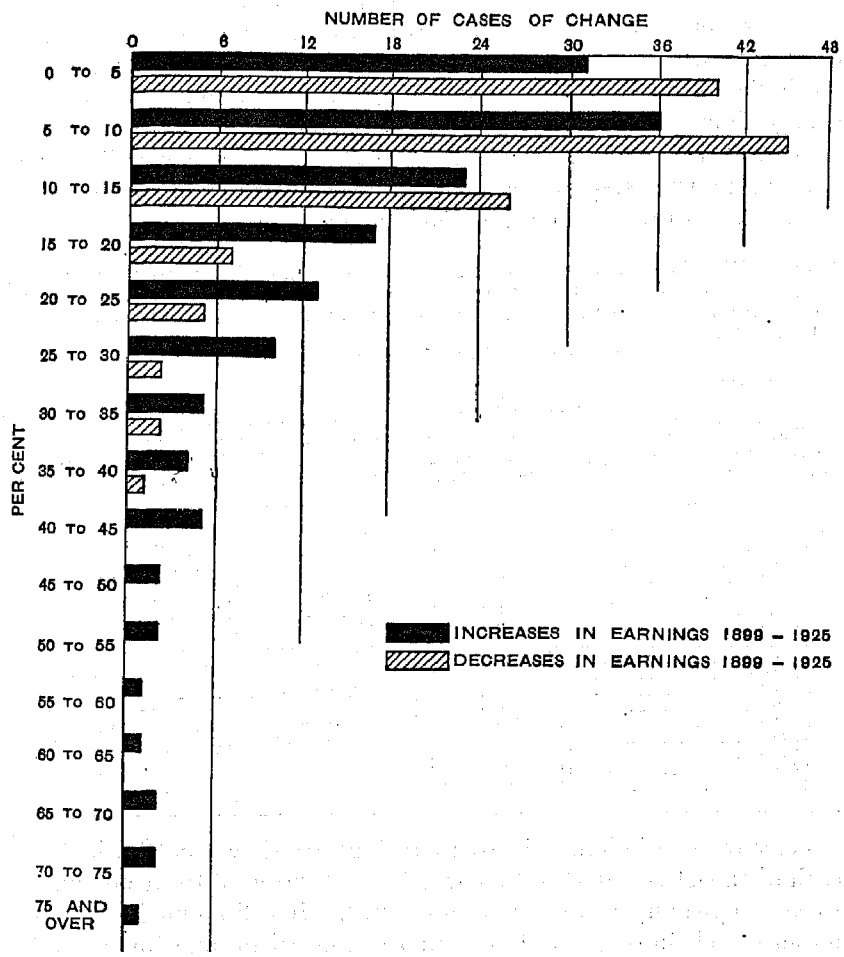

FIG. 27.—DISTRIBUTION OF 283 CASES OF CENSUS YEAR TO CENSUS YEAR CHANGES IN REAL LABOR INCOME, PER CAPITA, IN 41 SELECTED INDUSTRIES, 1899–1925

In 4 industries, however, real earnings fell between 10 and 15 per cent, and in 1 industry (leather) they fell between 25 and 30 per cent.

A summary of the distribution given in Table 106, showing the pre-war and postwar periods separately, is given in Table 107, whose data are charted in Figure 27. There is evident again here, as in

earlier tables of a similar sort, a greater degree of variation as between industries in the later than in the earlier period. The summary given in the last column, for the whole period from 1899 to 1925, shows a very pronounced degree of concentration, especially within the two lowest brackets of increase and decrease; that is to say, the great bulk of the changes which took place in real earnings between census years were changes amounting to less than 10 per cent. Of course, it is quite possible that we are overlooking intercensal changes not indicated in the table, which may easily minimize the degree of change shown, due to the cancellation of changes in intercensal years. Table 109, on page 219, with Figure 28, covering a small group of selected industries, shows changes for each year from 1899 to 1927 and serves to throw some light on this question.

TABLE 107.—DISTRIBUTION OF 121 CASES OF CENSUS YEAR TO CENSUS YEAR (INDUSTRY) CHANGES IN "REAL" EARNINGS FOR THE PERIOD 1899 TO 1914, COMPARED WITH SIMILAR DISTRIBUTION OF 162 CASES FOR THE PERIOD 1914–1925

[Based on link relatives for the 41 selected industries]

PER CENT OF CHANGE FROM PER CAPITA REAL EARNINGS OF THE PRECEDING CENSUS YEAR.	NUMBER OF CASES			PER CENT OF CHANGE FROM PER CAPITA REAL EARNINGS OF THE PRECEDING CENSUS YEAR	NUMBER OF CASES		
	1899–1914	1914–1923	1899–1923		1899–1914	1914–1925	1899–1925
Increases:				Decreases:			
85–89.9	-------	1	1	Under 5	22	18	40
70–74.9	-------	2	2	5–9.9	28	17	45
65–69.9	-------	2	2	10–14.9	17	9	26
60–64.9	-------	1	1	15–19.9	4	3	7
55–59.9	-------	1	1	20–24.9	1	4	5
50–54.9	-------	2	2	25–29.9	-------	2	2
45–49.9	-------	2	2	30–34.9	-------	2	2
40–44.9	-------	5	5	35–39.9	-------	1	1
35–39.9	-------	4	4				
30–34.9	-------	5	5	Total cases	121	102	283
25–29.9	1	9	10				
20–24.9	4	9	13	Increases	49	106	155
15–19.9	4	13	17	Decreases	72	56	128
10–14.9	18	5	23				
5–9.9	11	25	36				
Under 5	11	20	31				

Percentages of change in real earnings are shown in Table 108 for each of the 41 selected industries, for each interval from census year to census year up to and including 1923. It will be noticed that by no means all industries shared in the general decline between 1919 and 1921, nor did all industries participate in the increase of earnings which generally characterized the period from 1914 to 1919. Every industry did participate, however, in the increase between 1921 and 1923. Between 1919 and 1921, in the two divisions of the printing and publishing industry there were increases of 28.8 and 33.4 per cent, respectively. In the malt liquor industry, between 1914 and 1919, there was a decline of 12.1 per cent in per capita real earnings; on the other hand, the greatest percentage of increase (1914–1919) was apparently achieved by the blast-furnace division of the iron and

steel industry, where the increase was 46 per cent. That industry, moreover, was among those suffering the greatest declines in earnings between 1919 and 1921; indeed it was only exceeded in point of degree of decline by the other division of the iron and steel industry,

TABLE 108.—PERCENTAGE OF CHANGE IN ANNUAL "REAL" EARNINGS, PER CAPITA, FROM ONE CENSUS YEAR TO THE NEXT, FOR THE UNITED STATES, BY SELECTED INDUSTRIES: 1899–1925

INDUSTRY	PER CENT OF CHANGE FROM—						
	1899–1904	1904–1909	1909–1914	1914–1919	1919–1921	1921–1923	1923–1925
All industries	−3.5	10.0	−10.0	17.5	−12.1	41.0	−1.7
Bread and other bakery products	13.6	7.3	−16.5	9.3	11.1	5.7	.7
Flour-mill and gristmill products	−.3	3.3	−8.7	8.9	1.8	3.9	.9
Confectionery	−6.4	7.7	2.2	2.2	7.0	13.4	7.0
Slaughtering and meat packing	4.4	−2.0	−9.7	35.2	−12.4	18.3	−3.6
Liquors, malt	1.9	−2.7	−.9	−12.1	4.0	27.3	.....
Mineral and soda waters	1.6	−7.5	−1.2	−5.5	2.7	33.4	.....
Tobacco, cigars and cigarettes	−5.3	−2.3	−4.0	−4.1	.6	9.8	2.7
Carpets and rugs, other than rag	−6.7	13.0	−15.2	22.1	15.7	27.4	−9.1
Shirts	−8.7	11.8	−9.8	−4.2	9.7	16.6	−11.5
Clothing, men's	−2.6	12.7	−9.6	22.1	5.4	15.0	−12.3
Clothing, women's	−.4	15.8	−10.1	16.9	6.0	20.7	−5.2
Cotton manufactures	−7.4	12.9	−3.8	17.4	−4.1	15.4	−7.4
Dyeing and finishing textiles, exclusive of that done in textile mills	−10.6	10.8	−10.5	8.2	8.4	18.1	−5.8
Knit goods	−8.4	13.8	−3.1	−1.1	9.9	23.3	−5.1
Silk goods, including throwsters	−7.7	15.7	−5.6	6.5	6.6	25.6	−3.0
Woolen and worsted goods	14.0	16.8	−13.4	11.8	12.4	26.7	−13.5
Boots and shoes, not including rubber boots and shoes	−3.1	8.9	−11.1	7.9	2.6	16.3	−9.8
Leather, tanned, curried, and finished	−5.3	9.9	−11.3	28.6	−13.3	50.8	−27.3
Furniture	−1.6	9.5	−9.8	8.1	5.7	35.9	6.6
Lumber and timber products	12.0	−6.5	−6.5	22.1	−21.3	45.0	3.8
Lumber, planing-mill products, not including planing mills connected with sawmills	4.3	7.1	−8.0	−2.6	8.9	35.6	6.2
Paper and wood pulp	.7	10.2	−8.2	16.6	−7.8	30.9	−3.8
Printing and publishing, book and job	−2.9	10.3	−8.1	.1	28.8	18.4	.9
Printing and publishing, newspapers and periodicals	.6	10.2	−7.5	−6.8	33.4	18.8	5.5
Chemicals	.....	1.4	−1.7	9.5	−17.0	38.1	1.0
Petroleum refining	−20.5	9.2	−2.7	9.7	−7.5	24.8	.7
Brick and tile, pottery, terra-cotta, and fire-clay products	21.7	10.3	−14.7	17.3	−5.7	42.4	−.7
Glass	−2.4	−12.5	9.6	−1.1	−3.9	20.3	−1.4
Iron and steel, blast furnaces	−5.4	24.4	−10.5	46.0	−33.7	59.0	−9.4
Iron and steel, steel works and rolling mills	−12.4	20.9	−17.5	43.4	−39.5	85.8	−5.6
Foundry and machine-shop products	−8.8	12.4	−17.5	20.2	−22.6	63.5	−1.2
Smelting and refining, copper, lead, and zinc	.9	2.0	−12.6	−2.1	−30.4	74.4	−7.3
Automobile bodies and parts	.....	22.3	−2.4	1.5	−22.6	70.5	8.3
Automobiles	−12.8	11.7	10.0	−3.1	−22.1	69.6	4.3
Cars, steam-railroad, not including operations of railroad companies	−4.8	5.4	8.4	23.4	−25.1	66.2	−10.0
Railroad repair shops—electric	−12.3	5.1	−12.3	4.6	−14.2	52.6	−.6
Railroad repair shops—steam	−6.7	11.5	−14.3	21.5	−14.8	42.0	−7.2
Agricultural implements	−6.3	13.6	−1.3	4.9	−8.3	32.1	−2.8
Rubber goods	−4.4	27.6	−8.9	28.6	−16.8	40.3	6.9
Shipbuilding, steel	−7.3	15.0	−4.8	27.7	−19.2	32.1	−1.6
Electrical machinery, apparatus, and supplies	−7.1	13.6	−13.8	10.2	−7.8	42.6	1.1

where the decline was 39.5 per cent. The increases in real earnings between 1921 and 1923 ranged from 3.9 per cent in flour-mill and gristmill products to 85.8 per cent in steel works and rolling mills. Between 1923 and 1925 most of the changes were downward, but not

heavily so. The heaviest decline was in leather manufacture, 27.3 per cent. The greatest increase was one of 8.3 per cent, in automobile bodies and parts.

ANNUAL PERCENTAGES OF CHANGE IN 12 INDUSTRIES

Link relatives of real earnings for the 12 industries for which it has been possible to interpolate the intercensal years are reported in Table 109. The data of the table are plotted on a semilogarithmic scale in Figure 28, which is constructed in very much the same way as Figure 11. As in the earlier graph there is no fixed base and the slope of the lines is proportionate to the degree of change indicated by the data. In Figure 28 the dots on the vertical lines, 13 in number, represent, not, as they do in Figure 11, only the median, decil, and extreme industry cases of change, but each of the (12) industry cases, separately reported, in addition to the group described as "all industries," which includes all the industries reported by the census of manufactures. Each of the sloping, dotted lines, as indicated on the graph, represents 1 of the 12 industries reported in Table 109. The solid, black line represents the median industry group. This median line is not necessarily the "all industries line." The latter is made a heavy dotted line in all cases where it is not the median. In a general way, the fanning out of the industry lines gives a fairly good idea of the spread and concentration of single industries above and below the general trend for manufacturing industry as a whole. It also indicates the widely variant degrees of change in earnings in different industries. The extreme industry cases are labeled with the names of the industries to which they apply.

It would seem from an examination of these figures that the data of preceding tables, showing census year to census year changes, can be fairly well relied upon. There are, however, important exceptions, such, for example, as the changes between 1914 and 1919 in all industries combined, where we have, lurking behind the quinquennial census figure of 17.5 per cent rise between 1914 and 1915, a change of 7.6 per cent up, followed in the next year by a change of 15.8 per cent up, followed in the next year by a change of 7.1 per cent down, followed by a change of 5 per cent up, and that, finally, by a change of 5.4 per cent up. These changes are indicated in the census year to census year link relatives by the single figure +17.5 per cent, which, of course, falls far short of revealing all the facts. It may be noted that the maximum year-to-year increase, namely, the increase of 46.7 per cent between 1915 and 1916 in the woolen industry, is not indicated at all in our figures for census years, there being in the latter series of figures no greater increase shown in the woolen industry than 26.7 per cent (1909–1914). It is evident, therefore, that

TABLE 109.—YEAR TO YEAR CHANGES IN PURCHASING POWER OF ACTUAL LABOR INCOMES, PER CAPITA, ALL INDUSTRIES COMBINED, AND 12 SELECTED INDUSTRIES: 1899–1927

[Unit, 1 per cent]

PERIOD	All manufacturing industries [1]	Woolen goods	Cotton manufactures	Silk goods	Knit goods	Clothing, mens'	Boots and shoes
Code number	0	1	2	3	4	5	6
1899–1900	−2.0	+.0	4.2	−0.4	−2.3	−0.9	−4.0
1900–1901	2.2	22.2	−2.1	−3.2	−3.1	−1.3	2.1
1901–1902	2.8	−1.0	2.6	11.8	−1.0	1.6	2.9
1902–1903	−4.5	−8.2	−2.3	−2.0	−3.8	−5.5	−4.8
1903–1904	−1.9	2.6	−9.5	−4.0	1.5	3.7	1.0
1904–1905	11.0	15.0	−.7	7.6	47.8	3.7	5.6
1905–1906	2.2	12.3	8.4	−1.2	−29.6	.9	1.6
1906–1907	−3.6	−1.1	7.7	3.1	−4.4	−3.7	−.4
1907–1908	−10.4	−11.8	2.8	−.6	−12.1	1.5	3.9
1908–1909	12.3	3.6	−5.3	6.2	29.8	10.2	−2.0
1909–1910	−5.0	−5.1	−5.4	−5.6	−2.4	6.0	−4.5
1910–1911	−7.6	−3.6	−4.1	−1.5	−4.5	3.9	−3.1
1911–1912	9.8	3.0	7.9	.3	2.8	−3.6	−.6
1912–1913	1.0	−8.7	3.2	3.7	−2.2	−.6	−2.4
1913–1914	−7.5	.6	−4.8	−2.4	.2	−14.4	−1.1
1914–1915	7.6	4.2	−1.2	4.2	3.4	4.2	.9
1915–1916	15.8	46.7	11.4	19.4	19.3	18.6	12.3
1916–1917	−7.1	−15.0	.7	−6.8	−8.2	.9	4.3
1917–1918	5.4	1.1	16.3	1.8	3.7	3.3	6.5
1918–1919	−3.7	−15.0	−9.0	−9.8	−15.7	−5.2	−14.2
1919–1920	7.2	2.8	6.0	.7	2.9	6.4	−5.1
1920–1921	−18.0	9.3	−9.5	5.9	6.8	−.9	8.0
1921–1922	18.5	7.8	3.0	+.0	7.8	6.9	11.2
1922–1923	17.0	17.3	12.0	25.6	14.3	7.5	4.6
1923–1924	−7.5	−12.7	−4.8	−16.9	−12.6	−9.1	−13.2
1924–1925	6.0	−.9	−2.8	16.8	8.7	−3.5	3.9
1925–1926	1.0	−1.5	−1.7	−1.3	2.4	−4.2	−2.4
1926–1927	−2.5	2.2	4.3	2.0	4.5	.6	1.0

PERIOD	Automobiles	Iron and steel, steel works	Cars, steam-railroad	Paper and wood pulp	Tobacco, cigars and cigarettes	Leather, tanned
Code number	7	8	9	10	11	12
1899–1900	[2] −1.7	3.2	7.3	1.3	0.2	1.2
1900–1901	[2] 1.8	−24.7	1.7	−1.8	−3.4	−3.4
1901–1902	[2] 3.1	7.0	7.8	2.3	3.1	−2.8
1902–1903	[2] −4.5	−5.8	−7.8	−5.7	−5.7	−1.6
1903–1904	[2] −11.4	11.8	−12.3	4.8	.5	1.3
1904–1905	[2] 11.0	17.9	20.0	2.0	−.7	+.0
1905–1906	[2] 2.1	−3.1	−9.9	3.2	−3.0	18.7
1906–1907	[2] 5.0	2.2	−3.2	−2.8	−2.4	−7.1
1907–1908	1.3	−19.9	−7.1	−5.3	5.7	.2
1908–1909	−7.3	29.3	8.3	13.8	−1.6	−.5
1909–1910	7.9	−2.6	−14.8	−4.5	−3.4	−4.8
1910–1911	−10.0	−.3	22.6	−2.2	−1.5	−1.9
1911–1912	−4.0	2.6	12.8	.8	1.0	−2.0
1912–1913	6.6	−3.9	−2.2	−2.1	+.0	−1.1
1913–1914	10.7	−13.9	−6.0	−.5	+.0	−2.0
1914–1915	[3] −10.2	8.0	−20.4	−.5	−7.2	3.2
1915–1916	[3] −3.9	36.7	3.8	11.0	16.5	19.9
1916–1917	[2] 17.6	−3.6	19.0	−9.8	5.2	−13.5
1917–1918	−18.7	1.8	−4.4	3.1	−10.1	9.5
1918–1919	17.4	−1.0	31.2	12.6	−6.3	9.6
1919–1920	10.5	10.6	15.3	19.8	16.0	−13.3
1920–1921	−29.5	−45.3	−35.1	−23.1	−13.3	+.0
1921–1922	43.9	28.8	15.8	19.8	6.3	19.4
1922–1923	17.9	44.3	43.5	9.2	3.3	26.3
1923–1924	7.6	−12.5	−25.8	−2.2	−11.6	−20.7
1924–1925	−3.1	7.9	21.3	−1.7	16.2	−8.3
1925–1926	−5.0	−.2	−.4	.2	.5	−.6
1926–1927	.1	−.6	3.4	.1	+.0	+.0

[1] Including all manufacturing industries reported by the census.
[2] Derived from data for all industries combined.
[3] Based on Massachusetts data on automobiles.

CONSPECTUS OF YEAR TO YEAR CHANGES IN REAL INCOME

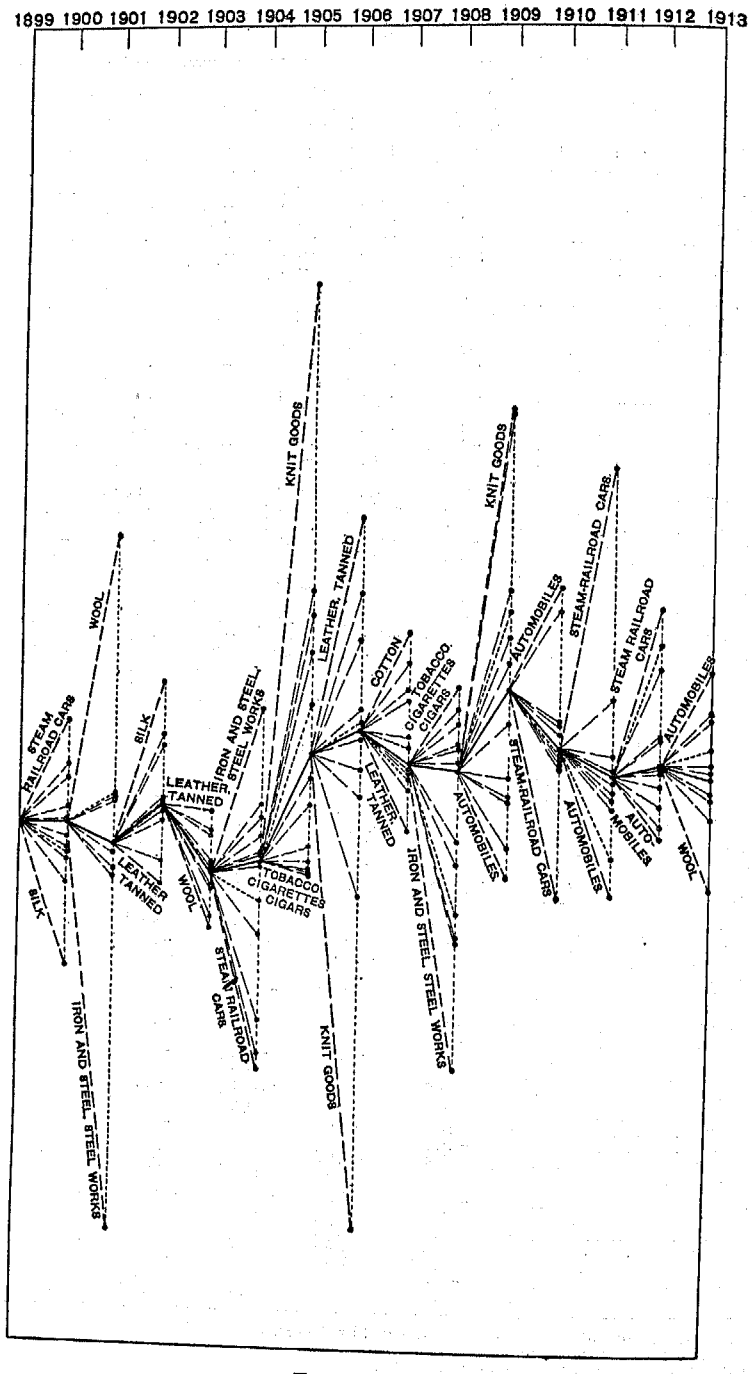

FIG. 28A

IN EACH OF 12 SELECTED INDUSTRIES: 1899–1927

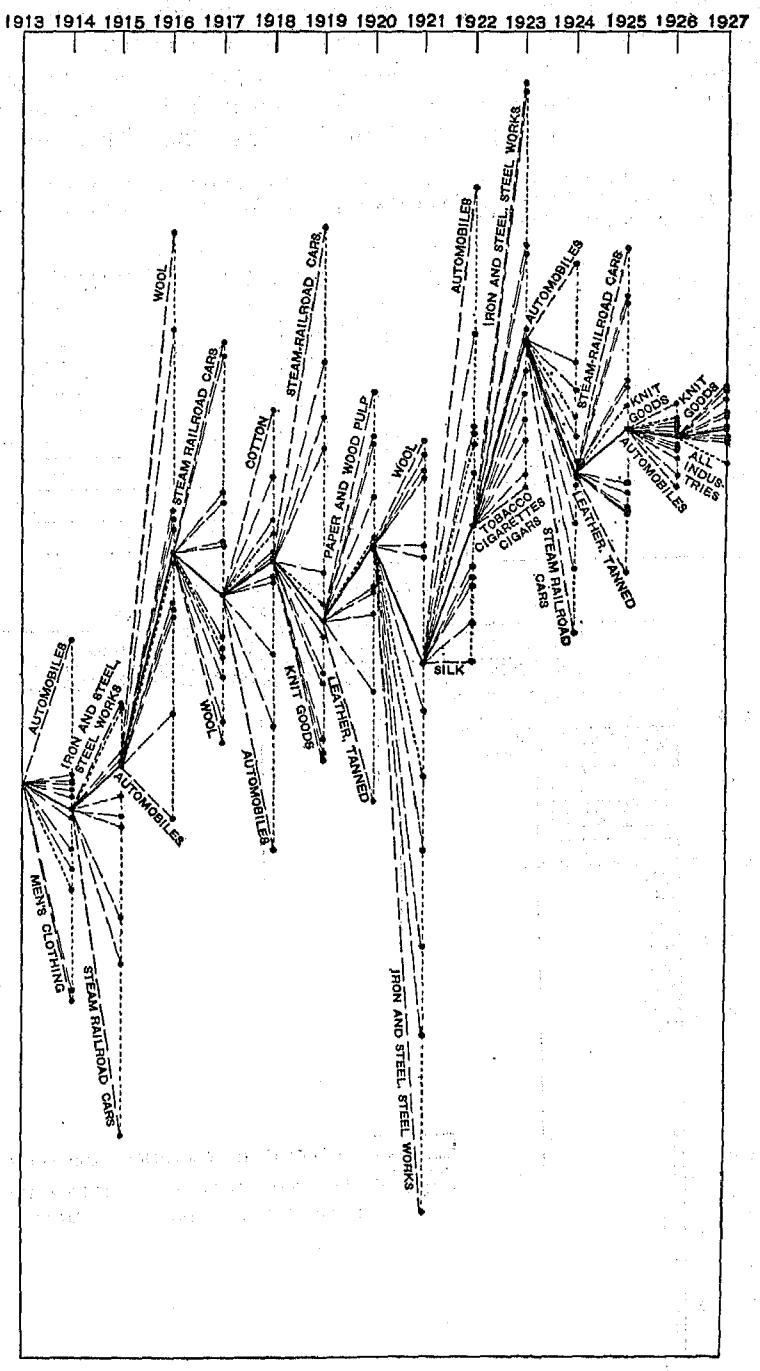

FIG. 28B

the year-to-year change series is likely to be more reliable than a series wherein only census years are shown, especially for those parts of the period when the census years are five years apart.

A simple distribution of the 336 cases of year-to-year changes in real earnings, shown in Table 109, is given in Table 110, the data of which are shown in graphic form in Figure 29. This summary

TABLE 110.—DISTRIBUTION OF 336 CASES OF YEAR-TO-YEAR CHANGE IN REAL EARNINGS, IN 12 SELECTED INDUSTRIES, AND ALL MANUFACTURING INDUSTRIES COMBINED: 1899–1927

PER CENT OF CHANGE FROM PER CAPITA REAL EARNINGS OF PRECEDING YEAR	Number of cases	PER CENT OF CHANGE FROM PER CAPITA REAL EARNINGS OF PRECEDING YEAR	Number of cases
Increases:		Decreases:	
45–49.9	2	Under 5	91
40–44.9	3	5–9.9	32
35–39.9	1	10–14.9	18
30–34.9	1	15–19.9	6
25–29.9	5	20–24.9	4
20–24.9	4	25–29.9	3
15–19.9	22	30–34.9	
10–14.9	18	35–39.9	1
5–9.9	35	45–49.9	1
Under 5	81	No change	8
		Total cases	336
		Increases	172
		Decreases	156

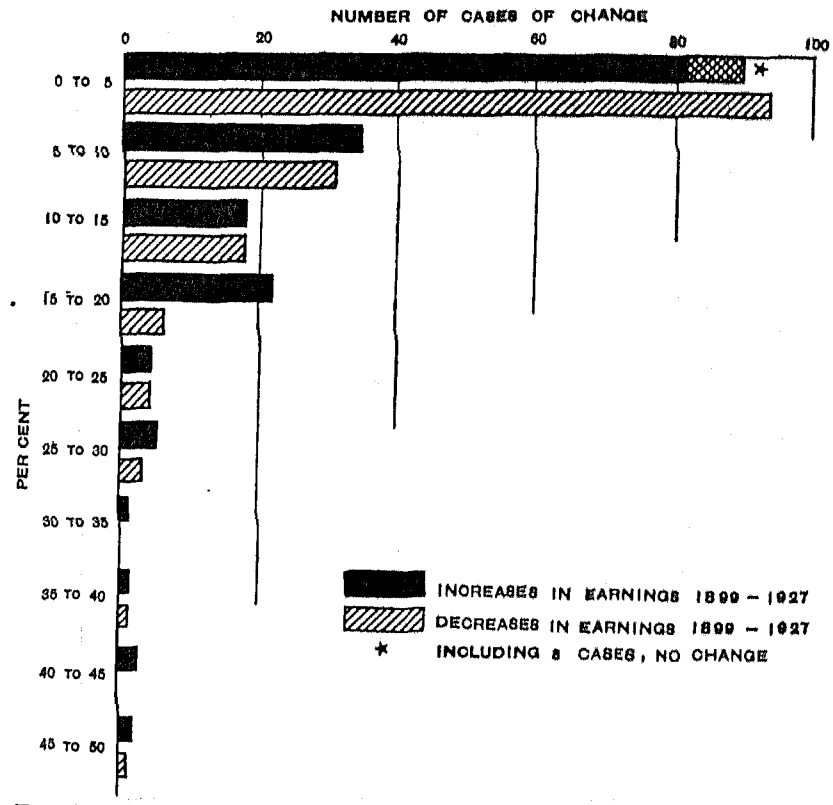

FIG. 29.—DISTRIBUTION OF 336 CASES OF YEAR TO YEAR CHANGE IN REAL LABOR INCOMES, PER CAPITA, IN 12 SELECTED INDUSTRIES: 1899–1927

shows that although there is a considerable degree of concentration around those changes which are less than 10 per cent in either direction, this concentration probably is not so great as appeared to be indicated by the figures given in Table 107.

PERCENTAGE CHANGES IN THE DIFFERENT STATES

The distribution of the 48 States with respect to census year to census year changes in real earnings is indicated in Table 111. It is very evident from this distribution of State changes that there is no less variation among States than among industries. Especially heavy concentration seems to occur in the period between 1904 and 1909, in which interval there were 21 States (employing 55.9 per cent of all manufacturing wage earners) in which the per capita earnings for all industries combined recorded increases ranging between 5 and 10 per cent. In the interval between 1919 and 1921 there were 20 States (employing 60.7 per cent of all wage earners) in which per capita real earnings suffered declines of from 20 to 30 per cent. In the preceding period, one of distinctly opposite and bullish tendencies, there were 26 States (employing 53.9 per cent of all wage earners) in which per capita real earnings increased from 10 to 30 per cent. In the biennial census period 1921–1923 there were 15 States (employing 48.1 per cent of the wage earners) in which increases in real earnings ranged between 35 to 45 per cent. Names of the States in the different groups are given in the lettered footnotes to the table.

Table 112 gives the distribution of 294 cases of State change in real earnings, showing pre-war and postwar periods separately, and, in general, reinforces the conclusions drawn from a similar summary of industry changes. Again, we find wider dispersion in the postwar than in the pre-war period. Detailed census-year-to-census-year changes in real earnings for each of the 49 States are given in Table 113. The State of Delaware has the distinction in the period of war-time expansion, from 1914 to 1919, of being the one in which the purchasing power of money earnings increased more than in any other State, the increase amounting to 63 per cent as compared with 17.5 per cent for the country as a whole. At the other extreme, we find Nevada, whose wage earnings, on the average, experienced a depreciation of real earnings from 1914 to 1919 of 16.4 per cent. In the period between 1919 and 1921, Delaware comes close to ranking first in point of extent of fall in purchasing power of money earnings, but her decline of 35.5 per cent is exceeded by one other State, Arizona, whose fall in per capita real earnings was 40.6 per cent. In the period 1914 to 1919 only seven States failed to share the general increase in per capita real earnings and in these seven States there were slumps in real earnings ranging from about 1 per cent in Colo-

rado to 16 per cent in Nevada. Between 1919 and 1921, there were only three States which showed an increase in the purchasing power of money earnings, namely, the District of Columbia, Utah and Nevada, the amount of increase being 5 per cent for Utah, and 4.3 per cent for Nevada. Not a single State failed to share in the increases in real earnings which took place between 1921 and 1923. These increases ranged from 12.6 per cent in South Dakota to 61.9 per cent in Connecticut.

TABLE 111.—CONSPECTUS OF STATE CHANGES IN REAL EARNINGS—THE 48 STATES AND THE DISTRICT OF COLUMBIA, AND THE WAGE EARNERS EMPLOYED THEREIN, DISTRIBUTED ACCORDING TO THE DIRECTION AND DEGREE OF CHANGE IN "REAL" EARNINGS, PER CAPITA, FROM CENSUS YEAR TO CENSUS YEAR—ALL INDUSTRIES COMBINED, CENSUS YEARS: 1899–1923

DIRECTION AND DEGREE OF CHANGE	THE NUMBER OF INDUSTRIES IN EACH DEGREE-OF-CHANGE GROUP AND PERCENTAGE BORNE BY THE AVERAGE NUMBER OF WAGE EARNERS IN THOSE INDUSTRIES TO TOTAL NUMBER OF WAGE EARNERS IN MANUFACTURING INDUSTRY											
	1899–1904		1904–1909		1909–1914		1914–1919		1919–1921		1921–1923	
	Number [1]	Per cent	Number [2]	Per cent	Number [3]	Per cent	Number [4]	Per cent	Number [5]	Per cent	Number [6]	Per cent
Number of States in which real earnings *rose*	32	39.01	44	97.46	2	3.62	42	96.99	3	0.36	49	100.03
Percentage of rise:												
60–64.9							[a] 1	.31			[a] 1	3.04
55–59.9												
50–54.9												
45–49.9												
40–44.9							[b] 3	16.67			[b] 7	31.81
35–39.9							[c] 4	15.04			[c] 8	16.20
30–34.9							[d] 5	9.82			[d] 16	36.98
25–29.9							[e] 5	23.47			[e] 6	6.23
20–24.9			[a] 1	1.00			[f] 7	10.04			[f] 7	5.92
15–19.9	[a] 2	.54					[c] 6	10.54			[c] 2	.59
10–14.9	[b] 6	2.67	[b] 16	37.35			[b] 8	7.86			[b] 2	.17
5–9.9	[c] 11	8.58	[c] 21	55.88	[a] 1	3.50	[f] 2	1.11	[a] 2	.33		
Under 5	[d] 13	28.12	[d] 6	3.14	[b] 1	.12	[f] 1	.13	[b] 1	.03		
Percentage of fall:												
Under 5	[c] 12	28.85	[c] 5	2.55	[c] 7	9.64	[b] 3	2.42	[c] 4	3.46		
5–9.9	[f] 5	31.46			[d] 16	27.91	[f] 1	.13	[d] 5	3.05		
10–14.9					[e] 19	56.30	[a] 2	.39	[e] 4	5.10		
15–19.9					[f] 5	2.81	[a] 1	.05	[f] 10	26.70		
20–24.9									[g] 12	30.29		
25–29.9									[b] 8	30.42		
30–34.9									[c] 1	.63		
35–39.9									[f] 1	.32		
40–44.9									[b] 1	.09		
Number of States in which real earnings *fell*	17	60.31	5	2.55	47	96.99	7	2.99	46	100.06	0	.00
Total		100.22		100.01		100.28		99.98		100.42		100.03

[1] The States represented by the numbers in this column are:
- [a] Arkansas, Oklahoma.
- [b] Idaho, Mississippi, Montana, New Mexico, North Carolina, Oregon.
- [c] Alabama, California, Florida, Georgia, Louisiana, Maine, Nevada, North Dakota, Utah, Washington, West Virginia.
- [d] District of Columbia, Illinois, Iowa, Michigan, Minnesota, Missouri, Nebraska, Ohio, South Carolina, Tennessee, Vermont, Wisconsin, Wyoming.
- [e] Arizona, Colorado, Indiana, Kansas, Kentucky, Maryland, New Hampshire, New York, Rhode Island, South Dakota, Texas, Virginia.
- [f] Connecticut, Delaware, Massachusetts, New Jersey, Pennsylvania.

[2] The States represented by the numbers in this column are:
- [a] South Carolina.
- [b] California, Delaware, District of Columbia, Georgia, Iowa, Kansas, Maryland, Michigan, New York, North Carolina, Ohio, Oregon, Rhode Island, South Dakota, Utah, Vermont.
- [c] Alabama, Connecticut, Florida, Illinois, Indiana, Kentucky, Maine, Massachusetts, Minnesota, Missouri, Nebraska, New Hampshire, New Jersey, North Dakota, Oklahoma, Pennsylvania, Texas, Washington, West Virginia, Wisconsin, Wyoming.
- [d] Arizona, Colorado, Nevada, New Mexico, Tennessee, Virginia.
- [e] Arkansas, Idaho, Louisiana, Mississippi, Montana.

[g] The States represented by the numbers in this column are:
- [a] Michigan.
- [b] Idaho.
- [c] Indiana, Iowa, Nebraska, North Carolina, South Carolina, Virginia, West Virginia.
- [d] Alabama, Arkansas, Illinois, Kentucky, Louisiana, Maine, Maryland, Minnesota, New Hampshire, New Mexico, North Dakota, Ohio, Oklahoma, Tennessee, Vermont, Wisconsin.
- [e] Arizona, Connecticut, Delaware, District of Columbia, Florida, Georgia, Kansas, Massachusetts, Mississippi, Missouri, Nevada, New Jersey, New York, Pennsylvania, Rhode Island, South Dakota, Texas, Utah, Washington.
- [f] California, Colorado, Montana, Oregon, Wyoming.

[i] The States represented by the numbers in this column are:
- [a] Delaware.
- [b] Maryland, North Carolina, Pennsylvania.
- [c] New Jersey, Ohio, South Carolina, Virginia.
- [d] Arizona, Connecticut, Georgia, Maine, Michigan.
- [e] Alabama, Massachusetts, Mississippi, New York, Wyoming.
- [f] Florida, Indiana, Kansas, Nebraska, New Hampshire, Rhode Island, Wisconsin.
- [g] Illinois, Iowa, Kentucky, South Dakota, Vermont, West Virginia.
- [h] Arkansas, Louisiana, Minnesota, Missouri, Oklahoma, Oregon, Tennessee, Washington.
- [i] North Dakota, Texas.
- [j] District of Columbia.
- [k] California, Colorado, New Mexico.
- [l] Idaho.
- [m] Montana, Utah.
- [n] Nevada.

[j] The States represented by the numbers in this column are:
- [a] District of Columbia, Utah.
- [b] Nevada.
- [c] California, Colorado, Oklahoma, Wyoming.
- [d] Idaho, Kentucky, North Dakota, Texas, West Virginia.
- [e] Minnesota, Missouri, Montana, Tennessee.
- [f] Illinois, Iowa, Kansas, Louisiana, Nebraska, New Mexico, New York, Rhode Island, South Dakota, Virginia.
- [g] Arkansas, Florida, Indiana, Maine, Massachusetts, Michigan, New Hampshire, New Jersey, Oregon, Vermont, Washington, Wisconsin.
- [h] Alabama, Connecticut, Georgia, Maryland, North Carolina, Ohio, Pennsylvania, South Carolina.
- [i] Mississippi.
- [j] Delaware.
- [k] Arizona.

[k] The States represented by the numbers in this column are:
- [a] Connecticut.
- [b] Alabama, Michigan, New Jersey, New Mexico, Ohio, Pennsylvania, Washington.
- [c] Delaware, Massachusetts, Mississippi, Montana, North Carolina, Oregon, Rhode Island, Wisconsin.
- [d] Arkansas, California, District of Columbia, Florida, Idaho, Illinois, Indiana, Kentucky, Maryland, Nevada, New Hampshire, New York, Tennessee, South Carolina, Vermont, West Virginia.
- [e] Arizona, Louisiana, Maine, Missouri, Oklahoma, Virginia.
- [f] Colorado, Georgia, Iowa, Kansas, Minnesota, North Dakota, Texas.
- [g] Nebraska, Utah.
- [h] South Dakota, Wyoming.

TABLE 112.—DISTRIBUTION OF 147 CASES OF PRE-WAR STATE CHANGES IN "REAL" EARNINGS FROM CENSUS YEAR TO CENSUS YEAR, COMPARED WITH SIMILAR DISTRIBUTION OF 147 POSTWAR CASES

[Based on link relatives for 48 States and District of Columbia]

PER CENT OF CHANGE FROM PER CAPITA "REAL" EARNINGS OF PRECEDING CENSUS YEAR	NUMBER OF CASES			PER CENT OF CHANGE FROM PER CAPITA "REAL" EARNINGS OF PRECEDING CENSUS YEAR	NUMBER OF CASES		
	1899–1914	1914–1923	1899–1923		1899–1914	1914–1923	1899–1923
Increases:				Decreases:			
60–64.9	-------	2	2	Under 5	24	7	31
55–59.9	-------	-------	-------	5–9.9	21	6	27
50–54.9	-------	-------	-------	10–14.9	19	6	25
45–49.9	-------	-------	-------	15–19.9	5	11	16
40–44.9	-------	10	10	20–24.9	-------	12	12
35–39.9	-------	12	12	25–29.9	-------	8	8
30–34.9	-------	21	21	30–34.9	-------	1	1
25–29.9	-------	11	11	35–39.9	-------	1	1
20–24.9	1	14	15	40–44.9	-------	1	1
15–19.9	2	8	10				
10–14.9	22	10	32	Total cases	147	147	294
5–9.9	33	4	37				
Under 5	20	2	22				

TABLE 113.—PERCENTAGE OF CHANGE IN REAL EARNINGS, PER CAPITA, FROM ONE CENSUS YEAR TO THE NEXT, BY STATES, ALL INDUSTRIES COMBINED: 1899–1923

[A minus sign (−) denotes decrease]

STATE	PERCENTAGE OF CHANGE FROM—					
	1899–1904	1904–1909	1909–1914	1914–1919	1919–1921	1921–1923
United States	−3.5	10.0	−10.0	17.5	−12.1	41.0
Maine	5.1	8.4	−0.0	31.7	−22.4	27.3
New Hampshire	−1.9	8.6	−7.0	21.5	−21.1	33.2
Vermont	.4	11.6	−0.4	17.2	−20.1	32.1
Massachusetts	−0.2	8.9	−11.2	25.1	−22.0	37.8
Rhode Island	−4.2	11.0	−13.0	22.9	−19.4	36.4
Connecticut	−7.1	8.7	−14.3	31.3	−20.3	61.0
New York	−4.2	11.9	−13.1	20.7	−17.9	34.1
New Jersey	−5.3	8.8	−12.0	37.4	−23.7	42.6
Pennsylvania	−5.1	8.7	−11.3	42.3	−20.5	43.1
Ohio	.5	10.6	−8.4	35.9	−20.7	41.0
Indiana	−2.9	0.6	−3.9	24.1	−20.3	34.2
Illinois	1.6	7.8	−7.5	19.5	−16.4	31.8
Michigan	2.8	11.6	6.2	31.3	−23.8	41.0
Wisconsin	2.7	0.6	−0.6	24.7	−23.9	30.4
Minnesota	1.7	0.7	−0.3	14.0	−14.6	22.6
Iowa	1.4	14.7	−3.2	15.9	−16.0	22.1
Missouri	1.5	6.8	−10.4	12.8	−13.3	26.0
North Dakota	5.2	9.5	−6.0	6.3	−6.7	22.5
South Dakota	−.9	12.6	−11.5	10.1	−17.2	12.6
Nebraska	1.2	5.9	−4.1	22.3	−19.7	19.5
Kansas	−.5	10.6	−13.0	24.6	−17.5	22.5
Delaware	−5.1	10.7	−14.4	63.2	−35.5	36.5
Maryland	−1.8	10.7	−6.9	41.9	−26.6	30.6
District of Columbia	1.2	11.9	−14.4	3.9	6.9	32.0
Virginia	−1.9	4.7	−3.2	30.0	−17.8	28.0
West Virginia	8.9	8.1	−3.8	17.1	−8.9	30.1
North Carolina	10.5	13.6	−4.2	41.8	−25.7	39.3
South Carolina	8.6	20.5	−2.6	37.6	−26.4	30.6
Georgia	6.3	14.0	−12.0	32.6	−25.5	24.3
Florida	5.1	7.8	−10.6	20.0	−23.8	32.1
Kentucky	−1.2	5.0	−0.5	15.2	5.1	33.0
Tennessee	1.4	2.8	−7.0	13.5	−12.3	30.8
Alabama	7.8	7.9	−8.2	27.0	−25.0	42.1
Mississippi	11.7	−2.2	−11.0	27.7	−30.9	35.8
Arkansas	18.0	−2.2	−7.1	13.5	−24.4	34.5
Louisiana	8.9	−2.3	−7.0	11.7	−19.2	28.2
Oklahoma	17.9	7.7	−7.5	10.8	−3.4	28.4
Texas	−2.3	8.9	−10.7	6.8	−0.7	22.0
Montana	10.1	−2.2	−18.7	−10.1	−11.8	36.8
Idaho	10.1	−.1	1.6	−0.5	−9.2	31.1
Wyoming	1.2	7.0	−15.0	29.2	−2.4	14.7
Colorado	−1.0	2.8	−15.5	−2.9	−1.4	22.6
New Mexico	10.3	1.8	−8.5	−3.3	−19.5	43.5
Arizona	−2.4	3.9	−14.8	34.8	−40.6	20.4
Utah	7.5	11.8	−11.4	−14.4	5.0	18.1
Nevada	6.2	3.0	−11.0	−16.4	4.3	31.1
Washington	6.3	8.7	−14.1	12.8	−24.9	43.9
Oregon	13.1	12.8	−15.0	−13.1	−23.6	39.6
California	7.5	13.8	−15.8	−3.0	−1.1	31.0