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CHAPTER V

WAGES AND SALARIES IN TRADE, TRANSPORTATION, AND MISCELLANEOUS INDUSTRIES

The chief purpose of the investigation described in Chapter IV was to establish the extent to which we can depend upon available data in the approximation of earnings in trade, transportation, and other miscellaneous industries for which no published material can be found.

It may be stated at this point that, for purposes of this study, the estimated average earnings in the unrecorded industries in which we are interested need not be numerically correct; for what we are particularly interested in is a means of apportioning the total wages and salaries in these industries to the several States, and the requirement of an index for such apportionment is merely that its values be proportional to the actual amounts of wages and salaries received by the employees in each State. In other words, if the amounts for the different States representing our index are twice as great as the actual amounts, our index would still answer the purpose.

The principal conclusions drawn from the investigation of the relationship between wages and salaries in different industries or occupations which are important at this point are as follows:

1. In general, wages seem to be maintained at different levels in different sections of the country.
2. With few exceptions, high or low wages in one occupation are indicative of correspondingly high or low wages in other occupations in the same district.
3. In any given place there is a tendency for the same type of labor to command the same rate of pay irrespective of the industry. It follows, then, that, in general, wages and salaries fall into several groups, each of which maintains a definite relationship to the general wage level. Consequently, data

by States covering part of an occupational group should indicate the variation from State to State in the rates of pay or total earnings for the entire group. To go a step further, it would seem that, given a sufficient amount of sample data, it should be possible to determine the relative differences in the general wage level from State to State.

In line with the above conclusions, estimates of the relative average earnings of employees in trade, transportation, and miscellaneous industries have been computed. The basic data entering into the computation of these estimates are as follows:

1. Wages in manufacturing.
2. Salaries of clerks in manufacturing industries.
3. Salaries of officials, superintendents, etc., in manufacturing.
4. Wages and salaries in mining.
5. Wages in agriculture.
6. Union scales in the building trades.
7. Wages in power laundries.
8. Wages in private electric light and power plants.
9. Wages in steam railways.
10. Salaries of clergymen.
11. Salaries of teachers.

Table VIII presents the computed average annual earnings for specified industries and occupations, as well as the estimated average annual earnings of employees in combined groups, — averages which presumably disclose the relative level of wages in each State.

Following is a brief outline of the sources and methods employed in computing the average annual earnings recorded in the several columns of Table VIII.

Column A: *Wages in Manufacturing.*

The average earnings recorded in this column were obtained by dividing the total payroll for each State as shown by the Census of Manufactures, 1919, by the adjusted average number of employees in manufacturing industries in each State. The number of employees was adjusted to the basis of males by means of the formula:

$M + \frac{F}{1.9}$, where M equals the number of male employees and F the number of female employees. This adjustment is made on

the assumption that on the average the earnings of male employees are about 1.9 as great as those of female employees.¹

Column B: *Wages in Mines and Quarries.*

The wages for mines and quarries were obtained by dividing the total wages by the average number of wage earners, as reported by the Census of Mines, Quarries, and Oil Wells, 1919. No adjustment for sex was necessary in this case, as most of the miners are males.

Column C: *Wages in Manufacturing and Mining Combined.*

The figures for wages in mining and manufacturing were obtained by adding the payrolls of wages in manufacturing to those of wages in mining for each State. These figures were taken as reported by the Bureau of the Census. The total amount of the payrolls was divided by the adjusted number of wage earners in the two industries.

Column D: *Wages in Agriculture.*

These estimated annual earnings are based on the figures of monthly farm wages without board, as reported by the Department of Agriculture.

Column E: *Wages in Power Laundries.*

The figures in this column are based on the 1919 Census. The number of employees used in computing the average earnings was adjusted in the same manner as in the case of wage earners in manufacturing.

Column F: *Wages in Building Trades.*

The average annual earnings in the building trades were estimated from union scales in thirteen building trades reported by the United States Bureau of Labor Statistics. The amounts recorded represent full-time earnings on the basis of a fifty week year. The actual average earnings of wage earners in the building trades are probably smaller than the figures given in this table, as very rarely do these wage earners have full-time employment for an entire year.

Column G: *Wages in Electric Light and Power Plants.*

The figures in this column are based on the total payrolls and the average number of wage earners in private electric light and

¹ For more detailed discussion of this weight see Chapter IV, pp. 79-80.

TABLE VIII.—AVERAGE ANNUAL FULL TIME EARNINGS

STATE AND GEOGRAPHIC DIVISION	A	B	C	D	E	F	G
	MALES						
	Wages						
	Mfg. a	Mines and Quarries b	Mfg. and Mining Com- bined c	Agri- culture d	Power Laundries e	Building Trades f	Electric Light and Power Plants g
Continental United States							
New England							
Maine.....	1,192	1,074	1,191	840	847	1,723	1,128
New Hampshire.....	1,120	1,210	1,121	836	1,127	1,688	1,138
Vermont.....	1,094	1,036	1,089	780	887	1,627	1,122
Massachusetts.....	1,273	1,214	1,272	852	1,091	1,642	1,063
Rhode Island.....	1,198	1,083	1,198	876	1,042	1,631	1,199
Connecticut.....	1,265	1,190	1,265	852	1,051	1,681	1,259
Middle Atlantic							
New York.....	1,387	1,209	1,375	750	1,105	1,719	1,266
New Jersey.....	1,336	1,178	1,332	804	1,123	1,769	1,267
Pennsylvania.....	1,370	1,377	1,371	708	998	1,719	1,212
East North Central							
Ohio.....	1,390	1,179	1,376	674	965	1,742	1,231
Indiana.....	1,235	1,129	1,225	640	874	1,681	1,090
Illinois.....	1,355	1,190	1,335	702	1,109	1,781	1,183
Michigan.....	1,435	1,611	1,447	720	1,154	1,765	1,554
Wisconsin.....	1,186	1,339	1,196	828	948	1,638	1,337
West North Central							
Minnesota.....	1,195	1,702	1,264	900	1,315	1,673	1,048
Iowa.....	1,211	1,106	1,197	869	986	1,754	1,101
Missouri.....	1,150	1,129	1,142	611	969	1,888	1,034
North Dakota.....	1,322	1,330	1,323	951	930	1,727	1,095
South Dakota.....	1,311	1,399	1,331	1,056	1,088	1,727	1,254
Nebraska.....	1,357	1,026	1,355	930	978	1,754	1,045
Kansas.....	1,260	1,360	1,281	786	1,261	1,815	1,122
South Atlantic							
Delaware.....	1,383	1,168	1,382	606	1,151	1,688	1,293
Maryland.....	1,202	1,093	1,197	588	861	1,769	1,293
District of Columbia..	1,338	....	1,338	....	990	1,831	1,293
Virginia.....	1,096	1,107	1,097	540	694	1,758	1,063
West Virginia.....	1,290	1,186	1,232	624	953	1,681	1,198

IN SPECIFIED INDUSTRIAL OR OCCUPATIONAL GROUPS, 1919

H	I	J	K	L	M	N	O	P	Q
ONLY						MALES AND FEMALES			
Steam Railroads	Domestic and Personal Service	Salaries			Wages and Salaries in Miscellaneous Industries	Salaries		Wages	
		Mfg. and Mining Combined		Clergymen		Teachers	Mfg. (all Salaried Classes)	Mfg.	Power Laundries
		Clerks	Officials, Supts., and Mgrs.						
g	h	i	j	k	l	m	n	o	p
1,528	914	1,697	3,573	1,025	1,553	603	2,218	1,062	611
1,528	1,038	2,021	3,499	997	1,638	759	2,265	955	790
1,528	895	1,569	3,309	885	1,463	667	2,069	1,017	553
1,528	1,055	1,698	4,028	1,401	1,716	1,376	2,055	1,073	775
1,528	1,023	1,635	4,263	1,088	1,671	1,070	2,180	984	778
1,528	1,034	1,641	3,790	1,331	1,655	1,124	1,973	1,170	757
1,528	1,052	1,775	4,062	1,229	1,750	1,256	2,075	1,196	864
1,528	1,069	1,571	4,125	1,332	1,713	1,282	2,033	1,181	800
1,528	986	1,755	3,451	1,271	1,636	920	2,087	1,237	666
1,528	960	1,740	3,771	1,299	1,686	1,088	1,963	1,292	668
1,528	874	1,560	3,253	1,021	1,513	964	1,858	1,142	591
1,468	1,032	1,711	3,842	1,154	1,677	1,081	2,013	1,226	746
1,528	1,082	1,675	3,951	1,093	1,705	911	2,097	1,357	771
1,468	962	1,585	3,333	1,067	1,534	915	1,893	1,092	626
1,468	1,180	1,465	3,147	1,012	1,505	882	1,684	1,101	890
1,468	993	1,599	2,846	1,235	1,486	827	1,746	1,119	662
1,468	896	1,629	3,226	950	1,504	797	1,872	1,010	652
1,468	1,015	1,348	2,320	986	1,369	728	1,590	1,208	651
1,468	1,127	1,696	2,605	922	1,503	696	1,671	1,238	742
1,468	1,039	1,461	3,027	1,066	1,490	765	1,633	1,261	666
1,468	1,122	1,518	2,868	1,019	1,485	761	1,758	1,198	654
1,528	1,033	1,797	3,947	1,033	1,690	848	2,305	1,283	778
1,528	846	1,675	3,717	1,160	1,599	902	2,059	1,053	598
1,528	1,094	1,655	3,493	2,287	1,758	1,359	1,825	1,258	634
1,366	728	1,557	2,518	750	1,331	546	1,860	1,006	469
1,366	910	1,515	2,798	826	1,407	639	2,175	1,226	670

TABLE VIII. — AVERAGE ANNUAL FULL TIME EARNINGS IN

STATE AND GEOGRAPHIC DIVISION	A	B	C	D	E	F	G
	MALES						
	Wages						
	Mfg.	Mines and Quarries	Mfg. and Mining Com- bined	Agri- culture	Power Laundries	Building Trades	Electric Light and Power Plants
a	b	c	d	e	f	g	
South Atlantic—Cont.							
North Carolina.....	927	788	925	540	803	1,681	832
South Carolina.....	897	729	895	461	713	1,692	892
Georgia.....	916	842	908	462	805	1,554	831
Florida.....	944	922	942	540	651	1,685	908
East South Central							
Kentucky.....	1,050	1,137	1,085	557	765	1,600	989
Tennessee.....	948	898	940	497	686	1,708	953
Alabama.....	970	1,112	1,004	438	758	1,785	1,008
Mississippi.....	915	....	915	456	762	1,785	829
West South Central							
Arkansas.....	965	1,260	985	547	830	1,888	1,037
Louisiana.....	1,012	1,435	1,034	517	730	1,631	1,098
Oklahoma.....	1,226	1,380	1,310	727	1,031	1,831	1,108
Texas.....	1,131	1,627	1,206	662	871	1,892	1,060
Mountain							
Montana.....	1,467	1,595	1,529	1,067	1,276	2,315	1,725
Idaho.....	1,357	1,711	1,411	1,123	1,273	2,058	1,218
Wyoming.....	1,702	1,503	1,583	1,033	1,319	2,058	1,430
Colorado.....	1,279	1,513	1,357	972	1,046	1,873	1,378
New Mexico.....	1,177	1,478	1,344	710	1,015	2,008	1,298
Arizona.....	1,422	1,715	1,611	996	1,170	1,992	1,402
Utah.....	1,220	1,746	1,409	1,104	1,072	2,038	889
Nevada.....	1,403	1,749	1,604	1,116	1,330	2,008	1,027
Pacific							
Washington.....	1,508	1,478	1,507	1,092	1,373	1,954	1,417
Oregon.....	1,442	1,342	1,441	1,044	1,533	2,011	1,146
California.....	1,349	1,641	1,375	1,094	1,176	1,938	1,531

^a Based on *Census of Manufactures, 1919*; for method of computation, see text, pp. 50-58, 98.

^b Based on *Census of Mines & Quarries, 1919*.

^c Average earnings of males in Mining and Manufacturing; for details of computation, see text, pp. 77-99.

^d Based on monthly farm wages without board. Figures published by U. S. Dept. of Agriculture.

^e Union scales of wages. See text, pp. 94, 99.

^f Based on 1917 Census; figures adjusted for change in wage level between 1917 and 1919.

^g See text, p. 104.

SPECIFIED INDUSTRIAL OR OCCUPATIONAL GROUPS, 1919—Continued

H	I	J	K	L	M	N	O	P	Q
ONLY						MALES AND FEMALES			
		Salaries			Wages and Salaries in Miscellaneous Industries	Salaries		Wages	
Steam Railroads	Domestic and Personal Service	Mfg. and Mining Combined		Clergymen		Teachers	Mfg. (all Salaried Classes)	Mfg.	Power Laundries
		Clerks	Officials, Supts., and Mgrs.						
a	b	c	d	e	f	g	h	i	j
1,366	748	1,648	2,669	667	1,314	464	2,035	804	527
1,366	674	1,445	2,834	830	1,277	464	2,047	787	507
1,366	723	1,588	2,810	746	1,296	426	1,993	826	549
1,366	676	1,474	2,407	917	1,257	518	1,819	907	497
1,366	767	1,473	2,755	578	1,313	523	1,854	967	516
1,366	680	1,488	2,973	724	1,320	494	1,908	854	480
1,366	711	1,452	2,748	654	1,300	484	1,891	924	528
1,366	701	1,634	2,444	585	1,281	439	1,942	890	505
1,366	776	1,526	2,750	565	1,329	477	2,043	845	586
1,366	724	1,477	2,861	800	1,348	723	1,878	961	491
1,468	996	1,698	2,898	900	1,521	768	1,843	1,187	667
1,468	875	1,404	2,680	805	1,376	612	1,751	1,082	622
1,468	1,264	1,932	3,086	1,049	1,765	958	2,033	1,442	865
1,468	1,256	1,526	2,694	1,027	1,553	932	1,801	1,333	854
1,468	1,286	1,605	3,237	1,046	1,668	869	1,904	1,686	843
1,468	1,086	1,525	2,950	1,018	1,542	929	1,802	1,219	689
1,468	989	1,775	2,679	900	1,548	803	1,789	1,161	595
1,468	1,206	1,895	3,274	1,300	1,785	1,279	2,218	1,409	799
1,468	1,149	1,546	2,788	1,100	1,551	992	1,803	1,137	738
1,468	1,321	1,385	2,765	1,200	1,585	1,163	1,909	1,384	961
1,468	1,315	1,724	3,610	1,038	1,756	1,229	2,274	1,467	957
1,468	1,368	1,640	3,312	1,000	1,651	870	2,027	1,385	875
1,468	1,191	1,565	3,352	1,400	1,674	1,272	1,855	1,248	826

^a Weighted average of wages in Manufacturing and Mining, Agriculture, and Power Laundries. See text, p. 104.

^b Year Books of Methodist Episcopal and Congregational Churches; also, *World Survey*, Inter-church Movement, 1920.

^c Trade, Transportation, Public and Professional Services, etc.; weighted average. See text, p. 105.

^d U. S. Bureau of Education.

^e *Census of Manufactures*, 1919.

power plants as reported by the 1917 Census. The 1917 figures were adjusted to a 1919 basis by multiplying them by 1.45 to allow roughly for the rise in the wage level between 1917 and 1919.

Column H: *Wages in Steam Railways.*

This column shows average wages of employees of steam railroads for three divisions of the country. No data are available from which to make estimates by individual States. However, in the case of railroads the wage scales for a considerable portion of the employees are standardized and consequently variations in average earnings within the divisions are minimized. The annual earnings for the three divisions of the country were estimated from figures furnished by the Interstate Commerce Commission in its report on *Statistics of Railways in the United States.*

Column I: *Wages in Domestic and Personal Services.*

No original data have ever been published showing the comparative earnings in the different States of wage earners belonging to the large class of individuals rendering domestic or personal services, such as waiters, cooks, barbers, etc. The figures furnished in this table are based on wages in manufacturing, mining, agriculture, and power laundries. They represent weighted averages in which wages in manufacturing and mining have been given a weight of 2, farm wages a weight of 3, and wages in power laundries a weight of 5. In selecting the weights, it was assumed that the wage earners in the domestic and personal services are as a rule recruited from the same general type of individuals as found in power laundries and in agriculture.

Column J: *Salaries of Clerks in Manufacturing and Mining.*

The salaries of clerks in manufacturing and mining were computed in the same manner as wages in manufacturing and mining, as described above.

Column K: *Salaries of Officials, Superintendents, and Managers in Mining and Manufacturing.*

These average earnings were also computed in a manner similar to that used for wages in mining and manufacturing.

Column L: *Salaries of Clergymen.*

Data pertaining to salaries of clergymen were obtained from the following three sources: the *Year Book* of the Methodist Episcopal

Church; the *Year Book* of the Congregational Church, and the *World Survey of the Interchurch Movement*, 1920. The figures presented in the table presumably cover only regular salaries, and do not include the miscellaneous supplementary incomes usually received by ministers from their congregations. It, therefore, follows that if complete figures were available we would find that the average salaries of clergymen were actually somewhat higher than those recorded. It would, however, appear that our figures are fairly representative of the relative salaries in the different States.

Column M: *Wages and Salaries in Miscellaneous Industries.*

The estimated annual earnings presented in this column presumably represent the relative earnings in trade, transportation, and other industries outside of agriculture, mining, manufactures, construction, and domestic and personal service. The estimates are composites of wage or salary rates in ten industrial or occupational groups weighted as follows:

Wages in Manufacturing and Mining.....	20
Wages in Agriculture.....	5
Wages in Power Laundries.....	5
Wages in Building Trades.....	8
Wages in Electric Light and Power Plants.....	4
Wages in Steam Railroads.....	8
Salaries of Clerks in Manufacturing and Mining.....	25
Salaries of Officials and Managers in Manufacturing and Mining.....	11
Salaries of Clergymen.....	4
Salaries of Teachers.....	10

The weights were estimated from the *Occupation Statistics* of the 1920 Census of Population. The total number of persons receiving wages and salaries in the groups of industries and occupations included in trade, transportation, and miscellaneous industries was divided, with the aid of the Census data, into ten classes of such type and composition that they corresponded as nearly as possible to the classes of employees for which annual earnings had been computed from recorded data, as shown in Columns A to H and J to L of Table VIII.

Column N:

The salaries of teachers presented in this column are based on data published by the U. S. Bureau of Education.

Columns O, P, and Q:

The figures in the last three columns of Table VIII are unadjusted annual earnings based on the Census of Manufactures and obtained by dividing the total amount of the payrolls by the total number of employees irrespective of sex.

Total Wages and Salaries of Employees in Trade, Transportation, and Miscellaneous Industries in 1919.

The estimates by States of the total amounts disbursed in 1919 to employees in trade, transportation, and miscellaneous industries have been computed by applying the estimated average full-time earnings shown in Table VIII to estimates of the total number of employees attached to all the industries and services included in the group. The *Occupation Statistics* of the 1920 Census of Population served as the basis for estimating the total number of employees. Since the average earnings recorded in Table VIII are on the basis of males, the number of employees has also been converted to a male basis, i.e., the number of female workers in each State has been reduced by the ratio of $\frac{1}{1.9}$.¹ The figures as well as the method of computation are shown in Table IX. It will be seen that, for purposes of calculation, the employees in domestic and personal service have been segregated and treated separately from the other employees in the group. This was found necessary on account of the great difference in the proportion of domestics in the various sections of the country. For instance, in Florida, out of the 95,000 employees covered by the data in Table IX, over 29,000, or nearly 31 per cent fall into the domestic and personal service class. In Kansas, however, the number of such employees is about 23,600, or scarcely 13 per cent of the State total for the entire group. The average earnings of employees in the domestic and personal service class being considerably below those of employees in other industries under consideration, it is obvious that to have given the domestic service class the same numerical weight in each State would have introduced serious errors in our final estimates.

The figures shown in Table IX occupy a very prominent place in the entire report. These figures form the basis of accounting

¹ For a discussion of this ratio, see Chapter IV, pp. 79-80.

for about 25 per cent of the entire income of the people of the Continental United States, and it is, therefore, quite important that they command our confidence. There is, of course, no sure way of checking the correctness of the general method employed in arriving at our estimates. However, that the figures are reasonably correct is shown by the fact that the United States total obtained by adding the individual estimates for the several States checks very closely with the total arrived at by W. I. King by an entirely different method in which geographic distribution had no part.¹ Dr. King's estimate, comprising the addition of twelve separately computed national totals, is \$16,888,767,000, only \$137,164,000 less than the total for all the States recorded in Column G of Table IX. It is gratifying to note that the two independent estimates are within less than 1 per cent of each other.

Total Wages and Salaries in Trade, Transportation, and Miscellaneous Industries in 1920 and 1921.

It is presumed, and apparently with reason, that trade, transportation, and miscellaneous industries are not unlike manufacturing and the other three major industries covered in previous chapters in the matter of employment and earnings. The various industries are so closely interwoven and interdependent that it can hardly be conceived that a material change in one will not affect, temporarily at least, other industries or occupations as well. We have seen that, in the case of manufacturing, for instance, the fluctuations in employment and earnings of employees are not by any means synchronous in the various States, and that the proportional

¹ Dr. King computed separate national totals for each of the major industries included in the group as follows:

1. Steam railways, switching and terminal companies.
2. Pullman car transportation.
3. Street and electric railways.
4. Private electric light and power companies.
5. Telegraphs.
6. Telephones.
7. Express companies.
8. Transportation by water.
9. Banking.
10. Mercantile industry.
11. Government.
12. Unclassified industries.

TABLE IX. — PRELIMINARY ESTIMATE OF TOTAL WAGES AND SALARIES OF EMPLOYEES IN TRADE, TRANSPORTATION, AND MISCELLANEOUS INDUSTRIES OR OCCUPATIONS, IN 1919

STATE AND GEOGRAPHIC DIVISION	A		B		C		D		E		F		G
	TRADE, TRANSPORTATION, PUBLIC AND PROFESSIONAL SERVICES, AND INDUSTRIES NOT PREVIOUSLY COVERED						DOMESTIC AND PERSONAL SERVICES						
	Estimated Number of Employees (in terms of Males)	Estimated Average Yearly Earnings of Males in These Industries	Estimated Total Pay (Thousands) A X B	Estimated Number of Employees (in terms of Males)	Estimated Average Yearly Earnings of Males in the Services	Estimated Total Pay (Thousands) D X E	Estimated Total Pay in Entire Group of Industries or Occupations (Thousands) C + F						
Continental United States	9,483,690	.....	15,066,375	2,022,570	.....	17,025,931					
New England.....	718,500	1,553	1,206,944	154,850	.....	1,366,256						
Maine.....	59,310	1,638	92,108	13,810	914	12,622							
New Hampshire.....	32,570	1,463	53,350	7,810	1,038	8,107							
Vermont.....	22,280	1,716	32,596	6,416	895	5,742							
Massachusetts.....	455,470	1,671	781,586	89,870	1,055	94,813							
Rhode Island.....	57,810	1,655	96,600	11,450	1,023	11,713							
Connecticut.....	91,060	.....	150,704	25,450	1,034	26,315						
Middle Atlantic	2,447,150	1,750	4,188,983	517,230	.....	535,218						
New York.....	1,413,890	1,713	2,474,308	302,860	1,052	318,609							
New Jersey.....	315,090	1,636	539,749	63,130	1,069	67,486							
Pennsylvania.....	718,170	.....	1,174,926	151,240	986	149,123						
East North Central	1,897,890	1,686	3,133,966	362,950	.....	361,063						
Ohio.....	493,840	1,513	832,614	95,480	960	91,661							
Indiana.....	232,020	1,677	351,046	42,860	874	37,460							
Illinois.....	723,530	1,705	1,213,360	131,020	1,032	135,213							
Michigan.....	286,240	1,534	488,039	55,790	1,082	60,365							
Wisconsin.....	162,260	.....	248,907	37,800	962	36,364						
West North Central	1,134,320	1,505	1,692,415	199,670	.....	204,344						
Minnesota.....	216,390	1,486	325,667	41,140	1,180	48,545							
Iowa.....	211,640	1,504	314,497	34,260	993	34,020							
Missouri.....	353,000	1,369	548,012	68,220	896	61,125							
North Dakota.....	40,030	1,503	54,801	7,060	1,015	7,166							
South Dakota.....	43,290	1,490	65,065	7,140	1,127	8,047							
Nebraska.....	113,480	1,485	169,085	18,250	1,039	18,962							
Kansas.....	156,490	.....	232,388	23,600	1,122	26,479						

South Atlantic	1,004,890	1,432,910	285,040	223,133	1,656,043
Delaware.....	16,560	27,986	5,030	5,196	33,182
Maryland.....	171,260	273,845	39,890	33,747	307,592
District of Columbia.....	127,740	224,567	25,370	27,755	252,322
Virginia.....	189,750	252,557	49,450	36,000	288,557
West Virginia.....	76,340	107,410	15,400	910	121,096
North Carolina.....	110,600	145,328	32,760	24,504	169,832
South Carolina.....	73,700	94,115	26,980	18,185	112,300
Georgia.....	173,190	224,454	61,040	44,132	268,586
Florida.....	65,750	82,648	29,480	19,928	102,576
East South Central	496,960	650,050	143,690	102,556	752,108
Kentucky.....	175,240	230,090	35,240	27,029	257,819
Tennessee.....	146,110	192,865	42,630	28,988	221,853
Alabama.....	112,670	146,471	39,920	28,383	174,754
Mississippi.....	62,940	80,626	25,900	18,156	98,682
West South Central	770,870	1,075,218	167,110	140,741	1,215,959
Arkansas.....	78,880	104,832	19,720	15,303	120,135
Louisiana.....	124,740	168,150	42,700	30,915	199,065
Oklahoma.....	149,650	227,618	24,130	24,033	251,651
Texas.....	417,600	574,618	80,560	70,490	645,108
Mountain	323,280	521,516	54,970	63,946	585,462
Montana.....	45,260	79,884	8,620	10,896	90,780
Idaho.....	30,650	47,599	5,300	6,657	54,256
Wyoming.....	19,080	31,825	3,390	4,360	36,185
Colorado.....	111,000	171,162	18,750	20,363	191,525
New Mexico.....	30,260	46,842	4,850	4,797	51,639
Arizona.....	37,740	67,366	5,860	7,067	74,433
Utah.....	37,840	58,690	5,970	6,860	65,550
Nevada.....	11,450	18,148	2,230	2,946	21,094
Pacific	689,830	1,164,371	137,060	169,243	1,333,614
Washington.....	139,080	244,224	27,690	36,412	280,636
Oregon.....	78,640	129,835	14,530	19,877	149,712
California.....	472,110	790,312	94,840	112,954	903,266

variations from year to year are entirely different in different parts of the country. In other words, we have seen that not only do the actual amounts of wages and salaries in the different States fluctuate from year to year, but the relative share of the national total received by employees in each State also undergoes considerable change. For example, in 1919 the employees of New York received 14.6 per cent of the total payrolls of the manufacturing industries of the country. In 1921, however, the share of the employees residing in the State of New York amounted to 16.1 per cent of the total. For the same years the share received by Michigan employees changed from 5.9 per cent to only 5 per cent. Similarly, practically all the other States were affected one way or another by the changing conditions in manufacturing industries, so that in 1921 we have an entirely different geographic distribution of total payrolls from that in either 1919 or 1920. The same situation, it will be recalled, obtained also in the case of mining, agriculture, and construction.

It is, then, apparent that if employment and earnings of employees in trade, transportation, and miscellaneous industries have reacted in somewhat the same fashion as in manufacturing and the other basic industries, the 1919 distribution, as computed in Table IX, is surely not representative of conditions in 1920 and 1921.

From the fact that even for 1919 the material bearing directly upon earnings of employees in trade, transportation, and miscellaneous industries was found to be very scarce, it can be implied that it would be out of the question to attempt to build up independent estimates of total wages and salaries by States for each succeeding year. Manifestly, the only feasible method of attack, under the circumstances, is to utilize in so far as possible the data computed for 1919 by adjusting them to fit in with the changes in employment and earnings in the specified industries that have taken place in the different sections of the country in subsequent years. For this purpose, indices have been computed aiming to show the relative departure from 1919 conditions obtaining in each State in 1920 and 1921. These indices have been calculated on the basis of the following factors:

1. Total wages and salaries received by employees in agriculture, mining, manufactures, and construction.

TABLE X. — TOTAL WAGES AND SALARIES IN TRADE, TRANSPORTATION, AND MISCELLANEOUS INDUSTRIES

1919—1920—1921

STATE AND GEOGRAPHIC DIVISION	DOLLARS (000's Omitted)			PER CENT OF TOTAL		
	1919	1920	1921	1919	1920	1921
Continental United States...	16,888,767	19,343,070	19,897,712	100.000	100.000	100.000
New England.....	1,355,493	1,580,074	1,594,675	8.026	8.169	8.014
Maine.....	103,866	120,069	122,682	.615	.621	.616
New Hampshire.....	60,968	69,304	71,206	.361	.358	.358
Vermont.....	38,000	42,832	44,285	.225	.221	.222
Massachusetts.....	869,603	1,030,362	1,035,801	5.149	5.327	5.206
Rhode Island.....	107,413	121,578	126,502	.636	.629	.636
Connecticut.....	175,643	195,929	194,199	1.040	1.013	.976
Middle Atlantic.....	4,686,633	5,389,096	5,544,420	27.750	27.861	27.865
New York.....	2,771,109	3,231,125	3,350,337	16.408	16.705	16.883
New Jersey.....	602,253	675,904	689,454	3.566	3.494	3.465
Pennsylvania.....	1,313,271	1,482,067	1,495,629	7.776	7.662	7.517
East North Central.....	3,466,926	4,000,140	4,038,045	20.528	20.680	20.294
Ohio.....	916,722	1,027,833	1,010,752	5.428	5.314	5.080
Indiana.....	385,402	462,431	452,524	2.282	2.391	2.274
Illinois.....	1,337,759	1,562,977	1,642,440	7.921	8.080	8.254
Michigan.....	543,987	627,583	605,449	3.221	3.244	3.043
Wisconsin.....	283,056	319,316	326,880	1.676	1.651	1.643
West North Central.....	1,881,070	2,141,402	2,225,627	11.138	11.071	11.185
Minnesota.....	371,215	416,538	434,882	2.198	2.153	2.185
Iowa.....	345,544	401,745	409,881	2.046	2.077	2.060
Missouri.....	587,222	679,368	712,103	3.477	3.512	3.579
North Dakota.....	61,475	67,875	71,149	.364	.351	.357
South Dakota.....	72,453	79,625	81,312	.429	.412	.409
Nebraska.....	186,452	208,920	215,463	1.104	1.080	1.083
Kansas.....	256,709	287,331	300,837	1.520	1.486	1.512
South Atlantic.....	1,642,602	1,820,816	1,867,640	9.726	9.413	9.386
Delaware.....	32,933	33,991	34,859	.195	.176	.175
Maryland.....	305,011	344,301	352,456	1.806	1.780	1.771
District of Columbia.....	250,292	280,855	278,862	1.482	1.452	1.401
Virginia.....	286,265	306,739	319,914	1.695	1.586	1.608
West Virginia.....	120,079	146,412	144,809	.711	.757	.728
North Carolina.....	168,381	184,607	192,432	.997	.954	.967
South Carolina.....	111,297	122,539	124,895	.659	.634	.628
Georgia.....	266,505	290,834	301,519	1.578	1.503	1.515
Florida.....	101,839	110,538	117,894	.603	.571	.596
East South Central.....	746,484	837,795	867,629	4.420	4.331	4.360
Kentucky.....	255,020	301,484	311,952	1.510	1.559	1.568
Tennessee.....	220,061	246,478	257,048	1.303	1.274	1.292
Alabama.....	173,443	186,784	193,246	1.027	.966	.971
Mississippi.....	97,955	103,049	105,383	.580	.582	.529
West South Central.....	1,206,196	1,378,634	1,447,935	7.142	7.127	7.277
Arkansas.....	119,235	127,079	134,586	.706	.657	.676
Louisiana.....	197,430	226,353	232,727	1.169	1.170	1.170
Oklahoma.....	249,616	280,896	288,941	1.478	1.452	1.452
Texas.....	639,915	744,306	791,681	3.789	3.848	3.970
Mountain.....	580,636	657,876	680,232	3.438	3.401	3.419
Montana.....	90,017	97,637	98,429	.533	.505	.495
Idaho.....	53,875	58,976	63,178	.319	.305	.318
Wyoming.....	35,804	42,693	45,962	.212	.221	.231
Colorado.....	189,999	218,778	231,034	1.125	1.131	1.161
New Mexico.....	51,173	57,909	60,131	.303	.299	.302
Arizona.....	73,804	84,015	81,483	.437	.434	.410
Utah.....	65,022	74,125	76,482	.385	.383	.384
Nevada.....	20,942	23,743	23,533	.124	.123	.118
Pacific.....	1,322,727	1,537,237	1,631,509	7.832	7.947	8.200
Washington.....	278,327	292,757	295,478	1.648	1.514	1.485
Oregon.....	148,452	161,800	170,853	.879	.836	.859
California.....	895,948	1,082,680	1,165,178	5.305	5.597	5.856

2. Total wages and salaries reported to the U. S. Bureau of Internal Revenue on income tax returns.
3. Total payrolls of steam railroads, estimated for eight regions from the railway statistics of the Interstate Commerce Commission.
4. Estimated total population in each State at the middle of each year.

As a first step in the construction of the desired indices, the data of the first three factors mentioned above, which are in dollars, have been deflated by dividing the yearly figures for each State by an index of relative prices of consumption goods. This presumably has put them on a comparable basis with the fourth item entering into the computation of our indices, namely, population. In order to allow an independent assignment of weights to the several factors, the data were converted to percentages in terms of 1919, so that each factor comprised a series of forty-nine indices, one for each State, with 1919 as a base. The relative weights used in combining the four sets of indices into one were as follows:

Wages and salaries in manufacturing, mining, agriculture, and construction, together with the income tax figures on wages and salaries.	4
Wages and salaries of steam railways.	2
Population.	4

In Table X are presented the final estimates of the total income derived by the employees in each State from wages and salaries in trade, transportation, and miscellaneous industries. In accordance with the practice followed throughout this report, the State estimates have been adjusted so that their totals for each year correspond with the national totals estimated by W. I. King, of the National Bureau of Economic Research.