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CHAPTER 23

TOTAL AMOUNT OF INCOME RECEIVED BY PERSONS HAVING UNDER $2,000

§ 23a. Introduction

By far the larger number of persons gainfully employed have incomes under $2,000; and of these incomes, the major portion comes from personal earnings received in the form of wages. Profits of small business men and earnings of professional men, when they are less than $2,000, are not reported to the Bureau of Internal Revenue, and it has been necessary to assume that these average amounts are substantially on the same level with wages under $2,000. This assumption in regard to the average may not be far from the truth, even though the distribution of wages is quite different from that of profits and professional earnings. The error involved cannot in any case be very large. A study of typical distributions of these three types of income would be a valuable piece of work. It is on the information concerning wages, therefore, that the chief reliance must be placed in estimating incomes under $2,000.

In order, however, to arrive at the total for this group, estimates must be added for the income received from other sources. These are income from pensions, from homes owned by those who occupy them, and from investments. Once more the condition of the data makes it necessary to treat agriculture apart from other industries, so that separate estimates have to be made for the incomes of farm laborers and of farmers. The amount of each of these items together with the final figure for all incomes under $2,000 is shown in Table 23A.

§ 23b. Personal Earnings [1]

No wages Census has ever been taken in the United States. If there had been, this estimate would have been less difficult to make, and the results would doubtless be more trustworthy. Under the circumstances, the best means of arriving at the total wages paid is to estimate the average amount per person from such samples as are obtainable for each occupational group, and multiply this average by the number of persons actually working in this group. An estimate could also be made from the entire number of persons *connected with* an industry provided the aver-

[1] Except those of farm laborers and farmers, which are taken up in §§ 23c and 23g.

TABLE 29A

ESTIMATED TOTAL AMOUNT OF INCOME RECEIVED BY PERSONS HAVING INCOMES UNDER $2,000 PER YEAR [a]

(Millions of dollars)

Source of income	I 1910	II 1911	III 1912	IV 1913	V 1914	VI 1915	VII 1916	VIII 1917	IX 1918	X 1919	XI 1920
Income from personal earnings	$13,711	$14,311	$14,971	$15,458	$15,462	$15,717	$18,294	$21,179	$27,777	$29,882	$33,020
Income of farm laborers	1,152	1,183	1,228	1,256	1,251	1,279	1,375	1,641	2,001	2,302	2,778
Income from pensions	175	175	173	196	196	191	187	191	212	257	(257)
Income from home ownership	600	600	600	600	600	605	611	618	660	726	879
Income from investments	823	859	898	927	928	943	1,098	1,271	1,667	1,793	1,981
Income of farmers under $2,000 [b]	3,692	3,518	3,738	3,860	3,860	4,184	4,621	4,914	4,666	4,552	4,939
Total income	$20,153	$20,656	$21,608	$22,297	$22,297	$22,919	$26,186	$29,814	$36,983	$39,512	$43,854
Number of persons (thousands)	32,412	32,973	33,399	33,635	33,422	32,907	34,906	34,520	35,961	33,913	34,076

[a] Care must be taken in the comparative use of these figures, for not only did the total number of gainfully employed increase during the period under consideration, but also the rise in prices carried the money incomes of many persons above $2,000 without making any actual addition to their real incomes. This point is discussed at length in Chapter 28.

[b] See Table 24K, page 313.

age wages were also estimated on that basis. But most of the average wages reported are based on the average number of workers actually employed at some one time. Hence, the first method is the more feasible.

Generally speaking, the average number of persons employed in an industry is from 3 per cent to 10 per cent less than the number of persons attached to the industry.[1]   About 3 per cent are constantly out of employment because of sickness and other reasons and a certain additional per cent are irregularly out of work because of seasonal and cyclical fluctuations.

The occupational groups are divided in general accord with the scheme used in the *Census of Occupations* of 1910. In Table 23D are shown the numbers of persons actually at work in each year. From these figures have been subtracted the number of persons receiving incomes of over $2,000 estimated on the basis of the preceding chapter. (Tables 23E and 23F) The next step has been to estimate the average wages in each occupational group (Table 23G), and by multiplication of average wages and average numbers (Table 23H), to obtain a figure for total wages paid.

In some cases, the different samples from which the average wages presented in Table 23G were made up, showed considerable variation. However, in the most important groups, particularly in Manufacturing and Transportation, the results drawn from different sets of data checked against each other with a satisfactory degree of accuracy. After the table had been completed on the basis of independent estimates for each item, it was again studied to locate such inner discrepancies as might lead to the detection of errors, either in the relation of wages imputed to different years or to different occupations. Where discrepancies were found, additional information was sought. The result is presented as the nearest practical approximation of the facts we could make from the existing data.

It may be well to warn the reader against the attempt to estimate annual average earnings from hourly, daily or weekly rates of pay. While it is easy to multiply daily rates of pay by the number of working days in a year, this method involves some assumption as to the average number of days worked. Examples have been found of both annual average earnings and daily or weekly rates of wages, together with the number of days or weeks in operation, which show that the results found by multiplying average rates by days in operation give untrustworthy results. Wage rates, therefore, have been used only as indices and with the greatest possible care. This difficulty is most unfortunate because the great mass of the material to be had is in the form of hourly, daily or weekly rates of pay.

[1] Cf. Chapter 2, § d. Also Hornell Hart, *Fluctuations in Unemployment in Cities of the United States, 1902 to 1917.*

Taken as a whole, the data on which these tables rest are numerous and fairly reliable. As said above, the average number of persons employed is based on the 1910 *Census of Occupations*. As the Census reports the total number of persons gainfully employed in each occupational group, these figures have to be adjusted to the average number *actually* employed. This adjustment has been made in the case of Manufactures by comparing the monthly average number at work in 1909, reported in *Census of Manufactures*, 1909, with the highest number employed, and assuming the same ratio for 1910. Similar methods of approximating the number actually at work in 1910 have been applied to each occupation.[1]

The average wages found in each occupational group have been applied to the entire number of persons actually at work in that group. This plan involves a certain technical error, for some of those in every group work independently and hence, receive what is generally classified as "profits" and not "wages." No estimate that is more than a guess as to the total amount of these "profits" and as to the number who thus work independently is available. It has been found necessary, therefore, to assume that the average profits of those having an income under $2,000 is approximately the same as the average wages of employees engaged in the same industry. An exception is made in the case of "trade," where the large number of independent workers appears to indicate a rather higher income than one based strictly on wages.[2]

Furthermore, a major difficulty in classification should be pointed out. There are many cases in which the same person might fall within either of two groups. Examples are clerks employed by railroads, engineers connected with a factory or mine, lawyers or doctors holding public service positions, horseshoers or field clerks in the army, etc. Classifications decided upon by the Census Bureau were of necessity more or less arbitrary, but careful study has led to the conclusion that they are on the whole as satisfactory as any other set of arbitrary assignments. The only departures from the Census classification which we have made are (1) to shift a certain number of those engaged in manufacturing connected with mining (reported under manufacturing in the *Occupation Statistics* of 1910) to mines, and (2) to change a certain number of persons who on account of· occupation were listed under manufacturing, to the army and navy, for which a separate group was made. Both changes are of small importance, but they are desirable because actual figures from other sources for later years are based on the revised classifications.

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[1] The method here adopted makes probable a certain amount of understatement of annual income, owing to the real and regular mobility of labor in shifting from one industry to another. This is especially the case in seasonal industries.—M. C. Rorty.

[2] I question the assumption that business and professional earnings under $2,000 are comparable to wages. Frequency curves are probably quite different.—M. C. Rorty.

There is a considerable chance of error in the numbers attributed to each occupational group. Each person is placed by the Census in that group which he considers his regular occupation. But there is of necessity a large amount of shifting, both from seasonal causes and from variations in the activity of different industries. Such shiftings, however, will affect the total wages of all the groups less than the wages assigned to each group. For the total will only be affected as the average amount of wages varies from group to group. This error is probably not of momentous importance, for it will tend to raise the total as often as to lower it.

The main sources of information for each of the leading groups recognized in the estimate are as follows:—

(1) Mining. The estimated number engaged in mining is based on actual figures for approximately 93 per cent [1] of all mines in 1911 to 1918 as reported by the Bureau of Mines. After careful comparison of the numbers reported in metal mines, coal mines and quarries by the *Census of Mines and Quarries*, 1909, by the *Occupation Statistics* of 1910, and by the Bureau of Mines, 1911 to 1918, an estimate was made for 1910. These figures represent the number employed in mines during operation, which is unquestionably somewhat higher than the average number employed during the entire year.[2] It is believed that when these figures have been combined with average annual wages from sample states (Pennsylvania, Kansas, Michigan, Illinois, West Virginia) based on the data for the whole country given by the *Census of Mines and Quarries*, 1909, the resulting total wage is higher than it should be. A slight reduction has accordingly been made on the basis of the number of days which mines were closed down. Figures for the number of days in operation are available for coal mines, and for some other fields, but fluctuations are so violent and so erratic that the data cannot be used as samples for all mines. Average wages in certain metal mining companies, which were made available to the Bureau, were also consulted for the purpose of checking the general accuracy of the results obtained.

(2) Manufacturing. The data for the number employed, upon which the estimates in the manufacturing group are based, were obtained from the *Census of Manufactures* (1909, 1914 and 1919) and reports of the statistical bureaus or labor departments of five states: Massachusetts, New Jersey, Michigan, New York and Wisconsin. An index was made for these sample states, checked by means of the *Census of Manufactures* in 1909, 1914 and 1919. This index number was used in interpolating the number of men at work in the non-census years. The same sources and in addition, the labor reports of Kansas, Ohio and Pennsylvania were consulted with

[1] See note b, Table 23 D.
[2] Several states report the average numbers of men employed in mines during the year, but these samples are too small to be of much use.

regard to average wages. Wages of certain special groups, such as textile, steel, and shipyard workers, and mechanics and carpenters employed by railroads, were taken into consideration for the purpose of checking the general results. It will be seen that from the abundance of material given in the exact form desired—that of average annual wages and average number employed—it was possible to construct a fairly adequate estimate of the trend of aggregate earnings in this field.

(3) Transportation. In chapter 8, in Part I, Mr. King estimates the average number of persons employed by steam railroads, street and electric railways, express, telephone and telegraph companies. These figures are based on data from the Interstate Commerce Commission and the Census, and comprehend a major part of those employed in transportation. An index number was made from the totals and applied to the number reported in the *Occupation Statistics* of 1910 after 6 per cent had been subtracted for unemployment. This per cent is a rough approximation, little material of adequate character being obtainable for an accurate estimate. Wages data also are given for the above classes of employees by the Interstate Commerce Commission and Census. Average annual wages for teamsters and drivers in Ohio and Michigan, for railway mail clerks, and scattered data on rates of pay of employees in water transportation were studied with a view to covering those occupations not included by the Interstate Commerce Commission. It will be seen that the data available are varied and fairly comprehensive, so that the conclusions reached regarding total wages for transportation should contain a minimum amount of error.

(4) Trade. Owing to the fact that there are no figures upon which to base an estimate of the numbers engaged in trade, this section is particularly unsatisfactory. The assumption was made that unemployment in 1910 would cover only the portion of those engaged who were earning wages (clerks in stores, etc.) and not those deriving their income from profits (retail dealers, etc.). Three per cent therefore was used to reduce the number attached to this group to the average number employed. The assumption was also made that in regard to the number employed, trade resembled manufactures more closely in its general movement than any other group, as the clerk in a store is more likely to become a factory worker than a farm hand, or railroad worker. However, the unprecedented increase in manufactures owing to the war was probably not paralleled closely in trade and therefore, a composite figure was used for the years after 1910. This figure was made by applying the ratio of persons engaged in trade to the total population in 1910 and to the population of succeeding years, with corrections for the business cycle and the war.

The weighted average of all wages, with the exception of the army, has

been used as the average wage of this group. This figure seems to be reasonable, in that it is slightly above average earnings in manufacturing and below average earnings in mines and transportation. Reference to Table 27C will show that the manufacturing group contains about the same proportion of women as the commercial group; but the number of independent workers is less, so that a somewhat lower average income appears justified. On the other hand, the mining and transportation groups contain only a small percentage of women, so that we may look for a relatively high average wage in these groups.

(5) Public Service. In the public service group, the increase in the number employed was assumed to be at the same rate as that of the Fire and Police Departments of six cities (St. Louis, New York, Boston, Charleston, S. C., Washington, D. C., Chicago, and Baltimore). As unemployment plays little or no part in this group, the offices being largely fixed in number and kept filled by election or appointment, the number reported by the *Occupation Statistics* for 1910 was used for that year without any reduction. An examination of Federal and state reports shows that there have been few increases in salaries during the decade in the case of officials, and as their salaries are for the most part over $2,000, they do not need to be considered in this section. The trend of annual average salaries of Fire and Police Department employees was considered to be representative of the remaining occupations in this group. The actual figures, however, have been somewhat reduced in order to take into consideration lower grade employees such as watchmen and laborers. Owing to the fact that Public Service employees are largely classified under a variety of heads (Clerical, Professional, etc), the total salaries paid to all Federal, state, county and city employees are useless for the present purpose. As separate data for the salaries paid in each occupation are difficult to segregate, the final figures for this group must necessarily be rough approximations.

(6) Professional Service. The occupations included under professional service form a long list of heterogeneous professions, teachers being about one-third of the whole. Ministers, doctors, dentists, engineers, actors, musicians are among the more important professions included. The average numbers so engaged have been estimated with the aid of the number of teachers as reported by the Bureau of Education, the number of doctors published in the biennial register of the American Academy of Physicians and Surgeons, and the number of ministers given in the *Census of Religious Bodies*, 1906 and 1916. The numbers of Federal judges and attorneys,[1] and of physicians in public health work or resident in prisons

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[1] Letter from the Department of Justice and state Reports of Treasury and Labor Departments.

and reformatories have remained approximately constant. Samples of salaries exist for several professions, although they cannot be taken as typical of the whole group without considerable adjustment. Those used in Table 23G are therefore approximations arrived at from careful study of teachers' and ministers' salaries as reported by the Federal Government and from smaller samples of the salaries of college professors, engineers and professional men in government employ.[1]

(7) Personal Service. No data except those provided by the Census exist from which to estimate the average number employed in Domestic and Personal Service. The group includes about one million domestic servants, the other two and a half million being widely scattered among barbers, laundry workers, watchmen, bartenders, restaurant workers, hotel-keepers, and other minor occupations. The numbers reported in the *Occupation Statistics* of 1910 were reduced by 6 per cent to cover estimated unemployment; a preliminary estimate of the Census Bureau supplied the corresponding number in 1920. The intervening years were interpolated. In the years 1916, 1917, 1918 and 1919, adjustment was made for the number who enlisted or were drafted into the army and navy, and for shifts into manufacturing. This estimate was made on the basis of the per cent of domestics in Class I of men registered for military service to the total number of Class I,[2] given by the Provost Marshal General for 1918 and applied to the average number in the army and navy in each of the war years. Annual average wages for some of the occupations of this group are given at odd intervals. Especially useful have been the data on laundry workers in Massachusetts each year, and in the District of Columbia for 1909, 1914 and 1919; and the data for restaurant workers in Michigan are reported from 1909 to 1918. Aside from this, the material available is in the form of rates of pay in isolated years for individuals or small groups, which are useful only as a check. While the data are meager and the method necessarily faulty, the evidence indicates that as a whole earnings of this group have increased more slowly than any other and that it is the lowest paid.

(8) Clerical Occupations. Consecutive material for an adequate estimate of the average number engaged in clerical occupations is entirely lacking. The number as given in the *Occupation Statistics* of 1910 was therefore reduced by 6 per cent to account for unemployment in that year. A preliminary estimate from the Census Bureau supplied the number in 1920. The intervening years were interpolated, and adjustments

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[1] This method is likely to give an underestimate. The newer business professions are likely to be unreported. For illustration—the income of accountants in practice on their own account or in the employ of larger firms and receiving under $2,000 each would probably total $10 to $20 million. There has been a rapid increase in the law and all professions closely associated with business.—J. E. Sterrett.

[2] Second report of Provost Marshal General, 1918.

made for the war based on the reports of the Provost Marshal General. The per cent of unemployment is only an approximation, but has some basis in that it is the same as that used in transportation and manufacturing where a large number of clerks are employed. However, the increase in the number of clerks in manufactures (*Census of Manufactures*) from 1909 to 1914 was somewhat high owing to a change in the grouping of manufacturing employees and hence could not be used as a check. The pay of clerks in railroads [1] and in shipbuilding,[2] although they could cover only a very small portion of the whole, were found to check with the figures used.

The group has as its largest division a miscellaneous class of "Other Clerks," but it also includes bookkeepers, accountants, agents, stenographers, and messengers. For the latter occupations, we find a considerable amount of wages data of a scattered nature, including various government investigations, the figures for office clerks in factories in Michigan, for clerks in railroad transportation in all years, and in manufactures in 1909 and 1914. Other States report isolated average wages for particular years, which help to check the general accuracy of the results shown. A large proportion of comparatively skilled workers is included, so that the average wages should be relatively high in comparison with those in the other occupational groups.

(9) Army and Navy. The Army and Navy is numerically of small importance with the exception of the years 1917, 1918 and 1919. For these years, monthly figures published by the War and Navy Departments, have been used to determine the average number employed during those years. The pay has been estimated from reports of the War and Navy Departments for enlisted men, with about $200 per year added for food, clothing and shelter.

Nothing has been said as yet of the number of persons engaged in agriculture. The number of farm laborers, including wives and children of farmers working on their home farms, is so uncertain that it is left for treatment under the separate section on farm laborers.

Since the total number of persons having incomes over $2,000 has been estimated in the preceding chapter, it is necessary only to subtract the numbers there shown from the total gainfully employed in order to arrive at the number having incomes under $2,000. A rough classification of persons with incomes over $2,000 according to the groups used in this section may be made from certain tables shown in the official *Statistics of Income*. The tables are entitled *Distribution of Incomes by Occupations*

[1] Interstate Commerce Commission, *Statistics of Railroads*. 1909 to 1918.
[2] *Census of Manufactures*, 1909 and *Census of Shipbuilding*, 1914, 1916.

in 1916 and *Income Reported from Business Pursuits by Industries*, in 1917 and 1918.[1] While these tables are not strictly comparable, and considerable adjustment has to be made in order to fit them into the classification here used, the general results obtained from the two sources are fairly consistent with each other. Again, it may be pointed out that the total is probably more accurate than the parts. These estimates are shown in Table 23E.

Table 23F shows the numbers left after subtracting persons having incomes over $2,000 in each group from the total average number in that group. It will be noted that the number of persons having incomes of less than $2,000 shows decreases in the war years in some groups. These decreases arise from the fact that many persons in these years rose into the group having incomes over $2,000. In the summary (Chapter 26) these changes in the distribution of income will be considered.

The final results have been subjected to a number of tests. The number gainfully employed has been estimated for each year and checked by advance information for 1920 from the Census Bureau.

The Provost Marshal General made a similar projection of the gainfully employed in 1917,[2] arriving at a total of 28,751,419, excluding farmers and farm laborers, which checks well with the figure presented for that year (29,230,000). The number actually employed in 1917 as well as in 1918 and 1919, was larger than was indicated by the projection which the Provost Marshal used, owing (1) to a shift from agriculture into industry and the army; (2) the inclusion of college students and normally idle persons in the army; and (3) the temporary employment, at wages, of housewives and other women not usually counted among the gainfully employed.

With regard to wage movements, the weighted average of wages was computed for each year, and converted into an index number on the base 1913 = 100. This series may be compared with the index number for wages published by the Bureau of Labor Statistics. In making this comparison, one should bear in mind what the Bureau of Labor Statistics has said about its own figures: "The Bureau has hesitated to attempt the preparation of such a wage index because of the incomplete and disconnected material available for its construction. However, an index number has been prepared by the Bureau from all sources accessible, and is here presented." The agreement of the results arrived at in these independent investigations corroborates their general accuracy. (Table 23B)

The division of the industrial groups according to age and sex is a vital factor in judging the relations among average wages ascribed to each. Table 23C has been prepared from the *Census of Occupations* of 1910

[1] *Statistics of Income:* 1916, p. 31; 1917, p. 16; 1918, p. 11.
[2] Second Report of the Provost Marshal General, December 20, 1918, p. 407.

TABLE 23B

COMPARISON OF THE INDEX NUMBER OF WAGES MADE IN THIS STUDY
WITH THAT OF THE BUREAU OF LABOR STATISTICS

1910 to 1920

	I 1910	II 1911	III 1912	IV 1913	V 1914	VI 1915	VII 1916	VIII 1917	IX 1918	X 1919	XI 1920
Weighted average wage a (Dollars)...	595	607	623	637	643	666	708	807	1003	1145	1321
Index number (1913 = 100)	93	95	98	100	101	105	111	127	157	180	207
Index number of Bureau of Labor Statistics b (1913 = 100)	93	95	97	100	102	103	111	128	162	184	

a Computed by dividing total amount of earnings in Table 23H by total numbers of persons, Table 23F, excluding Army and Navy.

b *Monthly Labor Review*, February, 1921, p. 74; 1919 figure applies to the spring of 1919.

and is presented to aid readers in canvassing the reasonableness of the results reached in this investigation.

TABLE 23C

PERCENTAGE DIVISION ACCORDING TO AGE AND SEX OF THE NUMBER
GAINFULLY EMPLOYED IN EACH INDUSTRIAL GROUP a IN 1910

(Clerical help included)

Group	I	II	III	IV	V
	Percentage of males		Percentage of females		Total
	Over 20 years of age	Under 20 years of age	Over 20 years of age	Under 20 years of age	
Agriculture...........	65.2	20.1	8.6	6.1	100.0
Mines...............	86.5	13.4	0.1	0.0	100.0
Manufacturing........	73.7	11.1	10.6	4.6	100.0
Transportation........	85.0	10.1	3.0	1.9	100.0
Trade...............	71.0	11.2	12.0	5.8	100.0
Public Service........	91.3	4.3	3.9	0.5	100.0
Professional Service....	51.2	3.3	37.9	7.6	100.0
Personal Service.......	28.8	3.5	53.1	14.6	100.0

a *Occupation Statistics*, 1910, Table VI, pp. 302 ff.

With these explanations, the five tables described in the preceding text are now presented. The sources from which the data were taken are shown in the appended footnotes.

TABLE 22D

THE AVERAGE NUMBER OF PERSONS ACTUALLY EMPLOYED BY OCCUPATION DIVISIONS

(Excluding Agriculture)

1910 to 1920

(Millions of Persons)

Occupation Divisions	I 1910	II 1911	III 1912	IV 1913	V 1914	VI 1915	VII 1916	VIII 1917	IX 1918	X 1919	XI 1920
Total	24.38	24.90	25.35	25.61	25.39	25.43	28.16	29.23	31.41	30.00	29.60
Extraction of Minerals	1.10 a	1.10 b	1.10	1.14	1.10	1.08	1.11	1.13	1.06	1.10	1.03
Manufacturing and Mechanical Industries	9.96 c	10.16	10.25	10.35	10.25 d	10.09	12.38	12.93	13.19	12.98	13.11
Transportation	2.48 e	2.52	2.62	2.62	2.43	2.40	2.63	2.75	2.90	2.99 f	2.92
Trade	3.52 g	3.66	3.80	3.77	3.73	3.83	3.86	3.96	4.03	4.00	4.12
Other Public Service (except Army and Navy)	.32 h	.33	.33	.34	.34	.35	.35	.35	.35	.37	.40
Professional Service	1.67 i	1.70	1.73	1.77	1.80	1.85	1.92	1.80 j	1.80	1.90	2.15
Personal and Domestic Service	3.55 k	3.61	3.67	3.74	3.82	3.81	3.77	3.56 l	3.20 l	3.24 l	3.20
Clerical Occupations	1.64 m	1.68	1.70	1.73	1.76	1.85	1.94	2.03	2.16	2.22	2.30
Army and Navy	.14 n	.14	.15	.15	.16	.17	.20 o	.72 p	2.72 q	1.20 r	.37 s

a The figure for 1910 is made up of (a) coal miners (725,030) reported by the U. S. Geological Survey, *Mineral Resources*, 1914, Part II, p. 615; (b) wage-earners in metal mines, quarries and all other mines (348,455) reported by *Occupation Statistics*, 1910, pp. 91, 304, 312, decreased by 5 per cent, which is the difference between the average number and the highest number employed in 1909 (*Census of Mines and Quarries*, 1909, p. 332). The number in manufacturing closely allied to mining was included in order to have the figure for wage-earners in metal mines, etc., comparable with that for coal miners in 1910 and with the number in coal, metal mines and quarries reported by the Bureau of Mines, 1911 to 1918. This correction was made after careful study of the *Census of Mines and Quarries*, 1909, *Occupation Statistics*, 1910, and the reports of the Bureau of Mines; and (c) number of operators and officials, etc., *Occupation Statistics*, 1910, p. 91.

b (a) The actual numbers of coal miners, metal miners and quarrymen, 1911 to 1918, were reported as follows: Bureau of Mines, *Coal Mine Fatalities*, compiled by A. H. Fay for 1915, 1916, 1917, 1918 and Geological Survey, *Mineral Resources*, 1914, Part II, p. 615, for coal miners; Bureau of Mines, Technical Papers, Number 252, p. 8, for metal miners, and Number 213, p. 44, for quarrymen. The number of coal miners, metal miners and quarrymen reported in 1909 was found to be 93 per cent of all miners, *Census of Mines and Quarries*, 1909, p. 335. The number of all miners was computed on this basis for the years 1911 to 1918. (b) The same figure for oper-

ators reported in 1910 was used in 1911, and this was projected for the years 1912 to 1918 by applying an index of the number of operators of metal mines and quarries. (Bureau of Mines, Technical Papers, Number 252, p. 8; Number 128, p. 16; Number 213, p. 6.) (c) The same number of officials reported in 1910, Occupation Statistics, p. 91, was used throughout. These figures were brought down to 1920 with aid of the preliminary Occupation Statistics for 1920.

c The number in manufacturing and mechanical industries, reported in Occupation Statistics, 1910, p. 91, and adjusted to June 30th, is 10,700,000. This figure has been reduced by an estimated number of 100,000, included in mining [see note a (b)] and in the Army and Navy (see note a); and then by 6 per cent—the difference between the average number and the highest number employed as reported in the Census of Manufactures, 1909, p. 277. The number for the years 1910 to 1914 inclusive has been computed by using an index of the total number employed in Massachusetts, (Bureau of Statistics, Annual Report, Statistics of Manufactures, 1909 to 1914); New Jersey (Department of Labor and Industry, Bureau of Statistics, Annual Report, 1909 to 1914), and Michigan (Department of Labor, Annual Report, 1909 to 1914). The amounts so found were adjusted for the entire country by the increase in manufactures as reported in the Census of Manufactures, Abstract, 1914, p. 427.

d The average number employed for the years 1914 to 1919 was computed by aid of an index of the total number employed in Massachusetts (see above), in New York (Industrial Commission, Labor Market Bulletin, 1914 to 1920, average of monthly figures made for each year and adjusted to base 1914); and in Wisconsin (Industrial Commission, Bureau of Statistics The Wisconsin Labor Market Bulletin, chart in December, 1920 was adjusted to a base comparable to New York, and used for comparative purposes.) These intervening years were then adjusted in conformity with the recently published preliminary Occupation Statistics of 1920.

e The total number actually at work (as estimated in Chapter 8, Part I) in street railways, steam railroads, switching and terminal, telegraph and telephone companies, and water transportation and also the number of railway mail clerks (Statistical Abstract, 1919, p. 313) and mail-carriers (Report of the Postmaster General, 1919, p. 157) was made into an index number and applied to the total number reported in transportation in 1910 (Occupation Statistics, p. 92), adjusted to June 30th, and cut down 6 per cent. for estimated unemployment. These estimates are based on the Bureau of the Census, Central Electric Light and Power Stations and Street and Electric Railways, 1912; Census of Electrical Industries, Electric Railways, 1917; the Interstate Commerce Commission reports on Statistics of Railways and Express Companies; Bureau of the Census, Transportation by Water, 1906 and 1916; Bureau of the Census, Telephones, 1912 and Telegraphs, 1912, and Census of Electrical Industries, Telephones, 1917, and Telegraphs, 1917.

f The only figures available for 1919 are the number of railroad employees which show an increase of 3.5 per cent over 1918, Bureau of Railway News and Statistics, Railway Statistics, 1919, p. 61. The figure for 1920 is adjusted to the preliminary Occupation Statistics of 1920.

g The number in trade reported in the Occupation Statistics, 1910, p. 93, was adjusted for June 30th, and decreased by 3 per cent (estimated per cent due to unemployment of certain classes included in this group). The per cent of this number to the total population was found for 1910 and was applied to the estimated population each year; and further adjusted by means of the index used for manufactures. It was then tied to the recently published preliminary Occupation Statistics of 1920.

h The number in Public Service (except Army and Navy) is taken from the Occupation Statistics, 1910, p. 93, and reduced by 3 per cent for unemployment. An index number of policemen and firemen was used to estimate the numbers in succeeding years. In computing this index number, the following data were used: New York City Fire Department, Annual Report, 1909 to 1918; Chicago Fire Department, Report of Fire Marshal, 1909 to 1919; Boston, Mass., Fire Department, Annual Report, 1909 to 1918; Charleston, S. C., Report of the Board of Fire Musters, 1909 to 1919; District of Columbia, Report of the Chief Engineer of the Fire Department, 1909 to 1918; Bureau St. Louis, Missouri, from letter in our files from the Department of Public Safety, Chief, Fire Department, February 28, 1921; Bureau of Census, Statistics of Fire Departments of cities having a population of over 30,000, 1917. New York City Police Department, Annual Report, 1909 to 1917; Chicago, Ill., Police Department Report, 1918, p. 8; Mass., Annual Report of Police Commissioner for Boston,

1909 to 1919; Baltimore, Maryland, *Annual Report* of the Board of Police Commissioners. 1909 to 1919; St. Louis, Missouri, *Annual Report* Police Department, 1909 to 1919; Bureau of Census, *General Statistics of Cities*, 1915, Table 2 (police).

ʲ The number in Professional Service reported in *Occupation Statistics*, 1910, p. 93, was adjusted to June 30th and projected after a study of the yearly increase in the reported numbers of teachers (Reports of the Bureau of Education, Department of the Interior, adjusted to the calendar year for the years 1910 to 1918 and 1918); the number of professors (Reports of the Bureau of Education, Department of the Interior, giving the number 1910 to 1910); the number of ministers (U. S. *Census of Religious Bodies*, 1916, Part I, p. 66); and the number of doctors reported biennially (Polk's *Medical Register and Directory of North America*, 1910, 1914 to 1915, and the *American Medical Directory*, 1912 and 1918, the latter volume containing the total number for 1916).

ʲ Adjustment was made for an estimated number in the Army. The per cent of Class I in Professional Service as reported by the Provost Marshal General (*Second Report to the Secretary of War on the Operations of the Selective Service System* to December 20, 1918, pp. 407–416, Table 42A, Industrial Index), was applied to the average number in the Army and Navy in 1917, 1918 and 1919 and subtracted from the estimated numbers for those years in Professional Service. It was then tied to the recently published preliminary *Occupation Statistics* of 1920.

ᵏ The number reported in Domestic and Personal Service in the *Occupation Statistics*, 1910, p. 94, was adjusted to June 30th and decreased by 6 per cent (estimated unemployment). A preliminary estimate from the Census supplied the number in 1920. The intervening years were interpolated and adjusted for (1) a shift to clerical occupations and (2) a sharp movement to other occupations after 1917.

ⁱ For the years 1917, 1918 and 1919 adjustments were made for the number in the Army and Navy (for method, see note ʲ); and also for a gradual shift to war industries, (Massachusetts, Bureau of Statistics, *Statistics of Manufactures*, 1917, p. l and 1918, p. liii.)

ᵐ The number in Clerical Occupations is reported in *Occupation Statistics*, 1910, p. 94, adjusted to June 30th and decreased by 6 per cent. A preliminary estimate from the Census Bureau supplied the number in 1920. The intervening years were interpolated, and adjusted to a slow shift from domestic service; these results were further adjusted for the years 1917, 1918 and 1919 for those who went into the Army and Navy. (For method see note ʲ.)

ⁿ The numbers in the Army, Navy and Marine Corps for the years 1910 to 1915 are reported in the *Statistical Abstract*, 1913, pp. 612–613 and 1915, pp. 636–637. The figure used for 1910 is approximately double that reported in *Occupation Statistics*, 1910, p. 93, owing to the fact that only those resident in the U. S. were enumerated and that men in special trades were reported as belonging to those trades and therefore to be found under manufactures, etc. (see note ᶜ) as explained on page 23 of the *Occupation Statistics*, 1910.

ᵒ *Statistical Abstract*, 1917, pp. 675, 688.

ᵖ The number in the Army is the average of the number reported each month for the year 1917 (*Statistical Abstract*, 1919, p. 728). For the number in the Marine Reserve and Naval Militia see *Statistical Abstract*, 1918, p. 728. The number in the Navy, Naval Reserve and Marine Corps is the monthly average for the year 1917 (*Statistical Abstract*, 1919, p. 729). For the number of the National Guard see *Statistical Abstract*, 1919, p. 727.

�q The number in the Army and Navy, Naval Reserve and Marine Corps is the average of the number reported for the year 1918 (*Statistical Abstract*, 1919, pp. 728, 729). For the number in the Marine Reserve, Naval Militia see *Statistical Abstract*, 1918, p. 728. The number of the National Guard is estimated to be 400,000 on the basis of the total strength in April, 1917, and subsequent enlistments (*Statistical Abstract*, 1919, p. 734).

ʳ For the number in the Army, see estimate in an unpublished letter from the War Department (on file). The number in the Navy, Marine Corps and Naval Reserve is the average of the number given each month in the year 1919 (*Statistical Abstract*, 1919, p. 729).

ˢ The figure for 1920 was adjusted to the preliminary *Occupation Statistics* for 1920 on the same basis as 1910.

TABLE 23E

THE ESTIMATED NUMBER BY OCCUPATION DIVISIONS OF PERSONS EMPLOYED HAVING INCOMES OVER $2,000

(Excluding Agriculture)

1910 to 1920

(Millions of Persons)

Occupation Divisions	I 1910	II 1911	III 1912	IV 1913	V 1914	VI 1915	VII 1916	VIII 1917	IX 1918	X 1919	XI 1920 [a]
Total	1.30	1.30	1.30	1.30	1.30	1.80	2.30	2.90	3.10	3.60	4.50
Extraction of Minerals	.07	.07	.07	.07	.07	.09	.11	.14	.15	.18	.22
Manufacturing and Mechanical Industries	.23	.23	.23	.23	.23	.32	.41	.51	.52	.63	.79
Transportation	.10	.10	.10	.10	.10	.14	.18	.23	.23	.28	.35
Trade	.46	.46	.46	.46	.46	.64	.83	1.03	1.05	1.26	1.58
Other Public Service (except Army and Navy)	.03	.03	.03	.03	.03	.04	.05	.06	.06	.07	.09
Professional Service	.32	.32	.32	.32	.32	.45	.57	.71	.73	.87	1.09
Personal and Domestic Service	.03	.03	.03	.03	.03	.04	.05	.06	.06	.07	.09
Clerical Occupations	.05	.05	.05	.05	.05	.07	.09	.11	.12	.14	.17
Army and Navy	.01	.01	.01	.01	.01	.01	.01	.05	.18	.10	.12

[a] Advance estimate divided on basis of 1919.

TABLE 23F

THE ESTIMATED NUMBER BY OCCUPATION DIVISIONS OF PERSONS EMPLOYED HAVING INCOME UNDER $2,000

(Excluding Agriculture)

1910 to 1920

(Millions of Persons)

Occupation Divisions	I 1910	II 1911	III 1912	IV 1913	V 1914	VI 1915	VII 1916	VIII 1917	IX 1918	X 1919	XI 1920
Total	23.08	23.60	24.05	24.31	24.09	23.63	25.86	26.33	28.31	26.40	25.10
Extraction of Minerals	1.03	1.03	1.03	1.07	1.03	.99	1.00	.99	.91	.92	.81
Manufacturing and Mechanical Industries	9.73	9.93	10.02	10.12	10.02	9.77	11.97	12.42	12.67	12.35	12.32
Transportation	2.38	2.42	2.52	2.52	2.33	2.26	2.45	2.52	2.67	2.71	2.57
Trade	3.06	3.20	3.34	3.31	3.27	3.19	3.03	2.93	2.98	2.74	2.54
Other Public Service (except Army and Navy)	.29	.30	.30	.31	.31	.31	.30	.29	.29	.30	.31
Professional Service	1.35	1.38	1.41	1.45	1.48	1.40	1.35	1.09	1.07	1.03	1.06
Personal and Domestic Service	3.52	3.58	3.64	3.71	3.79	3.77	3.72	3.50	3.14	3.17	3.11
Clerical Occupations	1.59	1.63	1.65	1.68	1.71	1.78	1.85	1.92	2.04	2.08	2.13
Army and Navy	.13	.13	.14	.14	.15	.16	.19	.67	2.54	1.10	.25

TABLE 28G

THE AVERAGE ANNUAL EARNINGS BY OCCUPATION DIVISIONS OF PERSONS HAVING INCOMES UNDER $2,000

1909 to 1920

(Dollars)

Occupation Divisions	I 1909	II 1910	III 1911	IV 1912	V 1913	VI 1914	VII 1915	VIII 1916	IX 1917	X 1918	XI 1919	XII 1920
Extraction of Minerals..	$ 606 a	$ 625	$ 625	$ 675	$ 700	$ 675	$ 675	$ 850	$1,100	$1,400	$1,300	$1,300
Manufacturing and Mechanical Industries..	520 b	520	535	550	570	580	610	650	770	970	1,160	1,360
Transportation..	612 c	630	670	684	700	717	757	789	903	1,250	1,250	1,500
Trade..	586 d	595	607	623	637	643	666	708	807	1,003	1,145	1,321
Other Public Service (except Army and Navy)..	1,200 e	1,300	1,300	1,300	1,300	1,350	1,350	1,350	1,350	1,500	1,600	1,700
Professional Service..	900 f	900	900	900	900	900	900	950	1,000	1,100	1,200	1,300
Personal and Domestic Service..	500 g	500	500	525	525	525	550	600	650	750	900	1,000
Clerical Occupations..	750 h	800	800	800	800	800	800	850	900	1,050	1,200	1,320
Army and Navy..	500 i	500	500	500	500	500	500	500	600	700	700	700

a The average wage of miners for 1909 was computed by dividing the total wages paid in producing mines (*Census of Mines and Quarries*, 1909, p. 21) by the average number employed during the year (p. 30). This figure was projected after a study of average wages for the following States: Kansas, Bureau of Labor and Industry, *Annual Report*, 1909 to 1919 (coal); Michigan, Department of Labor, *Annual Report*, 1910 to 1918 (coal); Illinois, *Annual Coal Report*, 1909 to 1917 (wages of hand miners and machine miners); West Virginia, Department of Mines, *Annual Report*, 1909 to 1917 (wages of pick miners); Pennsylvania, Internal Affairs Department, *Annual Report*, 1909 to 1912 (coal), 1916 to 1919 (all mines), and Department of Labor and Industry, *Annual Report*, 1913 to 1915 (other mines than coal); South Carolina, Commissioner of Agriculture, Commerce and Industry, *Annual Report*, 1909 to 1917 (coal); Census Summary, December 8, 1920 for Pennsylvania, for mines and quarries giving figures for 1914 and 1919. Other sources were consulted such as Hanna and Lauck, *Wages and the War*, p. 30 (an index of contract miners' wages in anthracite, 1902 to 1918); *Monthly Labor Review*, April, 1919, p. 176 (daily rates in metal mines 1913 to 1918) and U. S. Bureau of Labor Statistics, Bulletin No. 279, *Hours and Earnings in Anthracite and Bituminous Coal Mining*. The results (though on a lower level through the inclusion of all mining) are in general accord with the indices of average annual wages paid by the Anaconda Copper Mining Company, Miami Copper Company, Calumet and Hecla Mining Company, which were furnished to the Bureau through the courtesy of these companies.

b The average annual wage paid in manufacturing for 1909, 1914, and 1919 was based on the *Census of Manufactures*, 1909, 1914

and preliminary reports of the *Census of Manufactures*, 1919 for eleven States. For the intervening years, studies were made of wages in the labor reports of the following States: Massachusetts, Bureau of Statistics, *Statistics of Manufactures*, 1909 to 1918; New Jersey, Department of Labor and Industry, Bureau of Statistics, 1909 to 1915; Kansas, Department of Labor and Industry, 1909 to 1914; Michigan, Department of Labor, 1909 to 1918; Ohio, Bureau of Labor Statistics, 1909, 1910, 1911; South Carolina, Commissioner of Agriculture, Commerce and Industry, *Annual Report*, 1909 to 1918; West Virginia, Bureau of Labor, *Biennial Report*, 1909 to 1917; Wisconsin, Industrial Commission, Statistical Department. *Wisconsin Labor Market Bulletin*, December, 1920 (index of total wages and weekly wages, 1915 to 1920); New York (State) Industrial Commission, *Labor Market Bulletin*, 1914, 1920 (an index of weekly and total earnings).

Other sources used were: U. S. Steel Corporation, *Annual Reports*, 1912 to 1919; Bethlehem Steel Corporation, *Annual Report*, 1919, p. 12 (figures for 1911 to 1919); *Monthly Labor Review*, February, 1920, p. 117 (union wage rates per hour, 1909 to 1919); *Census of Ship Building*, 1914 and 1916, including figures for 1909; U. S. Shipping Board, *3rd Annual Report*, June 30, 1919 (wages for 1914, 1918 and the early part of 1919).

c The following sources were studied in order to estimate wages paid in transportation:

For street railways: Bureau of Census, *Central Electric Light and Power Companies, Street and Electric Railways*, 1912, p. 289; Bureau of Census, Census of Electrical Industries, *Electric Railways*, 1917.

For railroads: Interstate Commerce Commission, *Statistics of Railways*, 1909 to 1918; figures for Class I railroads were studied after salaries of clerks, engineers, draftsmen, carpenters, mechanics, and telegraphers had been subtracted. These figures were roughly $50 lower for each year than those for all employees of Class I railroads. The Bureau of Railway News and Statistics, *Railway Statistics*, 1919, p. 59, gives averages wages for 1919.

For switching and terminal companies: See Part I of the present volume, Chapter 9, Table 9I.

For telephones: Census of Electrical Industries, *Telephones*, 1917, p. 45; and *Statistical Abstract*, 1919, pp. 322, 324, 325.

For telegraphs: Bureau of Census, *Telephones and Telegraphs*, 1912, p. 159; Bureau of Census, Census of Electrical Industries, *Telegraphs*, 1917, p. 12; and *Statistical Abstract*, 1919, p. 322.

For water transportation: Bureau of Census, *Transportation by Water*, 1916, p. 59; and *Monthly Labor Review*, November, 1920, pp. 90, 91, monthly rates for captains 1917 and 1920.

For railway mail clerks: *Statistical Abstract*, 1919, p. 313.

For mail carriers: Report of the Postmaster General, 1917, p. 29; 1918, p. 24; 1919, pp. 61 to 157.

For teamsters: Ohio, reports of Bureau of Labor Statistics, 1909 to 1911 (in cities): Michigan, Department of Labor, individuals working for state prison, 1910 to 1918.

d A weighted average wage for all persons employed having incomes under $2,000 (except those in the Army and Navy) was used for Trade, since no data were available beyond a few scattered references to average wages for salesmen in Virginia and Ohio, storekeepers as given by state prisons in Michigan, insurance agents employed by the government, and daily wages for women in mercantile pursuits in Kansas and Ohio. This average wage was found by dividing the total wages paid all persons in Table 23H less groups 4 and 9, by the total number of persons in Table 23F less groups 4 and 9.

e See note *h* of Table 23D for references to Police and Fire Departments. Salaries of officials were studied in Indiana, *Report of the Treasurer*, 1909 to 1916, and *Yearbook*, 1917 and 1918; Wisconsin, *Report of the Treasurer*, 1909 to 1916, *Blue Book of Wisconsin*, 1915 to 1917; United States Treasury Department, Division of Bookkeeping and Warrants, *Estimates of Appropriation*, 1911 to 1920; New York State Comptroller *Annual Reports*.

f The following material was consulted in estimating the average earnings of the professional group:

For professors: *School and Society*, Vol. 5, p. 266, and p. 378, and Department of Interior, Bureau of Education, Bulletin 1920, No. 20, *Salaries in Universities and Colleges in 1920*.

For teachers: in Public Schools for the school years 1909 to 1916, and 1918, Reports of U. S. Bureau of Education; W. R. Burgess, *Trends of School Costs*, N. Y. Russell Sage Foundation, 1920; Bureau of Applied Economics, *Wages in Various Industries*, p. 47 (salaries for 1910, 1915 and 1918).

For ministers: U. S. *Census of Religious Bodies*, 1916; *Methodist Year Book*, 1920, p. 61 (annual salaries from 1909 to 1919).

For engineers: N. Y. State Bureau of Municipal Information, *Report*, number 27, 1916; Engineering Council, *Report of Committee on Classification and Compensation of Engineers*, December 15, 1919.

For attorneys: New York State Comptroller, *Annual Reports*; N. Y. State Bureau of Municipal Information, *Reports* 55 and 118, 1917.

For judges: *Indiana Yearbook*, 1919; N. Y. State Bureau of Municipal Information, *Report Number 32* (largely over $2,000), 1917.

a Articles giving amounts earned in special investigations according to age or length of time out of college were also consulted. Wm. de Witt Hyde, *The College Man and the College Woman*, 1906, p. 221 (Bowdoin College graduates engaged in law, medicine, ministry, education, journalism, business, banking, and government service); *Scientific American*, Vol. 109, August 9, 1913, p. 116, Dr. David E. Rice, *Study of Incomes of Technically Trained Men* (mechanical, electrical and chemical graduates of Pratt Institute, Brooklyn); *Harvard Law Review*, Vol. 27, p. 260.

a The following material was consulted in estimating the average earnings for personal service:

For domestic workers: Minnesota, Bureau of Labor, *Biennial Report*, 1910, monthly wages; Michigan, Department of Labor, *Annual Report*, individuals employed by state prison, 1910 to 1918.

For charwomen: U. S. Treasury Department, Division of Bookkeeping and Warrants, *Estimates of Appropriations*, 1910 to 1918.

For laundry workers: U. S. Census of Manufactures, 1909, 1914 and press summary 1919 for District of Columbia; Massachusetts, Bureau of Statistics, *Statistics of Manufactures*, 1910 to 1918; Michigan Department of Labor, *Annual Report*, 1910 to 1918, prison statistics.

For restaurant workers: Michigan, Department of Labor, *Annual Report*, daily wages, 1913 to 1918.

For elevator tenders: *Congressional Record* 65:2, vol. 56, p. 5129, April 16, 1918. Senator Smoot's table, average annual salaries 1914 and 1918, male and female, for federal, commercial and state employees.

h The following documents were consulted in arriving at an estimate for clerical earnings:

Ohio, Bureau of Labor Statistics, *Annual Report*, 1909 to 1911 monthly wages of stenographers, clerks, bookkeepers; *Congressional Record*, 65:2, vol. 56, p. 5129, April 16, 1918, for 1914 and 1918 male and female, federal, commercial and state employees; Virginia, Bureau of Labor and Industrial Statistics, *Annual Reports*, 1910 to 1919, Report of Collector of Internal Revenue, samples of messengers, janitors, clerks; U. S. Treasury, *Report of Finances*, 1910 to 1919, Report of Collector of Internal Revenue, samples of messengers, janitors, clerks; U. S. Division of Bookkeeping and Warrants, *Estimates of Appropriations*, Class 1, 2, 3 and 4, clerks; Indiana, Treasurer's report, 1909 to 1916. These figures were checked by comparing results with data received confidentially from a number of banks and corporations.

i Actual average annual amounts of pay received by enlisted men in the Navy in 1917 and 1918 were found (*Navy Yearbook*, 1918, pp. 831 to 838, 866 to 874) and monthly rates of pay in the Army (Bureau of Applied Economics, *Wages in Various Industries and Occupations*, pp. 8, 9, for 1908 to 1917 and 1917 to 1919) for each grade. The latter were then weighted by the number of men in each grade taken from the U. S. *Official Register*, 1910 and 1916. This method gives a more accurate basis for an estimate than the total amount of pay reported each year for the entire army which includes pay of retired officers, clerical help in staff offices, etc. To the estimated amount of pay to enlisted men in the Army and Navy each year was added an allowance for board and clothes of $200 per year.

TABLE 23H

THE TOTAL EARNINGS BY OCCUPATION DIVISIONS OF PERSONS HAVING INCOMES UNDER $2,000

(Excluding Agriculture)

1910 to 1920

(Millions of Dollars)

Occupation Divisions	I 1910	II 1911	III 1912	IV 1913	V 1914	VI 1915	VII 1916	VIII 1917	IX 1918	X 1919	XI 1920
Total	$13,711	$14,311	$14,971	$15,458	$15,462	$15,717	$18,294	$21,179	$27,777	$29,882	$33,020
Extraction of Minerals	644	644	695	749	695	668	850	1,089	1,274	1,196	1,053
Manufacturing and Mechanical Industries	5,059	5,313	5,511	5,768	5,811	5,960	7,781	9,563	12,290	14,326	16,755
Transportation	1,499	1,621	1,724	1,764	1,671	1,711	1,933	2,276	3,337	3,387	3,855
Trade	1,820	1,942	2,081	2,107	2,102	2,123	2,144	2,365	2,989	3,138	3,355
Other Public Service (except Army and Navy)	377	390	390	403	418	418	405	391	435	480	527
Professional Service	1,215	1,242	1,269	1,305	1,332	1,260	1,282	1,090	1,177	1,236	1,378
Personal and Domestic Service	1,760	1,790	1,911	1,948	1,990	2,073	2,232	2,275	2,355	2,853	3,110
Clerical Occupations	1,272	1,304	1,320	1,344	1,368	1,424	1,572	1,728	2,142	2,496	2,812
Army and Navy	65	65	70	70	75	80	95	402	1,778	770	175

§ 23c. The Earnings of Farm Laborers

The Census for 1910 places the number of farm laborers at 6,390,000,[1] and estimates that $651,611,287 [2] was expended by farmers for labor. These figures would yield the rather absurd average annual wage of $102 for each farm laborer. Inquiry has developed the fact that among farm laborers are included those wives and children of farmers who work only at irregular intervals, and often for only a few days. The Census uses the terms "home farm" and "working out" in subdividing farm laborers. There are reported under the title "home farm," 3,310,000 persons of whom 2,216,000 are under twenty years of age. Of those over twenty years, 563,000 are women, leaving only 531,000 males over twenty years old in the home-farm group. These laborers appear to be mainly sons working with their fathers, and their earnings are probably included as part of the general income of the farm.

There are left therefore, as independent income receivers 3,080,000, of whom 2,637,000 are laborers "working out," and 443,000 are under special classifications. Of the entire group, 274,000 are under sixteen years of age, and 350,000 are women. Even after the numbers are reduced in this way, when they are taken in conjunction with the $652 million paid out by farmers, we still have the low average wage of $212.

The total amount paid by farmers for labor is generally accepted by qualified judges as approximately correct. It was compiled by asking each farmer what sum he paid out for labor. The number of farms and acreage under cultivation remained approximately the same throughout the decade, so that the assumption is made that the amount of hired help remained about the same.[3] The only item of change, then, is in the rate of monthly pay without board, which is taken as typical of the movement of wages. These reports give the average wages of a large number of reporting districts and their accuracy is only approximate.

While the amounts shown in Column III of table 23I are all that were paid by farmers, yet it is clear that more than this must have been earned by those who were classed as agricultural laborers. The group of 3,080,000 who worked out probably earned at least an average of $400 per year. The best conjecture available is that about one-quarter million laborers are hired by the year, some one and one-half million by the month for a period of three to seven months, and about a million more are employed by the day. Conditions in different parts of the country vary so greatly that estimates based on any locality must be accepted with reservations, and

[1] Bureau of the Census, *Occupation Statistics*, p. 302 ff. includes agricultural laborers, other agricultural pursuits and other occupations under forestry and animal husbandry.
[2] *Abstract of the Census*, 1910, p. 372.
[3] In 1920, this preliminary *Occupation Statistics* indicate slightly under three million independent income receivers, as against slightly over three million in 1910.

these numbers are given only as rough approximations. The month and day laborers ordinarily find some other occupation during the winter to supplement their wages from the farm.

The total earning capacity of this group in 1910 must have been in the neighborhood of one to one and a quarter billions, of which only $652 million was received in money from farmers. It is not unreasonable, therefore, to add $500 million for 1910 to the $652 million in order to arrive at total earnings.[1] This assumption imputes a lower earning power to farm laborers than to any other class, which is in accord with what seem to be the facts. A similar amount, increased in proportion to the general wage level, has therefore been added to the estimate of farm laborers' income for each subsequent year. The amount for 1920 has, however, been increased to allow for the return of 250,000 men from the army to farm labor, and their rate of pay is added. This increases the proportionate amounts shown for 1920 by 1/12 (3,080,000 ÷ 250,000).

TABLE 231

ESTIMATED EARNINGS OF FARM LABORERS

1910 to 1920

(Millions of dollars)

Year	I Monthly wages without board a	II Relative pay	III Total wages from farm labor b	IV Other earnings c	V Total earnings of farm laborers
1910	$27.50	100.0	$ 652	$ 500	$1,152
1911	28.77	104.6	682	511	1,193
1912	29.58	107.6	701	527	1,228
1913	30.31	110.2	718	538	1,256
1914	29.88	108.7	708	543	1,251
1915	30.15	109.6	714	565	1,279
1916	32.83	119 4	778	597	1,375
1917	40.43	147.0	958	683	1,641
1918	48.80	177.5	1,157	844	2,001
1919	56.29	204.7	1,334 d	968	2,302
1920	64.95	236.2	1,668	1,110	2,778 e

a *Statistical Abstract*, 1920, p. 303.
b $651,611,287, *Abstract of the Census*, 1910, p. 372, projected by index in Column II.
c $500 million in 1910 projected by index of wages.
d The recently published Summary of the 1919 Census of Agriculture places the amount expended by farmers for labor at $1,356,403,452.
e For explanation see text.

[1] Duplication of wages actually earned in other industries, to which farm laborers turn in winter, is avoided because of the fact that they are not enumerated in those industries. There is no error in the total: but there is a certain amount of error in the manner in which the earnings are divided between industries

§ 23d. Pensions

Pensions of the Federal, State, and City governments may be credited entirely to persons having incomes under $2,000.   The Commissioner of Pensions reports annually the amounts paid for Federal pensions; state pensions are reported in the *Financial Statistics of States;* and city pensions are reported in the *Financial Statistics of Cities*.   Both of these volumes are issued by the Census Bureau at irregular periods, so that figures for intermediate years have been interpolated.   Other forms of pensions, received from corporations and lodges, are incapable of determination; but they appear to be so small a factor in the total that they may safely be disregarded.

TABLE 23J

FEDERAL, STATE AND CITY PENSIONS

1910 to 1920

(Millions of dollars)

	I Federal *a*	II State	III City	IV Total
1910.........................	$159.9	$ 8.4 *b*	$ 6.8 *b*	$175.1
1911.........................	157.3	9.7 *b*	7.6 *d*	174.6
1912.........................	152.9	11.0 *b*	8.5 *d*	172.4
1913.........................	174.1	12.3 *b*	9.2 *b*	195.6
1914.........................	172.4	13.6 *b*	9.9 *b*	195.9
1915.........................	165.5	14.9 *c*	10.6 *d*	191.0
1916.........................	159.1	16.1 *c*	11.6 *b*	186.8
1917.........................	160.8	17.3 *b*	12.7 *d*	190.8
1918.........................	179.8	18.6 *c*	13.5 *d*	211.9
1919.........................	222.2	20.2 *c*	14.3 *b*	256.7
1920 *e*.....................	....	....	...	....

a Annual Reports of the Commissioner of Pensions.
b Interpolated.
c U. S. Census, *Financial Statistics of States* (1915, p. 90; 1916, p. 92; 1918, p. 90; 1919, p. 84).
d U. S. Census, *Financial Statistics of Cities* (1911, p. 191; 1912, p. 201; 1915, p. 193; 1917, p. 207; 1918, p. 191).
e Data not available.

§ 23e. The Rental Value of Homes Owned by Their Occupants

The Census of 1910 reports the number of homes, excluding farm homes (which are taken up in Chapter 24 under farmers' incomes), as 14,131,945.[1] Of these, 3,408,854 were owned unencumbered, 1,701,062 were owned encumbered, and 135,464 were not reported in regard to the question of

[1] *Census of Population*, 1910, p. 1294.

encumbrance. The remaining eight million homes were presumably rented, and the income accruing from these rentals is included under other headings. Owing to the lack of later information, it has been necessary to assume for purposes of computation, that the number of homes owned increased since 1910 in the same ratio as the general population. The amount of encumbrance has been placed at one-third the total value, an estimate arrived at after consultation with a number of real estate experts.

The present estimate is concerned only with homes owned by those having incomes under $2,000, and it is therefore necessary to subtract from the total number those homes owned by persons having more than $2,000 per year. Here we enter the realm of pure conjecture, but it appears likely that the major portion of all homes were owned by persons with incomes under $2,000—say 3 million of the homes owned unencumbered and one and a half million of the homes owned encumbered. The best that can be said of an estimate made by such a method is that the error is a constant one, and that the total is not a large factor in the entire national income.

The question of deciding on an estimate for average rental is almost equally hazardous, but here there is some statistical basis for the estimate made. One method is to ascertain as nearly as we can the proportion of total income that is spent on house rent, and assume that the owner derives this proportion of his income from the use of his home. According to the results of the cost of living survey made by the Bureau of Labor in 1918 to 1919, 13.4 per cent of the total average yearly expenses per family or 12.6 per cent of total average family income, was paid for rent.[1]

Other estimates of the proportion of expenditure for shelter to all expenses for consumption goods are as follows:—

TABLE 23K

PERCENTAGE OF INCOME EXPENDED FOR SHELTER [a]

Authority	Date	Number of families	Place	Percentage
U. S. Bureau of Labor Statistics	1901	11,156	U. S.	18.12
U. S. Bureau of Labor Statistics	1917	608	New York	12.91
U. S. Bureau of Labor Statistics	1917	512	Phila., Pa.	12.04
U. S. Railroad Wage Commission	1915	265	U. S.	20.00
Dallas, Texas Wage Commission	1917	50	Dallas, Texas	14.51
R. C. Chapin income $1000–$1099	1907	31	New York	18.01
Average, weighted according to number of families				17.65

[a] National Industrial Conference Board, *Report No. 9*, p. 4.

[1] *Monthly Labor Review*, August, 1919, p. 118. This investigation covered 12.096 families in 92 industrial centers.

The average, 17.65 per cent, shown in table 23K, is the proportion which the National Industrial Conference Board accepts in its studies of the cost of living. It will be seen, however, that the system of weighting gives great prominence to the investigation of 1901 by the Bureau of Labor Statistics, and that all but one of the later investigations, though more restricted in their scope, show a lower percentage of total income spent for rent.

What probably happened was that the proportion of rent to the total income decreased during the decade—at least until 1918. For the year 1910, therefore, the composite figure of the National Industrial Conference Board is perhaps preferable to the lower ratio of rent found in 1918 to 1919 by the Bureau of Labor Statistics. The average family income in 1910 was about $1200,[1] and 17.65 per cent of this gives $211.80. But a further reduction must be made; not all rent is to be considered as net income to the recipient. About 40 per cent of the rent goes for various expenses of upkeep, repair, taxes, etc., leaving perhaps 60 per cent as net return. This would leave $147.08—or say, $150.00 as the average amount which home owners received as income from their homes in 1910, based on this method of computation.

The average rentals in 91 localities paid by families having an income between $1200 and $1500 per year is reported in the *Monthly Labor Review* as $174 per year.[2] Since these families varied in income and size a further study was made of families of five having an income of $1300, and the average amount of rent was found to be $167 per year.

The average rental paid in 1920 in 92 cities by laboring families is given in the *Monthly Labor Review*.[3] It is stated that "families who live in houses or apartments owned by themselves, and families living in houses or apartments where either heat or light or both are included in the rent, have been omitted." This is therefore a selected sample from which the higher ranges of income are excluded. The average rent of $167.79 may accordingly be considered the low limit, for 1920. This figure should be compared with an indicated rent of $219 for 1920, which is found by applying the average of the index numbers of the National Industrial Conference Board and the Bureau of Labor Statistics (Table 23L) to the basic average rent of $150 in 1910.

If, then, $150 per year is accepted as an average figure in 1910 for the income received from homes by their owners, and this is combined with the conjectured number of homes, the total income in that year was about $600 million. This should be increased by an index number indicating changes in rents, and for this purpose the average of the indices computed

[1] Estimated from total income under $2,000 and number of families.
[2] *Monthly Labor Review*, September, 1919, pages 9 to 30. This survey was made under the direction of Dr. W. F. Ogburn.
[3] *Monthly Labor Review*, September, 1920, pages 84 to 91.

by the National Industrial Conference Board and the Bureau of Labor Statistics is used. The final results show a total income from this source varying from $600 to about $900 million.

TABLE 23L

RENTAL VALUE OF HOMES OWNED BY OCCUPANTS HAVING INCOMES UNDER $2,000

1910 to 1920

Year	I	II	III	IV
	Index numbers of house rents			Estimated rental value of homes owned by occupants d
	Bureau of Labor Statistics a	National Industrial Conference Board b	Average	
	Per cent	Per cent	Per cent	Million dollars
1910..............				$600 e
1911..............				600 e
1912..............				600 e
1913..............	100	100	100	600
1914..............	100	100	100	600
1915..............	101.5	100	100.8	605
1916..............	102.3	101.5	101.9	611
1917..............	101	105	103	618
1918..............	105	115	110	660
1919..............	114 c	128	121	726
1920..............	134.9 c	158	146.5	879

a *Monthly Labor Review*, October, 1920, p. 65. These studies are based on 18 cities from 1914 to December, 1917, and thereafter on 31 cities. Prior to 1919, the figures are given for December, and are interpolated for July.

b *Report No. 30*, September, 1920. These studies are based on reports from 359 agencies in 158 cities. The figures are for July of each year.

c Figures for June.

d For estimate—$600 million—see text. This amount is projected by Column III.

e Estimated.

§ 23f. Income from Investments

The most obvious method of estimating income from investments is to find what proportion it normally bears to total income. This may be done in several ways and the results compared.

The first method is to prolong the curve made from income-tax data to show the relation between income from investment and income from personal earnings to include the lower ranges. This curve, however, is defective in two ways: (1) It is necessary to class all "business income" as personal earnings, on the ground that it is due to effort and only differs from personal earnings in its contractual nature. (2) This curve tells us what

are the probable personal earnings given any sized income, and not the probable income given any particular earnings. Were the correlation perfect, this form of statement would make no difference; but unfortunately the correlation is unknown, and the original data are not in such shape that they can be turned into a different form.

This curve taken at its face value indicates that personal earnings should be increased as follows, in order to arrive at total incomes of individuals:

TABLE 23M

RELATION BETWEEN PERSONAL EARNINGS AND TOTAL INCOME INDICATED BY INCOME–TAX DATA

1918

Average personal earnings	Average total income
$2,000	$2,215
1,800	1,960
1,600	1,713
1,400	1,480
1,200	1,245
1,000	1,023
800	811
600	603
400	401
200	200

It is clear that this curve cannot be projected more than a short distance, say to $1,500, before it loses all semblance of reality. The most, therefore, that can be said, is that less than 13 per cent (the amount reported by the Bureau of Internal Revenue in its lowest range, $2,000–$3,000) and probably not over 10 per cent of the incomes below $2,000 are due to investments of one kind or another.

Further light is cast on this question by a sample of 12,096 family incomes well scattered in regard to area which were collected by the Bureau of Labor Statistics in 1919. This summary shows the percentage relation of total income to total earnings for the entire range of incomes from "under $900" to "over $2,500," thus considerably overlapping the income tax class. These relations are as shown on page 296.

It will be seen that no definite trend is indicated towards a larger percentage of income from investments with the rise in incomes. Such slight increase, as there is, does not approach the 13 per cent of the $2,000–$3,000 class reported by the *Statistics of Income*. However, it is stated that the effort made in collecting these data was to exclude families which

received any considerable portion of their income from sources other than the husbands' earnings. It is, therefore, to be expected that the proportion of income from investments will normally be higher than that shown in this sample, and that 3½ to 4 per cent may therefore safely be regarded as a minimum figure.

<div align="center">TABLE 23N</div>

PERCENTAGE OF TOTAL INCOME TO TOTAL EARNINGS

(Based on a sample of 12,096 families a)

Income in dollars	White families	Colored families
Under $900	103.96	103.37
$900–1,200	103.65	103.86
1,200–1,500	103.84	104.93
1,500–1,800	104.15	104.67
1,800–2,100	103.82	108.72
2,100–2,500	105.15	104.98
2,500 and over	103.95	100.49

a *Monthly Labor Review*, December, 1919, pp. 40–41.

The total incomes of 1,602 school teachers in five cities were reported as $1,645,460 in 1913.[1] These incomes were analyzed in regard to their sources, and it was found that $1,552,640 came from salaries, and $92,820 from investments. The latter is 5.98 per cent of the former.

In arriving at a decision as to the percentages to be used, the limits were taken as between 4 per cent and 10 per cent. The former is known to be low. The latter rests on questionable assumptions. In view of the fact that the modal income is placed at a figure below $1,000 and that there is probably some relation between income from wages and income from property, it is believed that no great error can be involved in adding 6 per cent to personal earnings in order to arrive at the total income of persons of the group under $2,000.[2]

The results of this computation are shown in the following table:

[1] Report of the Committee on Teachers' Salaries and Cost of Living. 1913.
[2] Bowley. *The Division of the Product of Industry*, page 14, estimates the total "earned" in England below £160 to be £1,046 million and the total "unearned" income below £160 to be £50 million, or about 5 per cent.

TABLE 230

AMOUNT RECEIVED FROM INVESTMENTS BY ALL PERSONS HAVING INCOMES UNDER $2,000

1910 to 1920

(Millions of dollars)

Year	Personal earnings	Estimated income from investments
1910.	$13,711	$ 823
1911.	14,311	859
1912.	14,971	898
1913.	15,458	927
1914.	15,462	928
1915.	15,717	943
1916.	18,294	1,098
1917.	21,179	1,271
1918.	27,777	1,667
1919.	29,882	1,793
1920.	33,020	1,981