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THE NATIONAL TOTALS

as estimated by

WILLFORD I. KING

Revisions in the Method of Computing the Total Income of the People of the United States and the Totals for 1919, 1920, and 1921

PRELIMINARY STATEMENT

THE NATIONAL TOTALS

Scientific knowledge grows by a process of accretion. The development of the work of the National Bureau of Economic Research in its study of income in the United States furnishes an illustration of this truth. Three years ago it presented its first report on that subject. Since that date, many additional sources of information have been found, a number of new collections of statistical data have become available, and several improved methods of utilizing the material on hand have been devised. For these reasons, most of my time and that of my assistants has, since 1922, been spent in improving the estimates of income for the years 1909 to 1918 and in extending the figures to cover 1921. It is believed that the accuracy of the income totals for the United States has been materially increased by the investment of this large amount of effort. It is certain that, like the pot of gold at the end of the rainbow, the goal of perfection is still and always must be some distance ahead. However, I feel certain that I am distinctly closer to this goal today than I was three years ago. I hope to make the distance still smaller as time passes. The estimates have been improved somewhat even since Mr. Leven started to apportion the income between the different States, a fact which accounts for the aggregates for the United States being, in some instances, slightly different from the sum of the items for the respective States. There is no expectation that this work of revising and improving the figures will cease. My hope is that it may go on as long as better results can be secured. The reader is asked then to regard all the figures in this volume as estimates, with some distance intervening, as a rule, between them and the truth, but with the gap, in most cases, too narrow to invalidate the important conclusions set forth. It is hoped that, as the years pass, the gap will be made even narrower in many places.

When using the totals presented in this volume the reader should keep in mind what these aggregates do and do not stand for. They

do not represent the income of the national government, the value of the psychic income of the people, the social income,[1] or the income as it would be if all the people of the Nation or a State acted as an indivisible whole. They are merely sums of those kinds of individual book incomes commonly accounted for in terms of money. If every individual kept an accurate set of private accounts and thereby arrived at his net money income for the year, and if all these net incomes were added together, the resulting totals would be those which this report attempts to approximate.

Those who have read *Income in the United States*[2] will wish to know in what way the methods there described have been modified. These changes may all be grouped under seven main heads:

1. Reclassification of the gainfully employed.
2. Separation of salaried employees from wage workers and of salaries from wages.
3. Segregation of the mercantile industry from the unclassified group.
4. Merging of the miscellaneous hand trades with the unclassified group.
5. Inclusion of income received from foreign sources and deduction of income paid to foreigners.
6. Adoption of a uniform practice of using as divisors index numbers of the prices of consumption goods.
7. Substitution for business savings of changes in the command over consumption goods given to individuals by variations in their wealth.

The above changes will be discussed seriatim.

Reclassification of the Gainfully Occupied.

The investigation of the unemployment situation in the United States in 1920–1922 made by the National Bureau of Economic Research for President Harding's Conference on Unemployment brought to light certain new facts concerning the relationship of different industries to each other with respect to employment

[1] The term *social income* as here used is intended as an equivalent for the concept "flow of physical commodities and services" suggested by Professor John R. Commons.

[2] Published by The National Bureau of Economic Research, 1922; Vol. II, Part I.

conditions. These discoveries indicated that an industrial classification of the gainfully occupied population of the Continental United States might be made which would be somewhat more accurate than the one given in *Income in the United States*, Vol. II, Sec. 2d. The figures have, therefore, been revised throughout.

The first step was to revise the estimate of population by adopting the method suggested by Mr. Donald R. Belcher of the American Telephone and Telegraph Company, and to recalculate thus the population total for the United States on the basis of absolute numbers rather than rates. When this revision was completed, the next step taken was to estimate the population of the United States 15 years of age and over as accurately as possible. From the latter totals for the various years the corresponding totals of native white married women have been deducted, this subtraction being made upon the ground that, since relatively few of this class work for a direct monetary compensation, a better indicator of the number of gainfully occupied is secured when they are omitted. By aid of the residues used as index numbers, estimates of the total number of gainfully occupied in each year have been interpolated between the Census dates.

The number of entrepreneurs in each industry has been estimated in much the same way described in *Income in the United States*, Vol. II, Sec. 2d. The appearance of the 1920 Census of Occupations has, however, made possible a distinctly higher degree of accuracy in the estimates than could previously be attained; but even yet the figures are merely rough approximations.

TABLE A.—ESTIMATED TOTAL NUMBER OF ENTREPRENEURS
December 31 (Thousands)

Industry	1918	1919	1920	1921
All Industries	9,708	10,029	10,068	10,089
Agriculture	6,375	6,380	6,383	6,386
Mines, Quarries, and Oil Wells	23	22	21	20
Manufacturing	214	208	203	197
Construction	166	160	160	160
Transportation	27	27	28	28
Banking	3	3	3	3
Mercantile	1,254	1,374	1,409	1,430
Unclassified	1,645	1,854	1,861	1,865

The total number of employees attached to all industries has been calculated for each year by subtracting the number of entrepreneurs from the total number gainfully occupied. The average numbers in the various classes are estimated for the years covered by this study to have been as follows:

TABLE B.—NUMBER OF PERSONS GAINFULLY OCCUPIED

AVERAGE FOR THE YEAR (thous.)	1919	1920	1921
Total persons gainfully occupied	40,282	40,008	40,819
Total number of entrepreneurs	9,752	10,049	10,079
Total number of employees	30,530	29,959	30,740

The requirements of the study have made it necessary to apportion these employees among the industries on the basis of their normal affiliations. The first step has been to estimate the number of employees at work in each field in each year. For most of the fields, the data available are sufficient in quantity to enable this estimate to be made with a reasonable degree of accuracy. In the other fields rough approximations must, perforce, suffice. According to the best available evidence, from one to three per cent of those attached to an industry are idle even at the peak of a boom. It further appears to be true that, when a depression strikes an industry, those attached to the industry remain for some time unemployed and do not at once transfer their activities to other fields. Their tendency to "stay put" is partly ascribable to inertia; but another powerful influence tending in the same direction is the fact that, when one industry is so depressed that its workers might be expected to seek employment elsewhere, most other industries are not sufficiently active to desire to take on additional help. In view of these facts, the method of estimating the number of workers attached to an industry is first to plot a curve showing the number at work and then to draw smooth trends through points two or three per cent higher than the crests of the cycle waves.

Separation of Salaried Employees from Wage Workers.

In this study, salaried employees and wage workers have been treated separately, the division between these two classes being

drawn on the same lines as those laid down by the Bureau of the Census: that is the managerial staff, the office workers, and those having relatively high security of tenure are usually counted as salaried, while the remaining employees are classed as wage workers. By plotting two separate curves for each industry, the following estimates have been arrived at:

TABLE C.—ESTIMATED THOUSANDS OF EMPLOYEES ATTACHED TO INDUSTRY

Industry		1919	1920	1921
All Industries	Salaried	7,992	6,901	7,138
	Wage	22,538	23,058	23,602
Agriculture	Salaried	70	71	71
	Wage	2,499	2,419	2,404
Mines, Quarries, and Oil Wells	Salaried	77	75	74
	Wage	1,105	1,142	1,156
Manufacturing	Salaried	1,468	1,568	1,497
	Wage	9,813	9,733	9,089
Construction	Salaried	96	75	76
	Wage	1,002	779	778
Transportation	Salaried	669	742	758
	Wage	2,598	2,743	2,738
Banking	Salaried	195	205	205
	Wage	[a]	[a]	[a]
Mercantile	Salaried	509	522	565
	Wage	2,593	2,693	2,733
Government	Salaried	4,108	2,807	2,786
	Wage	[a]	[a]	[a]
Unclassified	Salaried	800	835	1,106
	Wage	2,928	3,550	4,705

[a] Wage workers included with salaried employees.

One of the most striking changes to be observed during the three years is the growth in the number of employees assigned to "unclassified" industries. The totals for this group are residues representing what is left over after the employment in the recorded industries has been accounted for. The information concerning

the industries of mining, manufacturing, construction, transportation, and government is deemed sufficiently accurate to give us assurance that little growth in employment occurred in those fields. The year 1921 was the worst year of the agricultural depression — hence it seems unlikely that the farm attracted new employees. Computations for earlier years indicate that manufacturing and the army drew heavily from the unclassified fields in the years 1917 to 1920. It appears, therefore, that, after the crash in 1920, employees drifted back to their old callings — at least no other explanation of their industrial affiliations seems so plausible.

The foregoing figures in conjunction with wage and salary data serve as a basis for computing the income paid to the employees by the various industries.

Segregation of the Mercantile Industry from the Unclassified Group.

Among the major departures from the course pursued in the earlier study of income must be listed the segregation of the mercantile industry. This task was found to be quite laborious, and, unfortunately, the data obtainable proved less dependable than had been hoped. As a result, the figures derived may be widely in error. It is still believed, however, that the separation of this industry from the "Unclassified" group has increased to some extent the accuracy of the totals for all industries, and that the driving of this entering wedge may lead later to more significant results.

Merging of the Miscellaneous Hand Trades with the Unclassified Group.

What may seem like a backward step is the throwing back of the miscellaneous hand trades into that catch-all group entitled *Unclassified Industries.*[1] This policy was finally decided upon because the making of the estimates for the minor hand trades was very laborious and yet no way was discovered of obtaining results of sufficient reliability to command much confidence.

The figures for Miscellaneous Income and for income derived by entrepreneurs and other property owners from *Unclassified Indus-*

[1] *Construction* is now ranked as a separate industry and *Power Laundries, Custom Grist Mills,* and *Custom Saw Mills* are joined with *Factories* under the title *Manufacturing.*

tries must be considered as nothing but the roughest kind of estimates. It is unfortunate that they involve such a large fraction of the national income, but there seems to be no feasible method of avoiding this weakness.

Inclusion of Income Received from Foreign Sources and Deduction of Income Paid to Foreigners.

A minor adjustment which has been made in order to meet the criticisms of certain reviewers is an estimate of the income received from foreign sources and paid to foreigners by our industries. While it is impossible to obtain adequate data covering these quantities, such evidence as there is indicates that the two items are so small and so nearly equal in size that their net effect on the total income of the country is practically negligible.

The Index Numbers Used as Divisors in Converting Amounts to Dollars of 1913 Purchasing Power.

The necessity of reducing all values to dollars of constant purchasing power was emphasized in the preceding volumes on *Income in the United States*. For the most part this was accomplished by dividing the amounts in current dollars by the index numbers presented in Vol. II, Secs. 2b and 2c of the work just mentioned. The three index numbers there given have been recomputed by using revised weights based upon additional data and, in a few instances, price quotations, discovered since the date of the last publication and apparently more accurate than those formerly utilized, have been substituted. The base remains the average price for the year 1913 and the method of computation has not been changed. Since the prices of goods used by farmers and farm employees have not varied in harmony with city prices, an additional price index has been computed to cover the goods consumed by each of these classes. In this study, one of these five index numbers has been used as the divisor in every case in which income has been reduced to dollars of 1913 value. The weights are shown in Table D.

The index number for urban employees is the "cost of living" index computed by the United States Bureau of Labor Statistics. The others are original with the National Bureau of Economic Research. The "averages for the year" in the four original indexes

TABLE D.—WEIGHTS USED IN CONSTRUCTING INDEX NUMBERS[a]

Item	Weight				
	Families Spending $25,000 Annually	Families Spending $5,000 Annually	Urban Employees	Farmers	Farm Laborers
Automobiles and Repairs	919	738	232	450	900
Automobile Tires	287	230	106	240	480
Books	44	44	37	100	....
Clothing	765	1,200	1,662	....	1,800
College Room and Board	150	150	37	80	....
College Tuition	54	54	7	20	....
Diamonds	400	50	39	....	....
Food	1,332	2,680	3,824	....	....
Fuel and Light	297	359	530	....	....
Furs	300	117	165	....	....
Gasoline	287	230	106	360	720
House Furnishings	408	419	510	....	....
Housing	1,966	1,770	1,344	....	....
Hotel Bills	489	449	113	....	....
Magazines	32	32	28	....	....
Moving Picture Shows	40	110	130	....	600
Newspapers	14	54	124	100	....
Railway Passenger Fares	334	230	38	....	....
Servants' Wages	1,267	502	64	....	....
Street Car Fares	35	90	365	....	....
Telephones	60	76	68	....	....
Theatre Seats	285	116	96	....	....
Tobacco	120	144	279	....	1,000
Vaudeville Seats	45	56	96	....	....
Pianos	70	100	....	....	....
Average for Urban Employees	...	....	....	5,000	....
Food from the Farm	....	....	....	3,650[b]	....
Board and Lodging	....	....	....	....	4,500
Total	10,000	10,000	10,000	10,000	10,000

[a] Manifestly this list of the things quoted does not cover in every case all the articles consumed. A considerable proportion of the 10,000 units have been apportioned, in a more or less arbitrary manner, among the items quoted. For example, each particular article mentioned in the miscellaneous group is made to do service for many others. One must not, then, assume either that the corresponding weights in the different columns represent equal values, or that they show the percentage of the total expenditures going for the particular article named, — in other words, the columns are not comparable. In the case of farm employees, for instance, the quotations that can be used are so few that the loadings given to each item are far heavier than are the assignments in the more complete lists appearing in the first three columns.

[b] Based on farm values of a large number of foodstuffs.

have been computed by weighting the beginning of the year 1, the middle of the year 2, and the end of the year 1, and averaging. The resulting figures are given in Table E.

TABLE E.—INDEX NUMBERS — BASE 1913 = 1.00

Date	Families Spending $25,000 Annually	Families Spending $5,000 Annually	Urban Employees	Farmers	Farm Laborers
1919 Jan. 1	1.442	1.549	1.750	1.789	1.622
1919 July 1	1.497	1.611	1.785	1.800	1.733
1920 Jan. 1	1.654	1.790	2.003	1.988	1.926
1920 July 1	1.779	1.940	2.172	2.115	2.032
1921 Jan. 1	1.745	1.816	1.980	1.787	1.861
1921 July 1	1.655	1.657	1.766	1.457	1.522
1922 Jan. 1	1.611	1.593	1.733	1.528	1.432
Average for Year					
1919	1.522	1.640	1.831	1.845	1.754
1920	1.739	1.872	2.088	2.001	1.963
1921	1.667	1.681	1.799	1.557	1.584

The practice of using indexes of construction costs as divisors for reducing business savings to dollars having purchasing power equal to that of 1913 has been discontinued on two grounds:

1. The concept of national income as an aggregate of individual incomes is adhered to even more closely in the revised figures than in the original computation.
2. Increase in individual wealth has been substituted for business savings in all feasible cases.

Substitution for Business Savings of Changes in the Command Over Consumption Goods Given to Individuals by Variations in their Wealth.

The most important deviation from the method followed in the first income study of the Bureau is the substitution of an estimate of the change taking place in the purchasing power of the national wealth for the former figures supposed to represent the business savings of the various industries. The substitution was made because it is not strictly logical to add corporate income to individual income and also because of a suspicion that the corporate surplus, as reported for years when the price level changed rapidly, had

little more than a semblance of reality. There is grave doubt, for example, whether we are justified in crediting railway stockholders with an income of three billions of dollars because the railways have added to their corporate surplus three billions of dollars taken from earnings. To the stockholder who sees the value of his stock declining at the same time that the value of the corporate surplus is growing, his share in the three billions of dollars is likely to appear strangely unreal.

As a matter of fact, the ordinary stockholder is interested primarily in the value of his own holdings rather than in the accounts of the corporation. It follows, from the standpoint of individual income, that the correct way to attack the problem is to ascertain the changes that have occurred, during the period in question, in the wealth of individuals. This method treats individual income as composed of two parts: 1. *Current income*, and 2. *Gains or losses in the value of property owned.*

Current income, though a somewhat hazy concept, may be defined as the excess of cash receipts over business expenses, plus the money value of income received in the form of commodities. It is estimated here by summating (1) wages, salaries and pensions, (2) profits withdrawn from business, (3) dividends, interest, and rent received by individuals, (4) the rental value of homes occupied by their owners, (5) interest upon the sums invested in household furnishings, clothing, and the like, and (6) the value of commodities which families produce for their own consumption.

For many purposes, current income is a more useful concept than that of total income, which includes gains or losses in the value of property owned. Current income is the better gauge of the scale of living, and hence of apparent immediate prosperity or distress. Except among those mainly engaged in speculative activities, the term "good times" signifies a large current income, and "hard times" is another way of saying that current income is low. Moreover current income is a much more stable quantity than is inventory gain or loss, and, because of the character of the available data, can be measured with greater accuracy.

But there are good reasons for approximating as closely as possible gains or losses in the value of property owned, and for giving these approximations a place in the income account. The case is

most obvious with reference to readily saleable property held for gain, like securities. That such property is subject to continual and wide fluctuations in price, that any holder can and that many holders do shift their holdings from time to time, and that the gains or losses resulting from these transactions may be counted income, is clear. But just how these items are best treated in the income account is a difficult problem.

We know that investors differ widely in the management of their holdings. Some investors keep systematic accounts, watch market quotations, and endeavor to profit by them. Others pay no attention to current fluctuations, but hold securities once bought for long terms of years, and think only of the dividends or interest received. Still others, perhaps the majority, fall between these extremes. But that is the extent of our knowledge. What proportions of the property owned are treated in these various ways we do not know. Hence, it is impossible to devise a method of treating inventory losses and gains on the property of individuals which will reflect accurately the reckoning of all investors.

Under these circumstances, we face the necessity of choosing between two alternatives neither of which is unobjectionable. We must neglect entirely a very substantial source of loss and gain to individuals, or we must adopt some method of treatment which by its very uniformity of application will give artificial-seeming results. On the whole, the latter alternative seems preferable.

The one method which it is feasible to apply uniformly is to suppose that individuals take inventories of their property at the end of every year as do well-conducted business enterprises, and that they credit their incomes with net increases in money value, or debit their incomes with net decreases in money value, whether they sell the property or not. This procedure will give a correct accounting of net changes in the financial position of property holders from year's end to year's end, provided that the statistical data used are valid. Of course, the results must not be interpreted to mean that investors have actually realized in cash the gains or losses shown by such tables, or even that they could all have sold at the inventory prices had everyone tried to realize on the same day. Such tables merely bring out the net gain or loss on the market

value of property owned by individuals, as shown by inventories taken at intervals of one year.

By way of example, consider the following table, which gives estimates of the total inventory values of four great groups of industries at the beginning of the years 1919–22. The estimates were made from the prices of large samples of securities and real estate actually sold near the turn of the year.

TABLE F.—TOTAL NET VALUES OF SELECTED INDUSTRIES AT THE BEGINNING OF THE YEARS 1919–22

In Millions of Dollars

	Railways, Pullman Co., Telephone, and Telegraphs	Mines, Quarries, and Oil Wells	Factories	Agriculture
1919	$16,950	$10,819	$25,793	$72,573
1920	15,212	13,176	25,597	78,802
1921	14,971	10,222	26,587	73,060
1922	15,628	11,771	27,017	60,457

Once figures of this sort had been drawn up for all industries, it would be easy to compute the nominal loss or gain in dollars of current value to the owners as a group. But such figures would not represent the real changes in the economic position of the owners. For example, if the market value of my property rises 5 per cent while other prices rise 10 per cent, my economic position grows weaker. If next year other prices fall 10 per cent and my property falls only 5 per cent, I command larger purchasing power at the end of the year than at the beginning. To see where I really stand, I must take into account the change in my ability to get goods produced by the fluctuations in the prices both of my property and of the things I should buy if I parted with my holdings.

One seeming exception to this rule may be noted to show that the supposed exception does not count for present purposes. Return to the supposition that my property has risen 5 per cent in a year and that other prices have risen 10 per cent. Then if I sell my property at the end of the year to pay a debt, I gain by the 5 per cent rise in its money value; but I transfer the loss in purchasing power to my

creditor. Tables which sum up the position of all property holders as one body cannot show the distribution among individuals of the gains and losses in purchasing power; but they should show whether the aggregate net gains or losses of all property holders mean gains or losses in command over other goods. The way to show this is to divide the inventory values of property owned by individuals at the end of each year by an appropriate index number, and then compute the gains or losses.

What is the most appropriate index number to use? Probably the majority of investors who sell income-bearing property reinvest the proceeds in other income-bearing property. It may seem that, for the present purpose, we should use an index number of security prices, or security prices and real estate. But that conclusion is not valid. If our estimates of the aggregate value of individual holdings were perfect, and if the index numbers of the prices of property were also perfect, the fluctuations of the index would agree precisely with the fluctuations of the aggregate values. Then division of one series by the other would produce the same result in every year; in other words it would tell us nothing about changes in the fortunes of property owners. To each individual investor taken by himself, the most important price fluctuations are usually those of his securities in comparison with other securities. But in the whole body of investors the gains and losses from shifting ownership cancel each other. To show these gains or losses in terms that have significance, we must compare the fluctuations in the money values of securities and real estate with the fluctuations in the prices of some other class of goods, such as labor, or commodities, or labor and commodities taken together.

Among the available index numbers there are at least three which merit consideration for the present use. One is an index number of the prices of consumption goods at retail, made by combining the indexes quoted in a preceding table. The second is the "index of the general price level" compiled by Mr. Carl Snyder, made by combining commodity prices at wholesale, wage payments, retail prices of consumer's goods, and rents. The third is the familiar Bureau of Labor Statistics index of commodity prices at wholesale.

A comparison shows that these three indexes differ consider-

TABLE G.—NATIONAL INCOME IN MILLIONS OF DOLLARS[a]

Industry		Dollars of Given Year						Dollars Having Purchasing Power Equal to That of 1913		
		Income Estimate			Maximum Reasonable Error					
		Current Income	Inventory Gain[b]	Total	Current Income	Inventory Gain[b]	Total	Current Income	Inventory Gain[b]	Total
ALL INDUSTRIES	1919	$67,254	$ − 1,059	$66,196				$37,646	$ − 651	$36,995
	1920	74,158	− 1,778	72,380				36,337	− 1,053	35,284
	1921	62,736	21,691	84,427	$4,000	$9,000	$13,000	36,194	12,814	49,008
Agriculture	1919	12,327	− 1,702	10,626				6,723	− 923	5,800
	1920	10,264	2,475	12,739				5,141	1,235	6,376
	1921	6,622	− 2,027	4,595	1,100	600	1,700	4,277	− 1,317	2,960
Mines, Quarries, and Oil Wells	1919	2,141	503	2,644				1,210	302	1,513
	1920	2,729	− 3,850	− 1,121				1,351	− 2,027	− 676
	1921	1,907	2,583	4,490	280	520	800	1,079	1,507	2,586
Manufacturing	1919	16,508	− 667	15,841				9,349	− 422	8,927
	1920	20,387	− 7,563	12,824				10,080	− 4,189	5,890
	1921	13,732	2,635	16,368	400	1,400	1,800	7,797	1,577	9,375
Construction	1919	1,532	218	1,750				848	133	981
	1920	1,700	41	1,742				835	22	857
	1921	1,371	25	1,396	340	200	540	774	15	789
Transportation	1919	5,772	− 4,791	980				3,268	− 3,024	243
	1920	7,169	− 1,918	5,251				3,538	− 1,062	2,476
	1921	6,135	2,653	8,788	500	600	1,100	3,483	1,581	5,064

Banking	1919	646	336	982				359	213	571
	1920	775	221	996				379	122	502
	1921	848	123	971	80	20	100	477	73	551
Mercantile	1919	8,057	1,239	9,296				4,690	755	5,446
	1920	9,388	− 81	9,307				4,785	− 43	4,742
	1921	8,919	− 322	8,597	1,400	400	1,800	5,144	− 192	4,952
Government	1919	5,930	....	5,930				3,314	....	3,314
	1920	5,008	....	5,008				2,466	....	2,466
	1921	5,270	....	5,270	700	....	700	2,965	....	2,965
Unclassified	1919	6,783	1,659	8,442				3,797	956	4,752
	1920	9,085	858	9,942				4,459	433	4,892
	1921	10,906	206	11,112	1,600	400	2,000	6,147	118	6,266
Misc. Income[c]	1919	7,558	2,147	9,705				4,089	1,359	5,448
	1920	7,653	8,039	15,692				3,303	4,456	7,759
	1921	7,025	15,815	22,840	2,600	6,400	9,000	4,051	9,450	13,501

[a] Figures in which the percentage of error is believed to be large appear in light faced type.

[b] In the fields of construction, merchandising, and unclassified industries and in transportation by water and by street railways it has not been feasible to secure satisfactory inventory figures, hence the estimated changes in value are rough estimates only.

[c] Miscellaneous income includes net income from urban cows, poultry, and gardens, the rental value of owned homes, interest on the value of miscellaneous consumption goods on hand, net income from foreign investments, rent received from urban residence property leased to others, and changes in the value of realty leased to others for residential, mercantile, or miscellaneous purposes. In these three years, the last item is by far the largest. This item is much more inclusive than that entitled "Miscellaneous Incomes" in Tables XXXIX, XL, and XLI.

ably from each other in the years under review. When the estimated values of the property holdings are divided by the different indexes and the gains or losses in command over goods are computed, the results diverge widely. In several cases one index shows a gain while the other two show a loss, or one shows a loss and the other two a gain.

The question, then, as to which index shall be used in correcting the estimates of property values for changes in the price level is one of no little importance. On the whole the first index — that which shows changes in the prices of consumption goods — seems to possess more general significance than its rivals. It has, furthermore, the merit of fluctuating much less widely than the wholesale price index. Accordingly it is employed in Table G.

Final Results.

This table of the National Income gives estimates (1) of current income, (2) of the loss or gain of property holders in the power to purchase consumption goods, and (3) of the sum of these two items. The three sets of estimates are stated both in dollars current in the given year, and in dollars having purchasing power equivalent to that which they possessed in 1913.

The most striking feature of this table is the huge "Inventory Gain" of 1921 — upwards of 22 billion dollars. The chief factor in producing this result was the net increase in the value of securities and real estate between the first and the last day of that year. This increase, reaching some 12 billions according to our figures, is shown in Table H.

The upward trend in the total market value of the foregoing securities is well authenticated. While the extent of the movement in the value of real estate is based upon much less dependable evidence, there are, nevertheless, strong indications that the total rose rather than fell. Hence, it appears that, in these fields, individuals held property having a market worth of more dollars at the close than at the beginning of the year 1921.

But this is only part of the story. Between January 1 and December 31 of that year, the index of prices of goods consumed by the wealthier classes of the population fell from 1.78 to 1.60, or

approximately ten per cent. As a result, it is evident that, if the figures are correct, the value of the above classes of wealth, when measured in its command over consumption goods, increased distinctly more than the 12 billions of dollars arrived at by subtracting

TABLE H.—TYPICAL CHANGES IN PROPERTY VALUES DURING 1921

	Market Value of Property to Combined Individual Owners (Millions of Current Dollars)	
	Jan. 1, 1921	Dec. 31, 1921
Mining Securities		
Funded Debt	$ 800	$1,039
Preferred Stock	420	450
Common Stock	9,003	10,282
Manufacturing Securities		
Funded Debt	4,776	5,498
Preferred Stock	5,127	5,269
Common Stock	16,684	16,250
Railway Securities (Excluding value derived from non-railway property)		
Funded Debt	7,989	8,946
Stocks	5,530	4,771
Real Estate Used for Residential, Mercantile, and Office Purposes	67,150	76,900
Total of Above Items	$117,479	$129,405

the total for January 1 from that for December 31. If the inventory gain was reckoned in terms of command over articles in general, or over all goods at wholesale, an experimental test indicates that the result would be several billions lower than is here shown.

Now the figures showing how much the owners of the just mentioned classes of corporation securities gained or lost each year are based upon a mass of evidence believed to be sufficient to guarantee their approximate validity. It is decidedly otherwise with the estimated changes in the total values of the specified classes of real estate. Variations in this item, as calculated, may be much too large or much too small. Unfortunately, the amounts involved

are so great that it takes but a small percentage of error to run into billions of dollars.

To enable the reader to see at a glance which figures are worthy of confidence and which are to be viewed with suspicion, it has been deemed advisable to record the better grade of figures in black-faced type and also to enter opposite each item a rough guess as to the maximum error likely to be found in the estimate as given. A comparison of the estimated errors in *current* income with the similar figures in the *total* column shows how much the current income estimates outclass in accuracy the total figures. The former estimate for all industries is believed to be less than 5 per cent and perhaps not more than 1 or 2 per cent in error. The latter estimate may possibly contain an error of as much as 13 per cent and an error as large as 7 per cent is not at all unlikely.

This wide difference in the probability of error may account for the striking difference in the movements of the two sets of figures between 1919 and 1921. The figures on current income, when reduced to a basis of constant purchasing power, not only fail to rise in 1921 but show a slight falling off from the level of the two previous years, a result much more in accord with what most of us would expect.

This difference, however, by no means proves that either of the two sets of estimates is widely in error. There is no reason to assume that these fluctuations are similar. One may well rise while the other is falling. We can only say that we are more certain of the movement of current income than of the gain or loss on inventories. The striking difference in the behavior of the two quantities does, however, show how chary one must be of using figures on income without first knowing exactly what kind of income they represent. Unless this precaution is taken, the information is likely to prove grossly misleading.

Changes in property values are significant partly for the reason that they indicate changes in the relative strategic advantages of the classes deriving their incomes respectively from property and from labor. If property values, as measured in 1913 dollars, rise, while the share of employees remains constant, it means that the outlook for future property income has improved during the year. This helps only the property owner who sells part or all of his

holdings during the year — others have only rosy anticipations which may or may not be realized later in the form of higher dividends, interest payments, or rents. Likewise, the record of the comparative changes occurring in the property values in different industries reveals changes in the relative economic power of the owners of the respective industries. For example, if the value of agricultural property rises sharply while the value of manufacturing property falls, the strategic position of the farmer is improved as compared to that of the stockholder in the manufacturing corporation.

However, one must not lose sight of the fact that values fluctuate as frequently because of waves of optimism or pessimism as because of physical changes. Today, stock in a mining corporation may be high and farm land low, but if the stockholder does not take advantage of this situation at once and exchange his stock for land, he has no assurance that, within a year or two the value of his stock will not be halved while the price of the land may have risen, even though the physical characteristics of mine and farm have changed but little.

Because of the influence of psychological factors, it cannot be assumed that fluctuations in the total property value of the nation represent corresponding changes in physical wealth. Except as it is affected by variations in the ratio of total savings made by government to total savings made by individuals, there is, however, every reason to believe that the *trend* of the total values of private property, as measured in dollars of constant purchasing power, does represent the *trend* in the physical stock of wealth on hand, and hence that the *trend* of inventory gains measured in terms of 1913 dollars is equivalent to the *trend* of the savings of the people of the nation. The *cyclical* movements in gains in property values, however, in most cases presumably reflect psychological changes rather than variations in national saving.

Likewise, for the reasons just stated, a year to year comparison of the total income of the nation must not be used to measure changes in the economic welfare of the nation. The trend of the curve showing the total income, as measured in dollars of constant purchasing power, is, however, believed to be practically identical with the trend of production of goods and services; in other words,

the trend of the social income of the nation. The record of *total* income when carried over a period of years long enough to determine the trend furnishes, then, information of great significance.

Owing to the greater degree of precision attained, and to the fact that they can be used for year to year comparisons, the figures on current income will doubtless commend themselves to a wider circle of readers than will those showing total income. Current income represents consumption plus individual saving. Since the saving fraction is relatively small, we may expect current income, when measured in terms of 1913 dollars, to vary in much the same manner as does consumption, but as a rule to run materially above the consumption figures.

The reader should keep the above characteristics of the different kinds of income in mind when he uses the data presented in the following chapters.[1]

WILLFORD I. KING.

[1] DIRECTOR'S COMMENT. — It is difficult to imagine a case in which the total figures, including the "inventory gain," would be useful. Great care should be taken to avoid error or confusion in quoting them. They do not, in my opinion, represent the "national income" in the sense in which it is ordinarily understood and has been used in the past. The figures for "inventory gain" of course do not give any indication of goods and services actually received by property owners. On the other hand, they do not even approximate an accurate index of annual surplus production, in the form of capital goods. "Inventory" cannot be applied to them in the realistic sense in which it is applied by a merchant or manufacturer to stocks of goods on hand, which he expects before long to sell or to use in manufacture. The "inventory" figures in the above total are almost purely hypothetical. They represent gains or losses on the basis of the amounts of consumers' goods which the owners of securities would have received if they had all simultaneously exchanged all their securities for consumers' goods, provided there were enough surplus goods for the purpose, and provided the current market value of securities or of consumers' goods were not altered by the process. The significance of the result is further complicated by the highly speculative character of the market for securities, which is affected by many causes other than present or prospective markets for goods and services.

GEORGE SOULE.

INCOME IN THE VARIOUS STATES

ITS SOURCES AND DISTRIBUTION

1919, 1920, and 1921.

An Apportionment of the National Totals Among the States on the Basis of Numerous Indices

Devised by

MAURICE LEVEN

Assisted by

REBECCA DAVIS

FRANCES NEDERBURG

MARGARET CLARK

DANIEL FITZPATRICK

S. J. ZACKS