

Nonagricultural Income as a

Measure of Domestic

Demand



**NONAGRICULTURAL  
INCOME AS A MEASURE OF  
DOMESTIC DEMAND**



**UNITED STATES  
DEPARTMENT OF AGRICULTURE  
AGRICULTURAL ADJUSTMENT ADMINISTRATION  
WASHINGTON, D. C.**

UNITED STATES DEPARTMENT OF AGRICULTURE  
AGRICULTURAL ADJUSTMENT ADMINISTRATION  
PROGRAM PLANNING DIVISION

AGRICULTURAL-INDUSTRIAL RELATIONS SECTION

NONAGRICULTURAL  
INCOME AS A MEASURE OF  
DOMESTIC DEMAND

PREPARED BY

L. H. BEAN

Economic Adviser to the Agricultural Adjustment Administration

P. H. BOLLINGER

Senior Agricultural Economist  
Agricultural Adjustment Administration

O. V. WELLS

Chief, Production Planning Section  
Program Planning Division  
Agricultural Adjustment Administration

---

ISSUED JUNE 1937



UNITED STATES  
GOVERNMENT PRINTING OFFICE  
WASHINGTON : 1937

## CONTENTS

	Page
WHAT "NONAGRICULTURAL INCOME" MEANS.....	1
I. Review of measures previously used.....	2
Index of monthly money income of industrial workers.....	3
Monthly index of consumer income.....	4
II. New measure of domestic demand.....	5
Differences among component factors of index.....	5
Reliability of monthly indexes, 1919-37.....	8
Nonagricultural income approximates individual incomes of nonfarmers.....	10
NONAGRICULTURAL INCOME.....	11
I. Nonagricultural income, by months, 1929-37.....	13
Monthly estimates of labor income.....	13
Seasonal adjustment of labor income.....	17
Nonagricultural income other than labor income, by months, 1929-37.....	17
Entrepreneurial income.....	17
Property income.....	18
II. Nonagricultural income, by months, 1919-29.....	19
Annual data, 1909-37.....	19
Monthly nonagricultural income estimates, 1919-29.....	21
NATIONAL INCOME, BY MONTHS, 1924-37.....	27
APPENDICES.....	35
Appendix A.—Money income of farmers and industrial workers, and selected retail expenditures.....	35
Appendix B.—Income of urban consumers, 1919-33.....	39

### LIST OF CHARTS

CHART I.—Cotton consumption and industrial production in the United States, by months, adjusted for seasonal variation, 1919-37.....	2
CHART II.—Nonagricultural income and gross income of corporations, by years, 1919-36.....	4
CHART III.—Nonagricultural income, labor income, industrial-worker income, and factory pay rolls, by years, 1919-36.....	6
CHART IV.—Indexes of nonagricultural income and of labor income, by years, 1919-36.....	6
CHART V.—Indexes of nonagricultural income and of retail expenditures for food, by years, 1929-36.....	7
CHART VI.—Nonagricultural labor income and retail expenditures for meats and dairy products, by years, 1919-36.....	8
CHART VII.—Nonagricultural income and department-store sales, by months, adjusted for seasonal variation, 1919-37.....	8
CHART VIII.—Nonagricultural income and retail expenditures (3-month moving average) for meats and dairy products, by months, adjusted for seasonal variation, 1921-37.....	9
CHART IX.—National income, by months, adjusted for seasonal variation, 1919-37.....	10
CHART X.—Urban consumer income and nonagricultural income, by months, adjusted for seasonal variation, 1919-33.....	22

### LIST OF TABLES

TABLE 1.—Nonagricultural income and retail food sales in the United States, by years, 1929-36.....	7
TABLE 2.—National income paid out, excluding and including agriculture, by years, 1929-36.....	12
TABLE 3.—National income, by years, 1909-36.....	20

## LIST OF TABLES—continued

	Page
TABLE 4.—Indexes of urban consumer income and of nonagricultural income, by years, 1919–33.....	22
TABLE 5.—Relation of nonagricultural income to urban consumer income 1919–33.....	23
TABLE 6.—Indexes of urban consumer income and of nonagricultural income, by months, adjusted for seasonal variation, 1919–33.....	24
TABLE 7.—Indexes of nonagricultural income, by months, adjusted for seasonal variation, 1919–37.....	25
TABLE 8.—Nonagricultural income, by months, adjusted for seasonal variation, 1929–37.....	26
TABLE 9.—Agriculture's contribution to national income, by years, 1924–36.....	28
TABLE 10.—Relation between agriculture's contribution to national income and gross farm income, by years, 1924–36.....	29
TABLE 11.—National income, by years, 1924–36.....	30
TABLE 12.—National income, including agriculture, by months, adjusted for seasonal variation, 1924–37.....	32
TABLE 13.—Indexes of national income, including agriculture, by months, adjusted for seasonal variation, 1924–37.....	34

## APPENDIXES

### APPENDIX A: MONEY INCOME OF FARMERS AND INDUSTRIAL WORKERS, AND SELECTED RETAIL EXPENDITURES

(From the Agricultural Situation, February 1933)

In a recent issue of this publication<sup>1</sup> there were presented data on trends in gross farm income and expenditures in which it was shown that the expenditures for such items as fertilizer, feed, farm wages, and machinery were directly dependent upon farm income. In another issue<sup>2</sup> the post-war changes in farm income were discussed in relation to changes in domestic demand and financial conditions and to changes in foreign competition and demand.

In the following article are contained two additional sets of data which deal with (a) the monthly money incomes of certain groups of industrial consumers related to the monthly money income derived from farm marketings and (b) the income of all nonagricultural consumers related to their retail expenditures for selected food items.

The three groups of industrial workers considered in the first set of data (shown in fig. 1) are those attached to the factories, railroads, and construction industries. According to estimates of the National Bureau of Economic Research, wages and salaries of individuals attached to manufacturing establishments in 1928 amounted to about \$14,500,000,000, of those attached to railroads \$3,100,000,000, and of those attached to construction industries \$3,500,000,000. These groups represented about 40 percent of the total of all wages and salaries, amounting in that year to \$52,000,000,000. The current changes in the money income of factory employees are indicated in figure 1 by an index of factory pay rolls published by the Federal Reserve Board. A similar index, computed by the Federal Reserve Board, derived from reports of the Interstate Commerce Commission, shows current changes in railroad pay rolls. For the construction industries there is no current index of workers' incomes, but inasmuch as wages form such a large and fairly stable proportion of the value of contracts awarded, the latter may be used in this connection as representing approximately the current flow of income to consumers attached to the construction industries.

From the showing in figure 1 it appears that by the end of 1932 railroad and factory pay rolls had declined respectively to about 50 percent and 40 percent of their 1923-25 levels, while construction contracts awarded in 37 States averaged only about 25 percent of the 1923-25 level. But the latter, judging from other available data for recent years, apparently overstates the decline in total construction expenditures, which in 1932 was probably about 40 percent of the 1923-25 average.

<sup>1</sup> See "The Agricultural Situation," July 1932.

<sup>2</sup> See "The Agricultural Situation," December 1932.

These three measures of industrial consumer's income when combined<sup>2</sup> (see lower half of fig. 1) show a level of income in the period 1926-29 about 10 percent higher than in 1923 with no marked upward trend during that period. Between 1929 and the end of 1932 there has occurred a decline from about 112 percent to about 40 percent

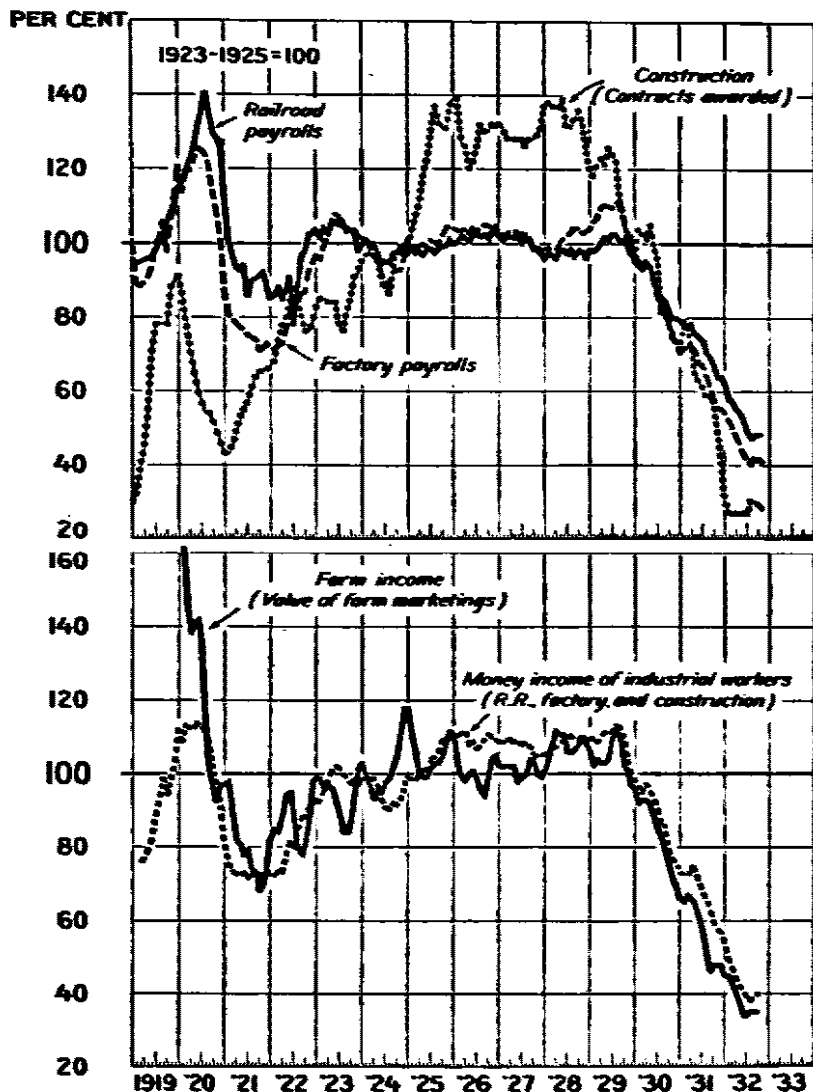


FIGURE 1.—MONEY INCOME OF INDUSTRIAL WORKERS AND FARM INCOME, 1919-32

of the 1923-25 average or a total shrinkage of around 65 percent, as a result of both complete and part-time employment and wage reductions as well. The decline since 1929 has been twice as great as that between 1920 and 1921.

<sup>2</sup> The weights applied to the three indexes. Factory pay rolls 4.8, railroad pay rolls 1.8, contracts awarded 1.8.

The course of these combined industrial incomes bears a striking relation to the course of the money value of farm marketings, particularly from 1921 to date.<sup>4</sup> During the last 3 years the changes in farm income have run parallel to those of industrial wage earners but

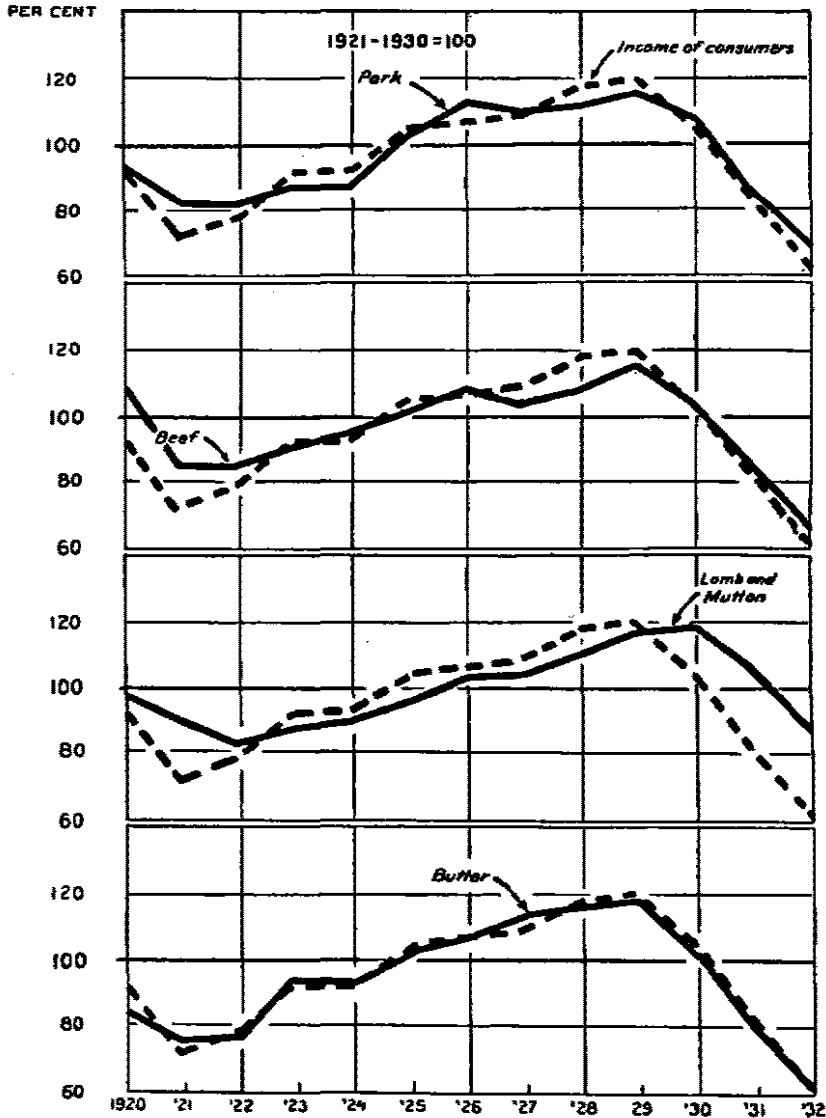


FIGURE 2.—INCOME OF NONAGRICULTURAL CONSUMERS COMPARED WITH RETAIL EXPENDITURES FOR SELECTED FOODS, UNITED STATES 1920-32.

on a somewhat lower level. Some marked differences, however, occurred in former years. Thus in 1920-21 the decline in farm income was an abrupt one, due chiefly to the course of price deflation which

<sup>4</sup> The index of value of farm marketings derived from an index of agricultural marketings and an index of prices received by farmers, both adjusted for seasonal.



exceeded the decline in industrial wages and employment. The irregular variations in farm income during the 1921-23 seasons largely reflected changes in prices of export commodities, particularly wheat. The much sharper rise in farm income in 1924-25 was produced chiefly by a wheat shortage outside the United States and a very active foreign demand for our surplus of wheat.

While it may be inferred from this illustration, with some reason, that agricultural income failed to expand after 1925 because the incomes of these three industrial groups also showed no advance after 1925, it should be borne in mind that employment in other industries and the national income of all nonagricultural consumers continued to expand and that, as pointed out in the July 1932 issue of this publication, farm income from livestock after 1925 continued to mount with the rising national income, while the income from crops affected by depressing influences of increased foreign competition tended downward.

The rather close dependence of farm income from livestock and livestock products, of which relatively little is exported, on the money incomes of domestic nonagricultural consumers is clearly suggested by the close correspondence that existed during the postwar period 1920-32 between an index of the total income of such consumers and estimated total retail expenditures for the country as a whole for four selected items, pork, beef and veal, lamb and mutton, and butter.<sup>5</sup> (See fig. 2.) Between 1921 and 1929 the index of money incomes used in this illustration<sup>6</sup> advanced about 60 percent and between 1929 and 1932 had declined about 50 percent to a level below that of 1921. Expenditures for butter for this 13-year period show practically the same change as those of this index of consumer incomes. The expenditures for the three meats, though corresponding in their changes to those of consumer incomes, show a somewhat smaller rise from 1921 to 1929 and a smaller decline since then, suggesting that as national income rose a somewhat smaller proportion of the consumer's income was spent for meats and a larger proportion for nonfood items—in this period for such items as automobiles, radios, etc.—and that as the national income declined after 1920 and 1929, expenditures for meats declined less than those for less essential commodities. In the case of lamb and mutton, it will be observed, expenditures reached their lowest level in 1922 and their highest in 1930, a year after the corresponding levels in consumer income.

L. H. BEAN,

*Division of Statistical and Historical Research.*

<sup>5</sup> Expenditures for meat as computed by G. B. Thorne and Preston Richards and for butter by E. E. Vial.

<sup>6</sup> This index is based on estimates of the United States Treasury of the total gross income of corporations which in 1921 amounted to \$95,300,000,000, \$158,600,000,000 in 1929, and \$107,000,000,000 in 1931. A further drop to about \$80,000,000,000 or somewhat less is indicated for 1932 by the course of industrial production, prices, and check payments. This series represents a wide variety of disbursements, actual and potential, for wages, materials, dividends, which may be considered in the nature of actual or potential incomes of wage earners, managers, owners, and bond and shareholders. The incomes of certain groups of consumers such as Government employees and professional groups are not, of course, reflected here. These annual gross receipts are much larger than the estimates of national income since the latter attempt to exclude duplications. The course of this income series from 1920 to 1931 corresponds very closely to the estimates of national income of the National Bureau of Economic Research, though in some years fluctuating somewhat more than the estimates of national income because the latter include evaluations of certain forms of income that are relatively stable. For 1921, the national income as estimated by the national bureau was \$63,700,000,000; for 1928, \$88,300,000,000, the latest estimate available. The course of the index in Fig. 2 indicates a national income for 1929 of about \$91,000,000,000; for 1931, \$67,000,000,000; and for 1932 somewhat under \$55,000,000,000.

APPENDIX B: INCOME OF URBAN CONSUMERS, 1919-33

[Prepared by O. V. Wells and L. H. Bean in the Division of Statistical and Historical Research, Bureau of Agricultural Economics, U. S. Department of Agriculture, in October 1933.—Not previously published]

An index or measure of the total volume of the income received and currently spent by urban consumers is often desired in connection with outlook work. At the present time no such index is available although a number of excellent indexes of factory and of other pay rolls are currently published by the Bureau of Labor Statistics and the Federal Reserve Board. A first approximation to such an index, together with an index of the income of industrial workers which may be of equal interest, is presented in figure 1 and table 1. As presented the indexes are to be considered as only approximate, and it is hoped that someone will revise or rework them when the estimates of the national income for the period 1929-33 and the revisions of the estimates for the period through 1928 are completed by the Bureau of Foreign and Domestic Commerce and the National Bureau of Economic Research.

The weights used in combining the several individual indexes given in table 1 into the composite indexes were derived from the estimates of wages and salaries presented by W. I. King in *The National Income and Its Purchasing Power*. Since no data were available for the service group, it was assumed to be equal to the public utilities group. The interest and dividends weight was calculated by taking 35 percent of the net volume of interest and dividends after payments to corporations had been adjusted for.<sup>1</sup> The average annual incomes in millions of dollars of the several groups for the period 1923-25 and the relative percentages were:

		<i>Percent</i>
Factory.....	\$14,205	39.50 rounded to 40.00
Building.....	2,170	6.00 rounded to 7.50
Railroad.....	3,105	8.50 rounded to 7.50
Mining.....	1,635	4.50 rounded to 5.00
Trade.....	5,400	15.00 rounded to 15.00
Service.....	1,245	3.50 rounded to 3.75
Public utility.....	1,245	3.50 rounded to 3.75
Government.....	4,925	13.75 rounded to 12.50
Interest and dividends.....	2,070	5.75 rounded to 5.00

As indicated in the third column, the weights of the several groups were rounded for ease of calculation. Since other data indicated that the weight given to the building group should be increased, the weights of the railroad and the government groups were decreased somewhat and the weight of the building group was increased.

The factory, building, railroad, and mining indexes were combined into an index of the income of industrial workers since they are the

<sup>1</sup> It was estimated that 25 percent of the dividend payments in 1929 went to people whose incomes were \$3,000 or under. Since it was desired to exclude that portion of the interest and dividend payments which are not currently spent for consumption goods, the 35-percent weight was decided upon. See A. A. Berle and G. C. Means, *The Modern Corporation and Private Property*.

Credit for help in collecting data and for clerical assistance is due to Viola E. Culbertson, Margaret Frazier, and Lacy G. Jackson.

sensitive indexes and since they have a different trend than the non-industrial group. For the 1923-25 base period, the industrial index represents an annual income of about \$21,600,000,000. A nonindustrial index may be calculated for any given month or year by subtracting 60 percent of the industrial index from the index of urban consumers' income and multiplying the remainder by 2.5.

The income represented by the index of urban consumers' income for the 1923-25 base period is about \$3,000,000,000 monthly or \$36,000,000,000 annually. The industrial index is given a weight of 60 percent in the construction of the urban income index. Either index may be shifted to any desired base, since they are both of the simple aggregative type. The changes in the index of the income of urban consumers are believed to be reasonable measures of the changes in the current income of approximately 80 percent of the urban workmen whose incomes furnish the great bulk of the domestic purchasing power for food and clothing.

A monthly index of the incomes of urban consumers is presented in table 2, and of the incomes of industrial workers in table 3. Some comparative indexes of urban income, of gross agricultural income, of corporation income, of bank debits to individual accounts, of industrial production and an index of urban population are presented in table 4.

Since the several indexes which were combined into the composite indexes of industrial and urban income were all adjusted to the 1923-25 base and corrected for seasonal variation before the composite indexes were calculated, the indexes of the incomes of industrial workers and urban consumers are also on a 1923-25 base and are automatically corrected for seasonal variation. With the exception of the Government index, all of the data entering into the index of the income of urban consumers is published monthly in *The Survey of Current Business*. A short description of each of the individual indexes used is given below.

**FACTORY.**—The index of factory pay rolls currently compiled and published by the Federal Reserve Board is used to measure the income of factory workers. As published, this index is not corrected for seasonal variation. To correct for seasonal, the factory pay rolls index is divided by the seasonal indexes given in table 5. This seasonal index represents the average seasonal variation in the index from August 1922 through July 1930.

**BUILDING.**—The index of construction contracts awarded, corrected for seasonal variation, as currently published in the *Federal Reserve Bulletin* and the *Survey of Current Business*, is used to measure the income of building workers. To allow for the translation of contracts awarded into payments to workers, the index is lagged 2 months. To adjust the lagged indexes to a 1923-25 base they are multiplied by 1.033. The index is based upon data collected by F. W. Dodge Corp.

**RAILROADS.**—The pay rolls of class I railroads as currently reported by the Interstate Commerce Commission are indexed and used to measure the income of railroad workers. To correct for seasonal, the railroad index is divided by the indexes of seasonal variation given in table 5.

**MINING.**—The index of mining pay rolls is calculated from the indexes of mining pay rolls which are currently compiled and published by the Bureau of Labor Statistics. The index is calculated

by (1) giving a weight of 1.0 to anthracite coal, of 4.0 to bituminous coal, of 1.0 to metalliferous mining, of 1.0 to quarrying and nonmetal mining, and of 1.0 to petroleum to obtain a composite index on a 1929 base, (2) multiplying the composite index by 1.125 to transfer it to a 1923-25 base, and (3) dividing the 1923-25 index by the seasonal indexes given in table 5 to adjust for seasonal variation. The seasonal indexes are average ratio to trend indexes for the 3-year period, 1929-31. The annual indexes from 1919 through 1928 are based upon estimates made by King, and the same proportionate monthly variation was given the index through 1928 as was shown by a composite monthly index of factory, construction, and railroad pay rolls. The annual index for 1929 was estimated from the index of mineral production of the Federal Reserve Board.

**WHOLESALE AND RETAIL TRADE.**—The trade index is calculated from the indexes of wholesale and retail pay rolls currently compiled and published by the Bureau of Labor Statistics. The index is calculated by (1) dividing the retail index by the seasonal indexes given in table 5 to adjust for seasonal variation, (2) combining the two indexes by giving a weight of 2.0 to wholesale trade and 5.0 to retail trade to obtain a composite index on a 1929 base, and (3) multiplying by 1.250 to transfer the composite index to a 1923-25 base. The seasonal indexes for the retail index are average ratio to trend indexes for the period 1929-31. Since the wholesale index is characterized by an almost complete lack of seasonal variation and has almost the same trend as the retail index, it was used as a measure of the trend of the retail index. The annual indexes from 1919 through 1929 were based upon estimates made by King and the extension of a trend, and the same proportionate monthly variation was given the index through 1928 as was shown by a composite monthly index of factory, construction, and railroad pay rolls.

**SERVICE.**—The service index is based upon the indexes of laundry, dyeing and cleaning, and hotel pay rolls currently compiled and published by the Bureau of Labor Statistics. The index is calculated by (1) giving a weight of 2.5 to laundry, of 1.0 to cleaning and dyeing, and of 2.5 to hotels to obtain a composite index on a 1929 base, (2) multiplying the 1929 index by 1.225 to convert to a 1923-25 base, and (3) dividing by the seasonal indexes given in table 5 to adjust for seasonal variation. The seasonal indexes are ratio to trend indexes for the 2-year period, 1931-32. The annual indexes from 1919 through 1929 were based upon the assumptions that employment in the service group increased approximately 50 percent, that earnings per person employed increased somewhat, and that the rate of increase was the same absolute amount for each month.

**PUBLIC UTILITIES.**—The public-utilities index is based upon the indexes of public-utility pay rolls which are currently compiled and published by the Bureau of Labor Statistics. The index is calculated by (1) giving a weight of 2.0 to power, light, and water, of 1.0 to electric railways, and of 2.0 to telephone and telegraph to obtain a composite index on a 1929 base, and (2) multiplying the composite index by 1.300 to transfer it to a 1923-25 base. No seasonal correction is needed. The annual indexes from 1919 through 1929 were based upon estimates made by King and the extension of a trend, and the same proportionate monthly variation was given the index through 1928, as was shown by a composite index of factory, construction, and railroad pay rolls.

**GOVERNMENT.**—The Government index is a composite index representing Federal pensions, army and navy pay rolls, post-office pay rolls, Federal civil-service pay rolls, school-teaching pay rolls, and State and municipal pay rolls. The several annual indexes and the weights used in constructing the general index are given in table 6.<sup>2</sup> The individual indexes are chiefly based upon estimates given by King, upon material presented in the 1934 Budget statement, which was transmitted to the Seventy-second Congress, second session, by the President, and upon the assumption that payments to school teachers declined at a slower rate, and payments to other State and municipal workers declined at a faster rate, from 1929 into 1933 than did payments to workers in the Federal post office and civil service. The annual indexes were so distributed monthly as to be nonseasonal, to give a smooth trend, and to make all changes on quarter dates. The Government index is dropped enough in April 1933 to lower the index of urban consumers' income one-quarter point, and enough in July to lower the general index 1¼ points. The index for the period from July through December is carried at 110.0.

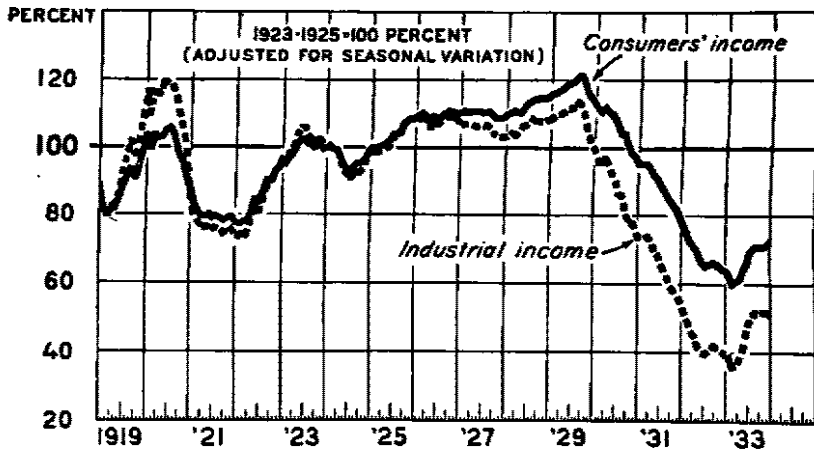


FIGURE 1.—INCOME OF INDUSTRIAL WORKERS AND URBAN CONSUMERS, 1919-33.

**INTEREST AND DIVIDENDS.**—The interest and dividend series which is currently compiled and published by the Journal of Commerce is indexed and used to measure interest and dividend payments. The index is calculated from the interest and dividends data by (1) calculating a 3-month moving average centered on the third month, and (2) dividing by the seasonal bases shown in table 5 to reduce the dollar data to an index on a 1923-25 base and to adjust for seasonal variation. The index represents payments of interest on the Federal debt, of interest on the New York City debt, and of interest and dividends by corporations reporting such payments to several financial papers published in New York City. Since the index was revised and expanded in 1927, the earlier data were multiplied by 1.160 to adjust to the 1927-33 level.

<sup>2</sup> Allowance is made for relief expenditures by the Federal Government in the last quarter of 1933 in tables 1 and 2. As a result, the Government index for 1933 as given in table 1 is somewhat higher than the index as given in table 2, where relief expenditures are excluded.

TABLE 1.—Indexes of income of industrial workers and urban consumers, 1919-33

[1923-25=100]

Year	Consumers' income <sup>1</sup>	Industrial workers' income					Wholesale and retail trade <sup>4</sup>	Service <sup>4</sup>	Public utility <sup>6</sup>	Government <sup>7</sup>	Interest and dividends <sup>8</sup>
		Total <sup>2</sup>	Factory	Building <sup>3</sup>	Railroad	Mining					
1919	87.5	92.0	93.0	55.0	99.5	88.5	84.5	77.5	62.0	107.5	83.0
1920	101.0	113.0	118.0	73.0	127.0	113.0	77.0	82.0	81.0	88.5	82.0
1921	80.5	77.0	77.0	54.5	94.0	85.5	76.5	86.5	83.5	95.0	87.0
1922	84.5	82.0	81.0	78.5	91.0	80.5	81.0	91.0	85.5	95.5	88.5
1923	99.5	102.0	103.5	84.5	103.5	112.0	98.0	95.5	95.0	96.5	93.5
1924	97.0	95.5	95.5	96.0	97.5	92.5	97.5	100.0	99.5	99.5	103.0
1925	103.5	102.5	101.0	119.5	99.0	95.5	104.5	104.5	105.5	104.0	106.5
1926	109.5	108.0	104.5	134.0	101.5	108.0	113.0	109.0	114.0	108.5	114.5
1927	110.0	105.5	102.0	133.5	100.5	101.0	116.5	113.5	119.0	112.5	123.0
1928	112.5	106.0	102.0	139.0	97.5	104.0	121.0	118.0	124.0	117.5	134.0
1929	117.5	109.5	108.0	125.0	100.0	112.5	125.0	122.5	130.0	122.5	168.0
1930	106.5	89.5	87.5	98.5	88.0	94.0	120.0	116.0	129.0	127.0	193.0
1931	90.0	67.5	66.0	70.0	72.5	65.5	107.5	103.0	117.0	129.0	185.5
1932	69.5	44.0	45.5	31.5	52.5	41.0	86.0	79.5	98.0	124.0	158.0
1933	65.8	44.0	47.6	23.2	48.6	40.1	78.9	67.7	84.8	117.5	143.0

<sup>1</sup> Calculated by giving weight of 24.0 to industrial workers' income, of 6.0 to trade, of 1.5 to service industries, of 1.5 to public utilities, of 5.0 to Government, and of 2.0 to interest and dividends. For the base period the average monthly income represented by the index is \$3,000,000,000.

<sup>2</sup> Calculated by giving weight of 16.0 to factory, of 3.0 to building, of 3.0 to railroad, and of 2.0 to mining pay rolls.

<sup>3</sup> Construction contracts lagged 2 months.

<sup>4</sup> Weight of 2.0 given to wholesale trade and of 5.0 to retail trade.

<sup>5</sup> Weight of 2.5 to hotels, of 2.5 to laundries, and of 1.0 to dyeing and cleaning.

<sup>6</sup> Weight of 2.0 to electric railways, of 2.0 to telephone and telegraph, and of 1.0 to power and light.

<sup>7</sup> Composite of Federal pay rolls and pensions, school teaching, and State and city government.

<sup>8</sup> Corporate interest and dividends, interest on Federal debt, and interest on New York City debt.

TABLE 2.—Indexes of income of urban consumers, by months, 1919-33<sup>1</sup>

[1923-25=100]

Year	Jan	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1919	87.0	81.5	80.0	81.0	81.5	84.0	88.5	91.0	93.5	91.0	94.5	98.0	87.5
1920	103.5	100.0	103.5	102.5	103.0	105.0	105.5	104.5	102.5	98.0	95.0	89.5	101.0
1921	87.5	83.0	81.0	78.5	79.5	80.0	78.5	79.5	79.0	78.0	79.0	79.5	80.5
1922	77.5	77.0	78.0	77.5	81.0	84.5	83.5	85.5	90.0	90.0	93.5	94.0	84.5
1923	95.5	95.0	97.5	99.0	101.5	102.5	102.5	101.5	100.5	100.0	101.0	99.5	99.5
1924	100.0	100.5	99.5	99.5	97.0	94.5	93.0	93.5	95.0	95.0	96.0	99.0	97.0
1925	100.0	100.0	100.0	100.5	101.0	102.0	104.0	104.0	104.5	107.5	108.5	108.5	103.5
1926	108.0	109.5	110.0	109.5	107.5	109.0	108.5	109.0	110.0	111.0	110.5	110.0	109.5
1927	110.0	110.5	110.0	110.5	110.5	110.5	110.0	110.5	110.0	109.5	108.5	106.5	110.0
1928	109.5	110.0	110.5	110.0	110.0	112.0	113.0	114.0	114.0	114.5	114.5	114.5	112.5
1929	115.5	116.0	116.5	117.0	118.0	118.5	119.0	120.5	120.5	119.0	115.5	114.5	117.5
1930	113.0	111.5	110.5	111.5	110.0	109.0	107.0	104.0	104.0	100.5	98.5	97.5	108.5
1931	95.0	95.0	95.0	95.0	94.0	92.0	90.5	88.5	87.0	84.5	83.0	81.5	90.0
1932	79.0	78.5	74.5	72.0	70.5	68.5	66.0	65.0	65.5	66.0	63.5	64.5	69.5
1933	64.0	63.0	60.0	60.5	61.5	64.0	65.5	69.0	70.5	70.0	69.5	73.0	68.0

<sup>1</sup> Calculated by giving weight of 24.0 to industrial workers' income, of 6.0 to trade, of 1.5 to service industries, of 1.5 to public utilities, of 5.0 to government and of 2.0 to interest and dividends.

TABLE 3.—Indexes of income of industrial workers, by months, 1919-33<sup>1</sup>

[1923-25=100]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Av.
1919.....	89.0	81.5	80.5	81.5	83.5	86.5	93.5	97.0	101.5	97.5	103.0	108.0	92.0
1920.....	116.5	111.5	116.5	115.5	116.5	119.5	119.0	118.5	115.0	108.5	104.5	97.0	113.0
1921.....	86.5	80.0	78.0	78.5	76.0	75.5	75.0	76.0	75.5	74.0	75.0	75.5	77.0
1922.....	73.5	73.0	74.0	73.5	78.0	82.0	81.0	85.0	88.5	89.0	93.0	94.0	82.0
1923.....	96.5	98.0	99.0	101.0	104.0	105.0	105.0	104.0	102.5	102.0	103.0	101.0	102.0
1924.....	100.0	100.5	99.5	99.0	95.0	93.0	91.0	91.0	93.0	92.5	94.0	98.0	95.5
1925.....	99.0	99.0	98.5	99.0	99.5	100.5	103.5	103.5	104.0	107.0	108.5	108.5	102.5
1926.....	108.5	108.5	109.0	108.5	108.0	107.5	108.5	107.5	108.5	109.0	109.0	108.0	108.0
1927.....	106.5	107.0	107.0	106.5	106.0	106.5	106.0	107.0	106.5	103.5	103.0	103.0	105.5
1928.....	105.5	104.0	104.5	103.5	105.0	106.5	107.0	108.5	107.5	106.0	107.5	108.0	103.0
1929.....	108.0	109.5	109.0	110.0	111.0	111.5	111.5	113.5	113.0	110.0	104.5	101.0	109.5
1930.....	100.0	98.0	95.5	97.0	95.0	93.0	90.0	86.0	85.5	80.5	77.5	75.5	89.5
1931.....	73.5	73.5	73.5	74.0	72.5	69.5	68.0	65.5	63.0	59.5	56.0	56.5	67.5
1932.....	64.5	51.0	49.0	46.0	44.0	41.5	40.0	39.5	40.5	41.5	41.0	40.5	44.0
1933.....	39.5	39.0	35.5	36.0	38.0	41.5	43.5	50.5	51.5	50.5	50.0	50.5	44.0

<sup>1</sup> Calculated by giving weight of 18.0 to factory, of 3.0 to building, of 3.0 to railroad, and of 2.0 to mining pay rolls.

TABLE 4.—Selected indexes of income, bank debts, industrial production, and urban population, 1919-32

[1923-25=100]

Year	Consumers' income	National income <sup>1</sup>		Corporation income <sup>2</sup>	Bank debts <sup>3</sup>	Industrial production <sup>4</sup>	Urban population <sup>5</sup>
		Urban	Agricultural				
1919.....	87.5	73.9	147.9	.....	91.7	83.0	89.4
1920.....	101.0	91.1	118.5	85.6	104.2	87.0	91.2
1921.....	80.5	82.1	78.0	74.9	82.3	67.0	93.2
1922.....	84.5	84.4	86.8	81.0	85.3	85.0	85.1
1923.....	99.5	95.4	96.4	95.5	96.4	101.0	97.8
1924.....	97.0	99.2	99.0	96.1	96.4	95.0	100.1
1925.....	103.5	105.4	104.5	106.4	107.2	104.0	102.1
1926.....	109.5	109.7	100.3	111.0	110.9	108.0	104.5
1927.....	110.0	114.0	101.4	112.6	114.6	106.0	107.2
1928.....	112.5	115.4	102.5	122.6	121.0	111.0	109.3
1929.....	117.5	119.8	104.1	124.7	130.1	119.0	111.3
1930.....	106.5	106.3	82.2	106.8	112.3	96.0	113.5
1931.....	90.0	90.6	80.4	84.1	90.0	81.0	114.5
1932.....	66.5	71.4	44.9	62.9	65.4	64.0	114.7

<sup>1</sup> National Bureau of Economic Research and Department of Agriculture. Gross agricultural income is subtracted from the national income to obtain an estimate of urban income.

<sup>2</sup> U. S. Treasury Department.

<sup>3</sup> Harvard Economic Society. Index is for bank debts to individual accounts in cities other than New York City.

<sup>4</sup> Federal Reserve Board.

<sup>5</sup> Farm population on Jan. 1 is subtracted from total population on Jan. 1 to obtain an estimate of urban population.

Base weight for consumers' income is \$38,000,000,000, for urban portion of national income is \$66,350,000,000, for agricultural portion is \$11,450,000,000, for corporation income is \$127,165,000,000, for bank debts is \$35,600,000,000, and for urban population is 81,235,000 people.

TABLE 5.—Selected indexes of seasonal variation

Month	Factory pay rolls	Railroad pay rolls	Mining pay rolls	Retail pay rolls	Service pay rolls	Interest and dividends <sup>1</sup>
January.....	98.5	98.4	101.0	100.0	98.0	422.5
February.....	101.5	92.8	106.0	97.0	99.0	415.0
March.....	103.5	99.9	98.0	96.0	100.0	397.5
April.....	102.0	98.0	94.0	99.0	101.0	332.5
May.....	101.5	100.5	98.0	99.0	101.0	349.0
June.....	99.5	99.7	85.0	99.0	101.0	367.5
July.....	95.5	101.7	89.0	96.0	101.0	405.0
August.....	98.5	103.6	94.0	94.0	101.0	390.0
September.....	99.5	101.1	101.0	98.0	101.0	355.0
October.....	102.5	106.4	119.0	101.0	100.0	329.0
November.....	99.5	99.3	107.0	104.0	99.0	337.5
December.....	100.0	98.6	109.0	117.0	98.0	367.5
Total.....	1,200.0	1,200.0	1,200.0	1,200.0	1,200.0	4,480.0

<sup>1</sup> Volume of payments in millions of dollars per month. Index to be applied to a 3-month moving average of monthly data centered on third month.

TABLE 6.—Indexes of Government pensions and pay rolls, 1919-33

[1923-25=100]

Year	All government	Federal Government				State and municipal	
		Pensions	Army-Navy	Post Office	Other	School	Other
1919.....	107.5	85.0	550.0	67.5	145.0	55.0	60.0
1920.....	98.5	105.0	155.0	80.0	140.0	70.0	70.0
1921.....	95.0	117.5	140.0	85.0	117.5	82.5	82.5
1922.....	95.5	117.5	117.5	90.0	100.0	90.0	87.5
1923.....	96.5	102.5	97.5	92.5	100.0	95.0	95.0
1924.....	99.5	97.5	100.0	100.0	100.0	100.0	100.0
1925.....	104.0	100.0	102.5	107.5	190.0	105.0	105.0
1926.....	108.5	105.0	105.0	112.5	102.5	110.0	110.0
1927.....	112.5	110.0	105.0	115.0	105.0	115.0	115.0
1928.....	117.5	112.5	107.5	120.0	110.0	117.5	122.5
1929.....	122.5	115.0	110.0	125.0	120.0	120.0	130.0
1930.....	127.0	122.5	107.5	127.5	130.0	122.5	135.0
1931.....	129.0	135.0	105.0	127.5	135.0	129.0	137.5
1932.....	124.0	187.5	102.5	120.0	130.0	117.5	127.5
1933.....	115.5	122.5	95.0	110.0	120.0	115.0	117.5

Based upon estimates by W. I. King, upon Federal expenditures and appropriations for the Veterans' Bureau, for the Marine Corps and finance sections of the Navy Department, for the Quartermaster Section of the War Department, for the Post Office Department, and for "personal services" in other departments, and upon data from the Census of Occupations and the Statistical Abstract of the United States. The "all government" index is calculated by giving a weight of 6.0 to the pensions index, of 3.5 to the Army-Navy, of 4.5 to the Post Office, of 4.5 to the other Federal, of 12.5 to the school, and of 18.0 to the other municipal index.