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## National Income, 1929-1932

SIMON KUZNETS

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The present *Bulletin* contains revisions of the estimates published in *Bulletin 49*, released on January 26, 1934, and presents the final results of a study made by the Department of Commerce in cooperation with the National Bureau of Economic Research. The study was undertaken in response to a request for national income estimates for 1929-31 by the United States Senate and the findings are given in detail in Senate Document No. 124, 73rd Congress, 2nd Session, entitled *National Income, 1929-32*. The study was planned and supervised by Dr. Simon Kuznets, who was assisted by Miss Lillian Epstein and Miss Elizabeth Jenks of the National Bureau of Economic Research, and by Messrs. Robert F. Martin and Robert R. Nathan of the United States Department of Commerce.

### INTRODUCTION

THE ECONOMIC changes that occurred in this country during recent years are sufficiently striking to be apparent to any observer without the assistance of statistical measurements. There is considerable value, however, in checking the unarmed observation of even a careful student by the light of a quantitative picture of our economy. How extensive was the contraction in the volume of economic activity, year by year, from the peak attained in 1929? What was the impact of the current depression upon the various industrial branches of the economic system, and upon the various factors of production? These questions cannot be answered fully, even with the most skillful utilization of the available data: in spite of the apparent plethora of statistics, there are marked gaps in information concerning important areas in the national economy. But attempts at an all-inclusive statistical picture can be made. National income measurements represent such an attempt to describe the total activity of the national economy under one aspect, *viz.*, the size of the final net product.

The estimates below portray, first of all, changes in the total net product of the economic system, year by year, from 1929 to 1932. They also attempt to show the breakdown of these totals, by types of payment, and by industrial source. Such measurement of national income, in total and by parts, throws considerable light on the congeries of eco-

nomical changes that occurred in this country during recent years. But before the estimates can be understood fully, it is necessary to become familiar with the definitions and classifications used in preparing them.

### INCOME PAID OUT AND INCOME PRODUCED

Year in, year out the people of this country, assisted by the stock of goods in their possession, render a vast volume of services towards the satisfaction of their wants. Each of these services involves an effort on the part of an individual and an expenditure of some portion of the country's stock of goods. Some of these services eventuate in commodities, such as coal, steel, clothing, furniture, automobiles; others take the form of direct, personal services, such as are rendered by physicians, lawyers, government officials, domestic servants, and the like. If all the commodities produced and all the direct services rendered during the year are added at their market value, and from the resulting total we subtract the value of that part of the nation's stock of goods that was expended (both as raw materials and as capital equipment) in producing this total, then the remainder constitutes the net product of the national economy during the year. It is referred to as national income produced, and may be defined briefly as that part of the economy's end product that results from the efforts of the individuals who comprise a nation.

In return for these efforts, the individuals receive some payment, either in money or in kind. If such money re-

ceipts and the money equivalents of the receipts in kind are added, the resulting total constitutes national income paid out or received.<sup>1</sup> This latter would equal national income produced, in total and in parts, only if every distinguishable group of services rendered were paid for at the money value that the results of these services fetch in the market. This condition, however, rarely materializes. A manufacturing corporation whose net product (gross product minus the cost of materials and allowance for use of durable equipment) amounts to \$1,000,000 may pay out only \$900,000 in wages, salaries, rents and royalties, dividends and interest, and retain \$100,000 as net corporate savings or, on the contrary (as happened in 1930 and later years), it may pay out in the forms listed above a sum in excess of its net product, thus sustaining a net loss. Similarly, a proprietor of an unincorporated establishment, for example, a retail store, may withdraw, as his income, an amount larger or smaller than his net product, thus incurring a net loss or saving. In general, the difference between national income produced and national income paid out is that the former does, and the latter does not, include net savings or losses by business establishments.

In the estimates presented below, an attempt is made to measure both national income produced and national income paid out.

#### THE CLASSIFICATION OF NATIONAL INCOME

Two types of income classification have been carried through: by types of payment of income paid out, and by industrial sources of income paid out and produced. These two classifications are presented below and should be referred to for better understanding of the estimates contained in this *Bulletin*.

#### A. Classification by Types of Payment

##### I. Labor Incomes

1. Wages (money and money value of food, board, and other perquisites and gratuities)
2. Salaries (same as 1, including also commissions)
3. Other Labor Income
  - a. Compensation for injury (paid to employees)
  - b. Pensions

<sup>1</sup> In the case of most payments, for example, wages and salaries, income paid out measures the flow of money or goods to individuals directly. But in the case of interest and dividends, especially the former, we had to measure under income paid out not only payments made directly to individuals as such, but also receipts of interest and dividends by savings organizations, which may be treated as associations of individuals for the purpose of better management of their property incomes. Among such associations are life insurance companies, foundations, savings banks and savings departments of commercial banks, building and loan associations. The volume of property income received by these organizations in 1929 may be estimated as running between 2.5 and 3.0 billion dollars.

##### II. Property Incomes<sup>2</sup> (paid to individuals)

4. Interest
5. Dividends

##### III. Entrepreneurial Incomes

6. Withdrawals by Individual Entrepreneurs
7. Business Savings or Losses
  - a. Individual entrepreneurs
  - b. Corporations

Items (1) through (6) make up national income paid out; by adding item (7) we obtain national income produced.

#### B. Classification by Industrial Sources

##### I. Agriculture

1. Total

##### II. Mines, Quarries and Oil Wells

2. Bituminous Coal
3. Anthracite Coal
4. Metalliferous Mines
5. Oil Wells and Natural Gas
6. Quarrying and Non-metallic Mines

##### III. Electric Light and Power and Manufactured Gas

7. Electric Light and Power
8. Manufactured Gas

##### IV. Manufacturing Industries

9. Foods, Beverages and Tobacco
10. Textiles and Leather
11. Paper, Printing and Publishing
12. Chemicals and Petroleum Refining
13. Construction Materials and Furniture
14. Metals and Machinery
15. Miscellaneous Manufacturing

##### V. Construction

16. Total

##### VI. Transportation

17. Railroads (including Pullman and express)
18. Water Transportation
19. Street Railways
20. Motor Transportation
21. Other Transportation

##### VII. Communication

22. Telegraphs
23. Telephones

##### VIII. Distributive Trades

24. Wholesale Trade
25. Retail Trade

<sup>2</sup> Net rents and royalties, usually classified as a type of property income, were defined by us as an income from the industry of real estate inclusive of individual holdings. Since in most instances the receipt of rents and royalties is connected with the obligation of managing the property in question, a great deal is to be said for classifying them not as a functional income type, but as entrepreneurial income originating in a specific industrial field.

- IX. Finance
  - 26. Banking
  - 27. Insurance
  - 28. Real Estate, inclusive of Individual Holdings
- X. Government
  - 29. Federal
  - 30. State and County
  - 31. Municipal
- XI. Service
  - 32. Amusement and Recreation
  - 33. Professional Service
  - 34. Personal Service
  - 35. Domestic Service
  - 36. Business Service
  - 37. Miscellaneous Service
- XII. 38. Miscellaneous

## NATIONAL INCOME, 1929-1932

Estimates of the total national income of this country for the years 1929 to 1932 are presented in Table 1. The movement of the totals exhibits clearly the striking effect of the present depression. The volume of net income paid out to individuals shrank by 40 per cent during this three-year period. The longest series of authoritative annual estimates of national income for this country, that by Dr. Willford I. King, who carried them back to 1909, shows only one decline in the volume of realized income.<sup>a</sup> This de-

cline, from 1920 to 1921, amounted to a drop of 14.4 per cent from the peak, as against the shrinkage of 40 per cent shown in the present depression.

Savings by unincorporated business establishments and corporations which, in 1929, amounted to about 2.0 billion dollars, have, in the years following, turned into losses which, by 1932, rose to the total of 9.5 billion dollars.<sup>4</sup> It must be noted that the measurement of business savings and losses is conditioned by the accounting practices of the country's business establishments. These practices, in an attempt to provide a conservative basis for business policy, may give rise to a picture of income changes that will appear distorted to an observer using criteria other than those set by the business world itself. Thus, the prevalent rule of valuing inventories at cost or market, whichever lower, may, in a period of rapidly declining prices, serve to reduce the net savings or increase the net losses of enterprises, although for logical consistency with our measurement for periods of rising prices it might be advisable to value inventories on a cost basis only. Similarly, the prevailing practice of straight-line depreciation based on the original cost of fixed assets may mean, in a period of declining prices, not merely capital preservation but actual capital accumulation by the enterprise.

Another element of uncertainty in the measurement of business savings is due to the inability of estimating accurately the volume of actual withdrawals by individual entrepreneurs, as distinct from the net profits or losses sustained in their business. Thus, in the case of agriculture, withdrawals by farm operators were assumed to equal the wage allowance for operators and family labor, there being no direct information on withdrawals made by farm operators for their living expenses; and in other industries entrepreneurial withdrawals were usually estimated on the basis of a salary allowance. The error in our estimate of business savings that can result from such crude approximations may possibly be of considerable magnitude. Thus, the volume of business savings in agriculture for 1929 is estimated at 1.2 billion dollars, accounting for about 60 per cent of the total business savings for that year. If agriculture (the most important industrial source of business savings or losses sustained by individual entrepreneurs) Care must be taken not to confuse the terms savings and losses used here with the common notion of business profits and losses. By our definition, an enterprise saves when it pays out in wages, salaries, interest, dividends, and other types of income received by individuals, an amount smaller than the margin between its gross intake from industrial operations and the cost of goods (including in the latter all business costs not appearing in the estimates as income streams). On the other hand, an enterprise sustains a loss when the volume of its payments to various income recipients, including its owners, is greater than its gross margin. The usual notion of business profit and loss defines them as the residual share before and not after payment of dividends and entrepreneurial withdrawals.

Table 1

## NATIONAL INCOME, PAID OUT AND PRODUCED

	Millions of Dollars			
	1929	1930	1931	1932
Income paid out .....	81,136	75,410	63,247	48,894
Business savings .....	1,896	-5,065	-8,604	-9,529
Income produced .....	83,032	70,345	54,643	39,365
	Percentages of 1929			
	1929	1930	1931	1932
Income paid out .....	100.0	92.9	78.0	60.3
Income produced .....	100.0	84.7	65.8	47.4
U. S. B. of L. S. cost of living index .....	100.0	97.4	88.9	80.4
U. S. B. of L. S. wholesale price index .....	100.0	90.7	76.6	63.0

<sup>a</sup> Realized income, as defined by Dr. King, includes, besides income paid out, income imputed to possessors of durable goods. This imputed income amounted, in 1927, to 4.8 billion dollars. See *The National Income and Its Purchasing Power* (National Bureau of Economic Research, 1930), p. 379. The estimates presented in this *Bulletin* should not be treated as a direct continuation of the series published in that book; nor should the estimates for 1929 given in Table 1 be compared with Dr. King's estimates for earlier years. The present figures utilize the data in the Census of 1929 and much additional information not available to Dr. King at the time his study was made. The National Bureau of Economic Research is at present engaged in revising Dr. King's series back to 1909. When this revision is completed, a continuous series of comparable measurements from 1909 through 1932 will be available.

neurs) is omitted, the total business savings in 1929 amount to 700 million dollars, and total business losses in 1932 to 8.3 billion dollars.

These are only some of the reasons why care should be taken in interpreting the estimates of business savings and losses as an element in the measurement of national income produced. On the other hand, it must be remembered that these savings or losses are in themselves a highly important factor in shaping policies in the business economy. Granted that under such conditions as characterized the past few years, net losses of enterprises may have been exaggerated by accounting practices, yet the effect of such losses upon the activities of the entrepreneurial class can hardly be overestimated. A large business loss in an economy so dependent upon the stimulus of the profit incentive is both a symptom of and a factor in the gravity of the present depression.

If the estimates of national income produced are accepted with all the qualifications that attach to its measurement, the totals show a decline considerably greater than that in national income paid out, the contraction from 1929 to 1932 being 53 and 40 per cent, respectively. This disparity suggests at first the inference that the direct flow of net income to individuals was sustained through a draft by the business enterprises upon their capital and surplus. But this appears to be a misleading description of the situation. The business losses may have resulted from a failure of certain costs, besides those constituting direct income payments to individuals, to decline as greatly as did the volume of business. A partial confirmation of this interpretation may be found in the accounts of corporations reported in *Statistics of Income*. The combined items of bad debts and depreciation and depletion amounted to 5.4 billion dollars in each of the three years, 1929, 1930, and 1931, while gross sales plus gross profits from operations other than those tabulated as gross sales declined from 147 billion dollars in 1929 to 123 billion in 1930 and 97 billion in 1931, a total decline of about 33 per cent. These figures refer to corporations only and do not cover agriculture or unincorporated trade and construction, all of which show considerable business losses in recent years. It thus appears reasonable to suggest that a considerable part of the business losses incurred in 1931 and 1932 may be imputed not to the sustention of income payments to individuals but to the coverage of other, rather rigid costs.

The estimates presented in Table 1 exclude a number of items that have been considered by other investigators as parts of national income. Of these one of the most important is imputed net rental, that is, income accruing to people living in their own homes. For 1930, such net rentals are estimated at about 2.7 billion dollars (if we allow for owned homes a gross rental equal to the average

rental for leased homes, and a ratio of net to gross rentals of 66.7 per cent); and even this large total does not include imputed rent on owned farm homes. But there is some doubt as to the propriety of including this item, since the ownership of a home does not in itself constitute participation by the proprietor in the economic activity of the nation in the same recognized fashion as does his work for wages, profit or salary, or his capital investment in industry. For similar reasons, such an item as interest on durable goods owned has also been omitted. This last item was estimated by Dr. King at about 3 billion dollars in 1927.<sup>5</sup>

The contraction of national income after 1929 was due, at least in part, to a decline in the price level, and an adjustment for price changes is obviously in order. But such an attempt to measure national income paid out or produced in dollar volume at constant prices cannot be made in a satisfactory fashion. Net income paid out to individuals, in so far as it is an approximation to income consumed, should be adjusted for changes in the cost of living. But the best available index of the cost of living, that of the Bureau of Labor Statistics, refers only to urban wage earners, and is perhaps unsatisfactory even for those, its weights being based on a survey taken fifteen years ago. For other economic groups, with the exception of farmers, current data on the cost of living are absent. Net income produced might be adjusted best by an all-inclusive price index, covering both commodities and services, at wholesale and at retail. But no such all-inclusive, authoritative index is available.

If, nevertheless, some approximate notion of the movement in the national income total adjusted for price changes is desired, the contraction in income paid out may be compared with the decline shown by the Bureau of Labor Statistics' index of the cost of living. This comparison sug-

<sup>5</sup> See *The National Income and Its Purchasing Power* (National Bureau of Economic Research, 1930), p. 379.

Another item of some interest is that of relief expenditures. Recent estimates of relief expenditures set them at 85 million dollars in 1929, 150 million in 1930, 300 million in 1931 and 500 million in 1932. (Charles E. Persons, *Calculation of Relief Expenditures, Proceedings of the American Statistical Association*, March, 1933, p. 71.) The special report by the Department of Commerce on *Relief Expenditures by Governmental and Private Organizations, 1929 and 1931*, indicates that in cities of over 30,000 the percentage of government expenditures on relief to total expenditures on relief was about 60 in the first quarter of 1929 and 1931. If this percentage is true for the country as a whole for 1932, it would appear that government relief expenditures in 1932 amounted to about 300 million dollars. If such expenditures were covered from taxation of business establishments (rather than from taxation of individuals), this volume should be considered as flowing indirectly from the business system through the government into the hands of individuals. But the allocation of these funds to their specific origin is a rather arbitrary task.

Table 2  
NATIONAL INCOME PAID OUT, BY TYPES OF PAYMENT<sup>1</sup>

	Millions of Dollars				Percentages of 1929			
	1929	1930	1931	1932	1929	1930	1931	1932
Salaries (selected industries) <sup>2</sup> .....	5,702	5,661	4,738	3,383	100.0	99.3	83.1	59.3
Wages (same as in line 1) <sup>2</sup> .....	17,179	14,210	10,542	6,840	100.0	82.7	61.4	39.8
Salaries or wages (all other industries) .....	29,052	27,794	24,622	20,302	100.0	95.7	84.8	69.9
Total labor income <sup>3</sup> .....	52,793	48,582	40,896	31,533	100.0	92.0	77.5	59.7
Dividends .....	5,964	5,795	4,313	2,588	100.0	97.2	72.3	43.4
Interest .....	5,677	5,815	5,649	5,491	100.0	102.4	99.5	96.7
Total property income <sup>4</sup> .....	12,206	12,226	10,498	8,472	100.0	100.2	86.0	69.4
Net rents and royalties .....	4,116	3,475	2,752	1,865	100.0	84.4	66.9	45.3
Entrepreneurial withdrawals .....	12,020	11,127	9,102	7,024	100.0	92.6	75.7	58.4
Total entrepreneurial income .....	16,136	14,602	11,853	8,890	100.0	90.5	73.5	55.1
Total income paid out .....	81,136	75,410	63,247	48,894	100.0	92.9	78.0	60.3

<sup>1</sup> The grand totals in this and the following tables are obtained by an addition of the totals for each industrial field. The income subtotals by industrial fields are primarily in thousands of dollars, while the subtotals of gainfully engaged are usually in actual numbers. But the subtotals entered in Tables 2 to 10 are either in millions of dollars (for income) or in thousands of persons (for numbers engaged). These subtotals do not, therefore, add up exactly to the grand totals given.

<sup>2</sup> Includes mining, manufacturing, construction, steam railroads, Pullman, railway express, and water transportation.

<sup>3</sup> Includes also employees' pensions and compensation for injury.

<sup>4</sup> Includes also net balance of international flow of property incomes.

gests that the purchasing power of net income paid out declined slightly in 1930; that by 1931 the decline from 1929 was in the neighborhood of 10 per cent of the 1929 level; and that by 1932 the contraction in purchasing power of income paid out may have amounted to 25 per cent of the 1929 volume. A similar comparison can be made of national income produced and the Bureau of Labor Statistics' index of wholesale prices. The latter index probably shows a larger decline from 1929 to 1932 than a more inclusive price index is likely to show. The comparison suggests that the volume of income produced, at a constant price level, must have declined in 1930 by about 6 per cent from the 1929 level; by 1931 the decline may have been from 15 to 20 per cent and by 1932 from 30 to 40 per cent.

#### DISTRIBUTION BY TYPES OF PAYMENT

Table 2 presents the national income paid out in the form of wages, salaries, dividends, interest, etc. Net rents and royalties paid to individuals are included in our general classification in entrepreneurial withdrawals. But for the benefit of those students who are inclined to define them as property income, the estimates in question are segregated in Tables 2 and 3.

When the large functional divisions of national income are considered, a significant difference appears between property incomes on the one hand, and labor and entrepreneurial incomes on the other. Thus, total labor income declined from 1929 to 1932 by 40 per cent, total entrepreneurial income by 45 per cent, but property incomes have held up in comparison, with a decline from 1929 to 1932 of only 30 per cent. It is obvious that payments to property holders formed a relatively increasing cost to the economic system as a whole.

Within labor income itself, there is a significant differ-

ence in movement between salaries and wages. For those basic industries for which the distinction between these two types of labor income could be made, total salaries showed a decline of 41 per cent between 1929 and 1932, while total wages declined by 60 per cent. It is also to be noted that the substantial decline in salaries began in 1931, while the decline in wages was already marked in 1930. The cumulative burden of the depression was thus much greater for the wage-earning group than for the salary earners. A similar difference in movement between wages and salaries may be expected in other branches where a clear distinction between the two labor groups exists.

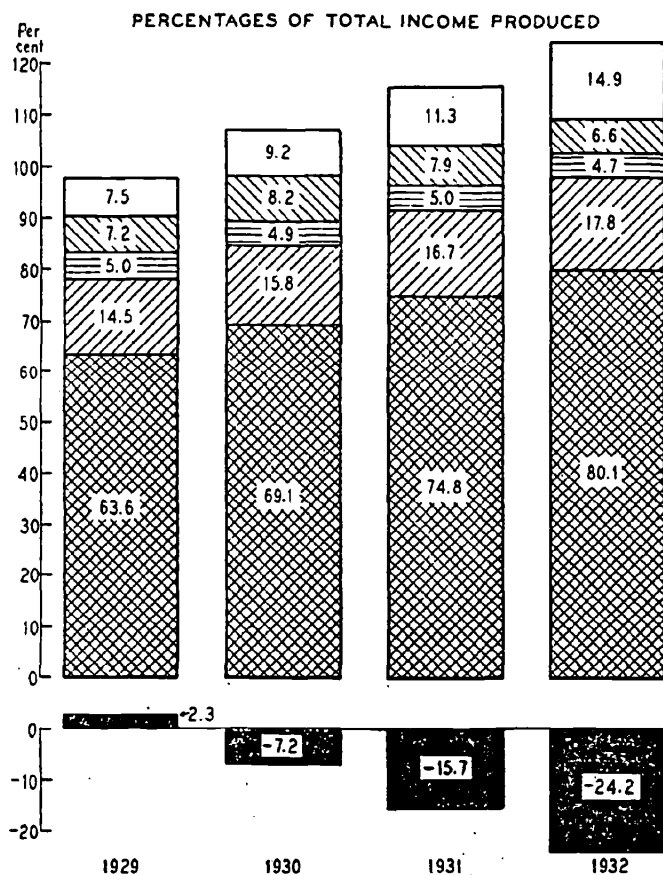
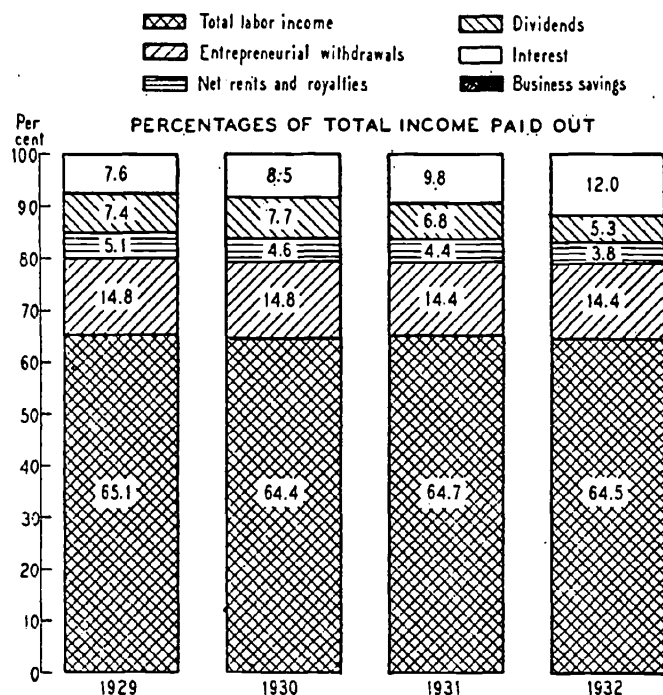
No less significant is the difference in movement that characterizes the two types of property income. Interest payments increased in 1930, and showed but an insignificant decline by 1932. This indicated stability of interest flow may have been exaggerated by an insufficient allowance in the estimates for defaults in some industries, but hardly to an extent to affect the totals considerably. Dividends declined only slightly in 1930, thus lagging in movement behind wages, but were cut drastically in 1931 and especially in 1932. The resistance of interest payments to contraction served, however, to hold up the total property income to a level in 1932 which, as compared with 1929, was higher than that of any other functional income type.

In the case of entrepreneurial incomes (the least reliable group of estimates) there is also an interesting difference in movement between net rents and royalties and withdrawals by entrepreneurs, the former showing a much more marked drop than the latter. The fact that entrepreneurial withdrawals declined even more than did labor incomes is not surprising if it is remembered that the largest

single group of entrepreneurs are the farmers, who suffered very heavily in the depression; and that another large

group represents construction, an industry in which contraction has been most severe.

Chart 1  
PERCENTAGE DISTRIBUTION OF NATIONAL INCOME BY TYPES OF PAYMENT



The relative weight of the various types of income in the total paid out and produced is shown clearly in the percentage distribution in Table 3 and Chart 1. The share of labor incomes in the total paid out was, on the whole, fairly constant, with the rise in the proportion of salaries probably offset by the decline in the share of wages. The percentage constituted by property income rose from 1929 to 1932, this rise being accounted for largely by interest payments on fixed debt. The total share of entrepreneurial incomes declined, primarily because of the drop in the relative proportion of rents and royalties. If net rents and royalties are added to property income, the decline in absolute volumes from 1929 to 1932 would amount to 36 per cent, not to 30 per cent; but the share of property incomes in the total paid out would still show a slight rise between 1929 and 1932.

When payments of various types are treated as shares of total income produced, the percentages show a marked rise from 1929 to 1932, reflecting the growing extent of paying incomes out of capital. The share of labor incomes in the total produced rose from 64 per cent in 1929 to 80 per cent in 1932; the relative increase in the share of property incomes was still greater, the percentages being 15 in 1929 and 22 in 1932. Total income paid out mounted from 98 per cent of income produced in 1929 to 124 per cent in 1932; and only rents and royalties appeared to have declined during the period as markedly as did the total income produced.

National income paid out formed an income stream flowing for the most part directly to individuals. But only in the case of employees and entrepreneurs can we estimate without duplication the number of individuals who participated in the process of income creation and who received the income paid out. These estimates are presented in Table 4.

Here again salary and wage earners can be segregated for only a few basic industries; and in these the employment of salary earners appears to have been reduced less than that of wage earners. For all employees the decline from the peak of 1929 in numbers employed amounted, by 1932, to about 30 per cent. The estimates of the number of entrepreneurs engaged are much less reliable. The very concept of employment or active participation is not quite clear in the case of individual entrepreneurs. And for lack of available data, we had to assume, in some industrial groups, a constant number of entrepreneurs for the years after 1930. The slight decline shown in the number of individual entrepreneurs is thus only a minimum indication of the contraction in their number which would be shown if the definition of active participation could be applied more thoroughly.

Table 3  
PERCENTAGE DISTRIBUTION OF NATIONAL INCOME, BY TYPES OF PAYMENT

	<i>Percentages of Total Income Paid Out</i>				<i>Percentages of Total Income Produced</i>			
	1929	1930	1931	1932	1929	1930	1931	1932
Salaries (selected industries) <sup>1</sup> .....	7.0	7.5	7.5	6.9	6.9	8.0	8.7	8.6
Wages (same as in line 1) <sup>1</sup> .....	21.2	18.8	16.7	14.0	20.7	20.2	19.3	17.4
Salaries or wages (all other industries) .....	35.8	36.9	38.9	41.5	35.0	39.5	45.1	51.6
Total labor income <sup>2</sup> .....	65.1	64.4	64.7	64.5	63.6	69.1	74.8	80.1
Dividends .....	7.4	7.7	6.8	5.3	7.2	8.2	7.9	6.6
Interest .....	7.0	7.7	8.9	11.2	6.8	8.3	10.3	13.9
Total property income <sup>3</sup> .....	15.0	16.2	16.6	17.3	14.7	17.4	19.2	21.5
Net rents and royalties .....	5.1	4.6	4.4	3.8	5.0	4.9	5.0	4.7
Entrepreneurial withdrawals .....	14.8	14.8	14.4	14.4	14.5	15.8	16.7	17.8
Total entrepreneurial income .....	19.9	19.4	18.7	18.2	19.4	20.8	21.7	22.6
Total income paid out .....	100.0	100.0	100.0	100.0	97.7	107.2	115.7	124.2
Business savings .....					2.3	-7.2	-15.7	-24.2
Total income produced .....					100.0	100.0	100.0	100.0

<sup>1</sup> Includes mining, manufacturing, construction, steam railroads, Pullman, railway express, and water transportation.

<sup>2</sup> Includes also employees' pensions and compensation for injury.

<sup>3</sup> Includes also net balance of international flow of property incomes.

The totals in Table 4 afford some measure of the extent of unemployment resulting from the present depression. The estimate of 41.8 million gainfully engaged in 1930 should be compared with the total of 47.1 million gainful workers shown by the Census of Occupations as of April 1, 1930.<sup>6</sup> These totals do not include farm family labor. The number of unemployed in 1930 may thus be estimated as amounting to 5.3 million; in 1931 to 9.0 million; and in 1932 to 13.0 million. These estimates take no account of the number of new employables in 1931 and 1932 who may have to be added to the number of gainful workers in 1930 and thus to the total of unemployed in 1931 and 1932. If this annual addition of new employables be estimated at 703,000 (the annual increment

<sup>6</sup> Gainful workers, in the usage of the Census of Occupations, include all persons who usually follow a gainful occupation, although they may not have been employed when the census was taken. Gainfully engaged are the workers employed and entrepreneurs actively participating in any industrial activity. In estimating the number of gainfully engaged we reduced, wherever possible, the number of partially employed to an equivalent number of fully employed.

in gainfully occupied from 1920 to 1930, the totals in the two years having been corrected for farm family labor), the estimated number of unemployed in 1931 rises to 9.7 million, and in 1932 to 14.4 million. On the same basis, the estimated number of unemployed in 1929 would be 2.2 million. There was thus almost a sevenfold increase in the volume of unemployment during the three years of the current depression.

Labor incomes, the totals of which are presented in Table 2, were thus paid out to a greatly shrunken army of active participants in the economic activities of the nation. It is important to observe the movement in income paid out, when reduced to a per employee basis. The results are presented in Table 5.

The decline in the average income of employees has also been substantial, so that even those who remained on the payrolls contributed to their individual or family expenses a smaller volume of money. But this drop in average income was not any greater than the decline in the cost of living. The comparison with the Bureau of Labor Statistics' index suggests that the purchasing power

Table 4  
NUMBER OF PEOPLE ENGAGED<sup>1</sup>

	<i>Number in Thousands</i>				<i>Percentages of 1929</i>			
	1929	1930	1931	1932	1929	1930	1931	1932
Salaried employees (selected industries) <sup>2</sup> .....	2,221	2,187	1,915	1,556	100.0	98.4	86.2	70.0
Wage earners (same industries as in line 1) <sup>2</sup> .....	12,219	10,677	8,890	7,131	100.0	87.4	72.8	58.4
Salaried employees or wage earners (all other industries) .....	20,765	20,057	18,544	16,767	100.0	96.6	89.3	80.7
All employees .....	35,205	32,921	29,349	25,453	100.0	93.5	83.4	72.3
Entrepreneurs .....	9,020	8,889	8,704	8,677	100.0	98.5	96.5	96.2
All gainfully employed .....	44,225	41,809	38,053	34,131	100.0	94.5	86.0	77.2

<sup>1</sup> In this table, and all subsequent tables relating to number of people employed or engaged, the annual estimates are averages for the calendar year. The numbers represent in some industries a full-time equivalent.

<sup>2</sup> Includes mining, manufacturing, construction, steam railroads, Pullman, railway express, and water transportation.



Table 5  
PER CAPITA INCOME OF EMPLOYEES AND THE COST OF LIVING

	Per Capita Income in Dollars				Percentages of 1929			
	1929	1930	1931	1932	1929	1930	1931	1932
Salaried employees (selected industries) <sup>1</sup> .....	2,567	2,589	2,474	2,175	100.0	100.9	96.4	84.7
Wage earners (same industries as in line 1) <sup>1</sup> .....	1,406	1,331	1,186	959	100.0	94.7	84.4	68.2
Salaried employees or wage earners (all other industries) .....	1,399	1,386	1,328	1,211	100.0	99.1	94.9	86.6
All employees .....	1,475	1,448	1,360	1,199	100.0	98.2	92.2	81.3
Bureau of Labor Statistics cost of living index .....	.....	.....	.....	.....	100.0	97.4	88.9	80.4

<sup>1</sup> Includes mining, manufacturing, construction, steam railroads, Pullman, railway express, and water transportation.

of the average compensation was the same in 1930 as in 1929; and that there was even a slight gain in the purchasing power of the average compensation in 1931 which, however, shrank somewhat in 1932. It must be remembered, however, that the per capita incomes presented in Table 5 refer largely to earners employed full-time; and should not be interpreted as an average payment made to each earner on the payroll.

Moreover, in the few basic industrial divisions where salaries and wages could be distinguished, the decline in the average wage was much more drastic than that in the average salary. In these industries the purchasing power of the average wage declined in 1930 and 1931, and strikingly in 1932. One is led to infer that in other industries that suffered from the depression the average wage payment was cut more than the average salary. The depression seems to have placed its greatest burden upon those who, in view of their already low position in the economic scale, could least afford to bear it.

#### DISTRIBUTION BY INDUSTRIAL SOURCES

Knowledge of the general features of economic depressions leads one to expect that various industrial divisions suffered unequally in the drastic contraction that characterized the period covered by the present estimates. Some industries, sheltered from the pressure of changing conditions, have continued to give employment and pay

cut only moderately changed volumes of income to labor and capital engaged in them. Others, more exposed to adverse changes in competitive markets and supplying services easily dispensed with in bad times, have shown shrinkages in employment and income greatly in excess of the average for the economic system as a whole.

The differential movement in total employment, inclusive of the entrepreneurs attached, in various industrial divisions is given in Table 6. The industrial classification in this *Bulletin* distinguishes only the twelve broad divisions.

The greatest reduction in the number of people engaged occurred in three basic branches: construction, mining and manufacturing, especially in the first. The great decline in the demand for housing, industrial construction, and durable goods in general must have been responsible for the particular severity with which the depression affected these three branches. If a similar decline in the number of people engaged did not occur in agriculture, it was due to the different organization of this industry, with the large number of small independent entrepreneurs and the impossibility of shifting the burden to any considerable extent on to the employees in the industry. On the other hand, two groups escaped the effects of the depression, as far as employment is concerned. In the field of government service, the readjustment was delayed, due to

Table 6  
NUMBER OF PEOPLE ENGAGED, BY INDUSTRIAL DIVISIONS

	Number in Thousands				Percentages of 1929			
	1929	1930	1931	1932	1929	1930	1931	1932
Agriculture .....	7,592	7,511	7,448	7,288	100.0	98.9	98.1	96.0
Mining .....	1,068	980	819	644	100.0	91.7	76.6	60.3
Electric light and power and gas .....	336	344	322	283	100.0	102.3	95.7	84.0
Manufacturing .....	10,023	8,860	7,566	6,257	100.0	88.4	75.5	62.4
Construction .....	1,528	1,378	1,054	673	100.0	90.2	69.0	44.1
Transportation .....	3,073	2,846	2,493	2,140	100.0	92.6	81.1	69.6
Communication .....	533	520	449	402	100.0	97.5	84.2	75.5
Trade .....	7,163	6,785	6,177	5,619	100.0	94.7	86.2	78.4
Finance .....	1,422	1,388	1,275	1,135	100.0	97.6	89.7	79.8
Government .....	3,003	3,156	3,127	3,122	100.0	105.1	104.1	104.0
Service .....	5,535	5,276	4,810	4,283	100.0	95.3	86.8	77.3
Miscellaneous .....	2,948	2,766	2,515	2,285	100.0	93.8	85.3	77.5
Total .....	44,225	41,809	38,053	34,131	100.0	94.5	86.0	77.2

Table 7  
INCOME PAID OUT, BY INDUSTRIAL DIVISIONS

	Millions of Dollars				Percentages of 1929			
	1929	1930	1931	1932	1929	1930	1931	1932
Agriculture .....	6,361	5,720	4,517	3,459	100.0	89.9	71.0	54.4
Mining .....	2,123	1,779	1,278	837	100.0	83.8	60.2	39.4
Electric light and power and gas .....	1,306	1,503	1,461	1,216	100.0	115.1	111.9	93.1
Manufacturing .....	18,157	16,141	12,490	8,373	100.0	88.9	68.8	46.1
Construction .....	3,135	2,825	1,897	864	100.0	90.1	60.5	27.6
Transportation .....	6,660	6,202	5,236	4,020	100.0	93.1	78.6	60.4
Communication .....	912	943	887	797	100.0	103.4	97.3	87.4
Trade .....	11,238	10,424	9,103	7,326	100.0	92.8	81.0	65.2
Finance .....	10,054	9,265	8,006	6,183	100.0	92.1	79.6	61.5
Government .....	6,456	6,763	6,792	6,796	100.0	104.8	105.2	105.3
Service .....	8,479	7,968	6,731	5,273	100.0	94.0	79.4	62.2
Miscellaneous .....	6,255	5,877	4,850	3,750	100.0	94.0	77.5	60.0
Total .....	81,136	75,410	63,247	48,894	100.0	92.9	78.0	60.3

the general slowness of the government mechanism in adapting itself to changes in the business system proper; and, of course, it may be questioned whether government activity should be curtailed rather than extended during a business depression. In electric light and power and gas, employment declined but little, owing to the fact that the growth in the use of electric energy largely offset the effect of the depression. Moreover, the rigidity of the industry's rate structure and the consequent stability of its

operating revenues served to prevent a drastic contraction in income and employment.

The distribution of income by the industrial divisions from which it originated offers little difficulty in the case of labor and entrepreneurial incomes. But in the case of interest and dividends, the existence of intercorporate holdings of securities, the prevalence of integrated corporations deriving income from more than one industrial field, and the difficulty of reconciling the industrial classifications of the corporate data in *Statistics of Income* with that in the industrial censuses, create difficulties in the allocation by industrial sources that can be disposed of only partially. In using the estimates submitted in Tables 7 to 9 it must therefore be remembered that for a part of the totals involved, the industrial classification could not be carried through in a clear-cut fashion.

Tables 7, 8 and 9, and Chart 2, which show income paid out, business savings and losses, and income produced, by industrial divisions, confirm the impression of the differences in movement already suggested in connection with the estimates of number of people engaged. The greatest shrinkage in income paid out occurred in construction,

Chart 2  
PERCENTAGE DISTRIBUTION OF INCOME PAID OUT BY INDUSTRIAL DIVISIONS

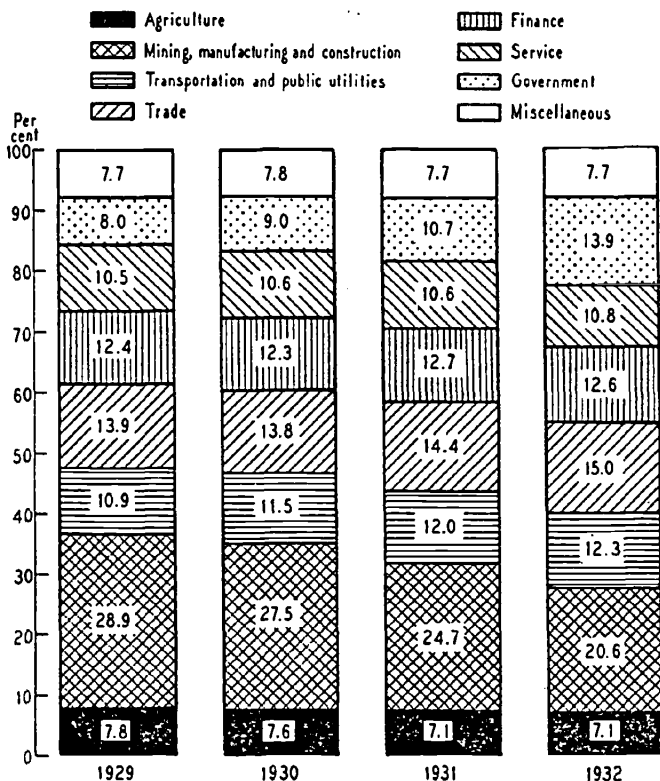


Table 8  
BUSINESS SAVINGS OR LOSSES, BY INDUSTRIAL DIVISIONS

	Millions of Dollars			
	1929	1930	1931	1932
Agriculture .....	1,177	-100	-651	-1,227
Mining .....	-247	-464	-546	-310
Electric light and power and gas .....	-17	-278	-283	-258
Manufacturing .....	1,197	-1,850	-2,813	-2,501
Construction .....	-48	-181	-229	-410
Transportation .....	360	-121	-368	-436
Communication .....	107	44	10	-57
Trade .....	115	-939	-1,737	-1,918
Finance .....	-421	-617	-1,394	-1,569
Service .....	-26	-142	-209	-460
Miscellaneous .....	-302	-417	-383	-383
Total .....	1,896	-5,065	-8,604	-9,529

Table 9  
INCOME PRODUCED, BY INDUSTRIAL DIVISIONS

	Millions of Dollars				Percentages of 1929			
	1929	1930	1931	1932	1929	1930	1931	1932
Agriculture .....	7,538	5,620	3,866	2,232	100.0	74.6	51.3	29.6
Mining .....	1,876	1,315	732	527	100.0	70.1	39.0	28.1
Electric light and power and gas .....	1,289	1,225	1,178	958	100.0	95.0	91.4	74.3
Manufacturing .....	19,354	14,292	9,677	5,873	100.0	73.8	50.0	30.3
Construction .....	3,087	2,644	1,667	454	100.0	85.6	54.0	14.7
Transportation .....	7,020	6,082	4,868	3,583	100.0	86.6	69.4	51.0
Communication .....	1,019	987	897	740	100.0	97.1	88.5	73.2
Trade .....	11,353	9,484	7,366	5,408	100.0	83.5	64.9	47.6
Finance .....	9,633	8,648	6,612	4,614	100.0	89.8	68.6	47.9
Government .....	6,456	6,763	6,792	6,796	100.0	104.8	105.2	105.3
Service .....	8,453	7,826	6,522	4,813	100.0	92.6	77.1	56.9
Miscellaneous .....	5,953	5,460	4,467	3,367	100.0	91.7	75.0	56.6
Total .....	83,032	70,345	54,643	39,365	100.0	84.7	65.8	47.4

mining, manufacturing and agriculture. The volume of income payments by government again shows no effect of the depression. And in the case of electric light and power and gas, and communication, net income paid out suffered but a comparatively moderate decline from 1929 to 1932.

Business savings and losses could not be established for the government, since its whole system of accounting is such that, within the scope of the present study, to segregate properly its capital expenditures from its current expenditures was impossible. Consequently, one could not treat the excess of government expenditures over revenues as a reliable indication of losses sustained and covered from the extension of the government debt. With this division omitted, the difference in the movement of business savings or losses, shown in Table 8, confirms the distinctions made above. The only exception is the considerable size of business losses sustained in the electric light and power and gas group, and the relatively small size of the same losses in the field of construction. This exception may be due in part to the large size of capital investment in the former industries, and the small size in the latter.

Net income produced, shown by industrial divisions in Table 9, reflects most strikingly, and probably in a somewhat exaggerated form, the full effect of the depression on the dollar volume of income. In agriculture, mining and manufacturing, the decline from 1929 to 1932 was almost 75 per cent and in construction over 85 per cent. The decline in transportation, trade and finance (the latter inclusive of net rents and royalties) approximated 50 per cent of the 1929 level. And only in electric light and power and gas, and in communication, was the shrinkage limited to about 25 per cent of the 1929 level. Finally, in income paid to individuals by government agencies, no decline appears at all.

#### SUMMARY. RELIABILITY OF ESTIMATES

Further details concerning the movement of national income by industrial divisions and types of payment appear in Table 10, and a complete account of the study is given in Senate Document No. 124. But some broad conclusions appear in the summary tables presented in this *Bulletin*. The consistent intensification of the depression through 1932; the striking increase in business losses, when computed after payment of dividends; the delay in the decline of the movement of salaries and dividend payments, and the apparently slight effect on interest payments on fixed debt; the shift in favor of property incomes, and among labor incomes, in favor of salaries; the comparative resistance to contraction of income paid out by government and non-transportation public utilities, and the marked depth of the depression in construction, mining, agriculture and manufacturing—all these are important elements in an attempt to understand the exact nature of the changes that have occurred in our national economy since 1929.

A few words must be said concerning the reliability of these estimates. A complete gauge of their reliability can be obtained only from the detailed account of the sources and methods used, which is included in the report submitted to the Senate (see Appendix A, of the report, pp. 161-213). All known sources were utilized, and a great deal of information not accessible to the general public was made available for this study. In some fields, notably service, data were obtained by the questionnaire method.

For some of the constituent parts of the total the available data are abundant and reliable; for others, both direct and indirect information is quite scanty and the resulting estimates are subject to a wide margin of error. It is important to note the areas of the national economy in which, for lack of precise data, formidable difficulties were encountered:

1. For the fields of construction, water transportation and motor transportation, trade, almost all of finance, service, and even for government proper, data are on the whole scanty. And, of course, the miscellaneous field is, by its very nature, a confession of the limitations that the data impose on the national income estimator.

Table 10  
NUMBER OF PEOPLE ENGAGED AND NATIONAL INCOME, BY INDUSTRIAL DIVISIONS  
AND TYPES OF PAYMENT

	Millions of Dollars												
	All in- dustries	Agricul- ture	Mining	Electric light and power and gas	Manufac- turing	Con- struc- tion	Trans- porta- tion	Com- muni- cation	Trade	Finance	Government	Service	Miscel- laneous
1929													
Entrepreneurs—thousands	9,020	5,565	14	.....	133	168	169	.....	1,601	.....	.....	677	692
Employees—thousands	35,205	2,027	1,054	336	9,890	1,360	2,905	533	5,562	1,422	3,003	4,858	2,255
Total—thousands	44,225	7,592	1,068	336	10,023	1,528	3,073	533	7,163	1,422	3,003	5,535	2,948
Labor income	52,793	1,313	1,639	531	14,984	2,620	4,970	713	8,209	3,246	4,984	5,932	3,652
Entrepreneurial income	16,136	4,519	70	.....	381	436	299	.....	2,402	4,116	.....	2,345	1,568
Dividends	5,964	20	365	413	2,577	62	740	155	566	775	.....	104	187
Interest on long-term debt	5,677	509	48	363	215	17	650	44	61	1,917	1,472	98	283
Total property income	12,206 <sup>1</sup>	529	414	775	2,792	79	1,390	199	626	2,692	1,472	202	1,035 <sup>1</sup>
Entrepreneurs' savings	974	1,177	-33	.....	-21	-68	-1	.....	103	-186	.....	3	.....
Corporations' savings	920	.....	-215	-17	1,218	20	361	107	12	-235	.....	-29	-302
Total income produced	83,032	7,538	1,876	1,289	19,354	3,087	7,020	1,019	11,353	9,633	6,456	8,453	5,953
1930													
Entrepreneurs—thousands	8,859	5,621	14	.....	108	168	174	.....	1,435	.....	.....	680	689
Employees—thousands	32,921	1,890	966	344	8,752	1,210	2,672	520	5,350	1,388	3,156	4,596	2,077
Total—thousands	41,809	7,511	980	344	8,860	1,378	2,846	520	6,785	1,388	3,156	5,276	2,766
Labor income	48,582	1,112	1,413	550	12,969	2,291	4,521	722	7,687	3,167	5,280	5,524	3,345
Entrepreneurial income	14,602	4,096	73	.....	305	433	313	.....	2,181	3,475	.....	2,235	1,489
Dividends	5,795	13	249	565	2,617	85	693	182	497	665	.....	103	127
Interest on long-term debt	5,815	499	44	388	250	17	675	39	58	1,958	1,483	106	299
Total property income	12,226 <sup>1</sup>	512	293	953	2,867	101	1,368	221	555	2,623	1,483	209	1,042 <sup>1</sup>
Entrepreneurs' savings	-1,153	-100	-127	.....	-164	-164	-17	.....	-338	-208	.....	-35	.....
Corporations' savings	-3,912	.....	-337	-278	-1,685	-17	-103	44	-601	-409	.....	-108	-417
Total income produced	70,345	5,620	1,315	1,225	14,292	2,644	6,082	987	9,484	8,648	6,763	7,826	5,460
1931													
Entrepreneurs—thousands	8,704	5,700	14	.....	92	168	173	.....	1,213	.....	.....	662	682
Employees—thousands	29,349	1,748	804	322	7,474	886	2,320	449	4,964	1,275	3,127	4,148	1,833
Total—thousands	38,053	7,448	819	322	7,566	1,054	2,493	449	6,177	1,275	3,127	4,810	2,515
Labor income	40,896	807	1,024	515	10,113	1,535	3,788	649	6,837	2,798	5,352	4,700	2,778
Entrepreneurial income	11,853	3,218	69	.....	251	308	295	.....	1,817	2,752	.....	1,868	1,275
Dividends	4,313	17	138	506	1,896	40	475	200	386	594	.....	71	-10
Interest on long-term debt	5,649	475	46	440	230	14	678	38	63	1,863	1,439	92	270
Total property income	10,498 <sup>1</sup>	492	184	946	2,127	53	1,153	238	449	2,457	1,439	162	797 <sup>1</sup>
Entrepreneurs' savings	-2,790	-651	-165	.....	-206	-176	-23	.....	-851	-613	.....	-105	.....
Corporations' savings	-5,814	.....	-381	-283	-2,607	-53	-345	10	-885	-780	.....	-104	-383
Total income produced	54,643	3,866	732	1,178	9,677	1,667	4,868	897	7,366	6,612	6,792	6,522	4,467
1932													
Entrepreneurs—thousands	8,677	5,804	14	.....	65	168	161	.....	1,130	.....	.....	656	680
Employees—thousands	25,453	1,484	630	283	6,192	505	1,979	402	4,489	1,135	3,122	3,628	1,605
Total—thousands	34,131	7,288	644	283	6,257	673	2,140	402	5,619	1,135	3,122	4,283	2,285
Labor income	31,533	523	677	384	6,961	689	2,867	542	5,597	2,223	5,277	3,713	2,079
Entrepreneurial income	8,890	2,460	47	.....	157	160	240	.....	1,512	1,865	.....	1,428	1,021
Dividends	2,588	17	72	383	1,048	4	240	201	163	421	.....	53	-14
Interest on long-term debt	5,491	459	41	450	208	11	672	53	54	1,674	1,520	80	270
Total property income	8,472 <sup>1</sup>	476	113	832	1,255	14	912	254	218	2,094	1,520	133	650 <sup>1</sup>
Entrepreneurs' savings	-3,708	-1,227	-47	.....	-219	-314	+32	.....	-997	-705	.....	-167	.....
Corporations' savings	-5,821	.....	-262	-258	-2,282	-96	-404	-57	-921	-865	.....	-294	-383
Total income produced	39,365	2,232	527	958	5,873	454	3,583	740	5,408	4,614	6,796	4,813	3,367

<sup>1</sup> Includes net interest and dividends from abroad amounting to \$565 million in 1929, \$616 million in 1930, \$536 million in 1931, and \$393 million in 1932.

2. Even for those industrial fields for which data were fairly abundant, there was difficulty in measuring property income for groups identical with those for labor incomes. This was due to the fact that the industrial classification of *Statistics of Income* (the richest source of data on property incomes) is necessarily quite different from the classifications of our industrial data.

3. There was general paucity of data on entrepreneurial incomes, and the estimates relating to this type of income are the ones most subject to doubt.

4. The estimates for 1932, especially those for property incomes, are preliminary in character and may be revised when final data for 1932 become available.

The national income total is thus an amalgam of relatively accurate and only approximate estimates rather than a unique, highly precise measurement. In view of the approximate character of the national income figures small differences or changes should not be taken as unequivocal indications that differences actually exist or that changes have actually occurred.

Since we continue to receive orders for BULLETIN 49, which is out of print, and many persons wish to start their subscriptions to the BULLETIN with this number we are issuing a revised edition. The alterations are minor but additional figures are included and we are therefore sending this edition to all subscribers.

Dr. Kuznets is directing the revision of the National Bureau's estimates of national income from 1909 to date, which will probably be published next year. His next BULLETIN will contain preliminary results of his study of *Durable Goods and Capital Formation*, which will also, we expect, appear as one of the National Bureau publication series in 1935. Of Dr. Kuznets' last volume, *SEASONAL VARIATIONS IN INDUSTRY AND TRADE* (published by the National Bureau in 1933, \$4), the AMERICAN ECONOMIC REVIEW says: "This is, undoubtedly, the most thorough work that has ever been presented on the subject of seasonal variation."

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CARL T. SCHMIDT

Research Associate, National Bureau of Economic Research, 1931-1932

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## REVIEWS

STRATEGIC FACTORS IN BUSINESS CYCLES, by John Maurice Clark; 238 pp., \$1.50.

*New York Times*, Sunday Book Review, February 18, 1934: "The present study is an admirable example of profound analysis and probing logic. It also constitutes a typical specimen of the viewpoint advanced by the younger school of American realistic economists, who insist upon a social and practical orientation of economic theory. The work impresses by its happy mingling of inductive research with deductive speculation."

Harry Elmer Barnes in the *World-Telegram*, April 7, 1934: "The long and profound depression in which we still flounder has stimulated interest in the study of the business cycle. But most works on this subject have adopted a sort of fatalistic attitude and have implied that nothing could be done about it. Professor Clark takes a different point of view.

While accepting the reality of the business cycle, he contends that certain factors in our business life can be controlled in such a fashion as to help stabilize business and lessen the disastrous results which accompany the periodic oscillations of prosperity and misery."

PRODUCTION TRENDS IN THE UNITED STATES SINCE 1870, by Arthur F. Burns; 363 pp., \$3.50.

Harry Elmer Barnes in the *World-Telegram*, April 7, 1934: "Mr. Burns has prepared a highly scientific and accurate study of the growth of economic production in the United States since the Civil War. He comes to the conclusion that there has been no evident decline in the rate of growth in the total physical production of this country since 1870. Individualistic capitalism has thus kept up production, but it has made no comparable effort to insure a parallel growth in the purchasing power of consumers."