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## National Income, 1919-1935

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SIMON KUZNETS

This *Bulletin* presents comparable annual measures of the national income of the United States for the seventeen years from 1919 to 1935. They constitute a complete revision of the estimates for 1919-27 in W. I. King's *The National Income and Its Purchasing Power* (National Bureau of Economic Research, 1930) and a continuance of this series through 1929 and later years. For the period since 1929 these measures are based upon the estimates originally prepared by the Department of Commerce in cooperation with the National Bureau for 1929 through 1932 and subsequently revised and amplified by the Department; but they have again been revised and modified to assure comparability with earlier years and to take advantage of more recent data.

The measures released in this *Bulletin* for circulation among the subscribers embody Dr. Kuznets' broad findings. Somewhat more detailed figures and supporting data, together with materials on the flow of commodities and the formation of capital, will be published in a monograph by Dr. Kuznets, *National Income and Capital Formation, 1919-1935*, now in press. The complete record of the national income study will appear in a later volume.

Throughout this study, Dr. Kuznets was assisted by Lillian Epstein and Elizabeth Jenks; and during recent months also by Edna Ehrenberg. We are indebted to the Department of Commerce for permission to consult the details of its estimates of national income for recent years.

### 1. DEFINITIONS AND SCOPE

National income may be defined as the net value of commodities and services produced by the nation's economic system. It is 'net' in that the value of output of all commodities and services is reduced by the value of commodities (fuel, raw materials and fixed equipment) consumed in the process of production. And it refers, by design, to the net product of the economic system, which, for the advanced nations during recent decades, may be identified with the market economy; provided 'market' is understood broadly as the meeting-place of all buyers and sellers, no matter how much the freedom of transactions may be curbed by custom or regulation.

National income is thus that part of the national product which is largely imputable to individuals who contribute to production either their labor or the services of their property. In return for this participation these individuals receive compensation, which accounts for the preponderant share of national income produced in any given year. But there may be two other elements in national income. First, the producing enterprises may make payments not only to individuals who, in a given year, participate in the productive process, but also to individuals who participated in it in the past or have not participated at all. Pensions, compensation for injuries, relief payments; and charity

contributions by business enterprises are channels through which income produced in a given year may be paid to individuals other than those sharing in the process of producing it. Second, enterprises may distribute to individuals amounts not necessarily equal to the part of national income that these enterprises produce. In some years a business firm or other producing enterprise may pay out to individuals an amount smaller than its share in national income, thus retaining what we designate as positive savings of enterprises. In other years an enterprise may distribute to individuals an amount larger than its own share in the national total, thus giving rise to negative savings of enterprises. If we designate all receipts by individuals from the producing enterprises as income payments to individuals, national income is equal to the algebraic sum of incomes paid to individuals and of savings of all enterprises.<sup>3</sup>

<sup>3</sup>National income as thus defined is identical with what in earlier publications we designated as 'national income produced' (see *National Income, 1929-1932*, Senate Doc. No. 124, 73rd Cong., 2d Sess., and *Bulletins 49 and 59* of the National Bureau of Economic Research). The magnitude designated in these publications as 'national income paid out' is here identified as 'aggregate income payments to individuals'. This change in terminology resulted from the discussions prior to and at the meeting of the Conference on Research in National Income and Wealth held in January 1937.

The available data render it necessary to estimate national income by a procedure corresponding to the second definition, i.e., the aggregate of all incomes paid to individuals plus the estimated positive or negative savings of enterprises. For each industrial branch, whose distinction is both possible and significant, we estimate, so far as data permit, the various payments to individuals: wages, salaries, withdrawals by individual entrepreneurs, interest, dividends, pensions, compensation for injury. Net rents can be estimated only for the country as a whole, not by industrial branches. We include not only monetary payments but also some payments that appear in the form of commodities or services: (1) farm produce retained by farm families for their own consumption; (2) payments in kind to employees; (3) services of houses inhabited by their owners. On the other hand, we exclude some incomes that appear in the form of money but that represent payment for activities that are unproductive when judged by the most lenient standard of productivity: (1) illegal activities (theft, robbery, prostitution, murder, etc.); (2) such activities as, while legal, represent largely shifts of income among individuals rather than additions to the command over goods (gambling, speculative gains from sale of assets by non-professional groups); (3) speculative gains of any type resulting from a general change in the price level. Finally, we add to these incomes disbursed to individuals the net savings of enterprises.

This description of the scope of national income measures is admittedly all too brief. It is also impossible to indicate within the scope of this *Bulletin* the limitations to which these measures are subject owing to the weakness of supporting data for some of the component elements. In general, the estimates are most reliable for those industrial branches for which basic data have been available for some time (public utilities reporting to the Interstate Commerce Commission, manufacturing, mining), and least reliable for those industrial branches for which basic Census data are still lacking or are of only recent origin (service industries, real estate, and, of course, the miscellaneous group). Of the various types of income the estimates are most reliable for those whose flow is recorded directly in the data (wages,

It was concluded that the use of the two terms 'national income produced' and 'national income paid out' as equally important concepts created confusion and led to misinterpretations; that the term 'national income' should be reserved for the magnitude formerly called 'national income produced,' as being the most inclusive category and most consonant with the national income concept current in economic writings; and that the magnitude formerly called 'national income paid out,' being a subdivision of national income, would be best described by a specific term. For a more extended discussion see Section I of the forthcoming Volume I of *Studies in Income and Wealth* by the Conference on Research in National Income and Wealth.

salaries, dividends and interest) and least reliable for entrepreneurial withdrawals, rents and savings of enterprises.

## 2. TOTAL NATIONAL INCOME AND ITS CHANGES

As defined above and measured in current prices, the national income of this country since 1919 is given in the first column of Table 1 (see also Chart 1). The marked changes since the War are obvious. After a trough in 1921 of 58.5 billion dollars, which followed immediately the peak in 1920 of 72.7 billion, there was a fairly steady rise to the next peak in 1929 of 83.6 billion. The severe character of the contraction that followed is manifest in the decline to a trough of 39.2 billion dollars in 1933, a drop of 53 per cent from the peak of 1929. Since 1933 national income has risen materially, but in 1935 it was still 36.5 per cent below the 1929 level.

These marked fluctuations in total national income do not reflect only changes in the net volume of commodities and services produced. A substantial part is accounted for

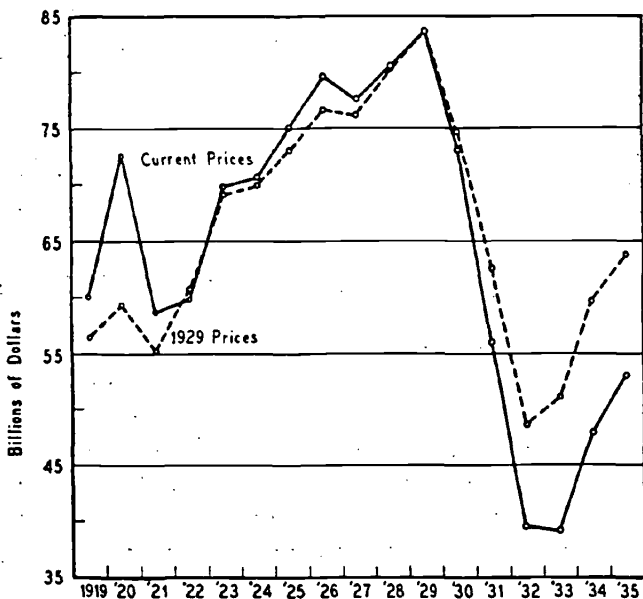
TABLE 1  
NATIONAL INCOME, TOTAL AND PER CAPITA, 1919-1935

	TOTAL NATIONAL INCOME		PER CAPITA
	Current prices (millions of dollars)	1929 prices	IN 1929 PRICES
1919	60,161	56,424	538
1920	72,689	59,368	559
1921	58,521	55,192	511
1922	59,857	60,615	552
1923	69,895	69,214	620
1924	70,557	69,978	616
1925	75,026	73,034	633
1926	79,658	76,639	655
1927	77,608	76,273	643
1928	80,559	80,392	669
1929	83,631	83,614	689
1930	73,111	74,740	609
1931	56,089	62,618	506
1932	39,555	48,554	389
1933	39,247	51,121	407
1934	47,960	59,684	472
1935 <sup>1</sup>	53,118	63,832	501
Average I 1919-1934	65,258	66,091	567
Average II 1919-1926	68,296	65,058	586
Average III 1927-1934	62,220	67,124	548
Percentage change from average II to average III	-8.9	+3.2	-6.5

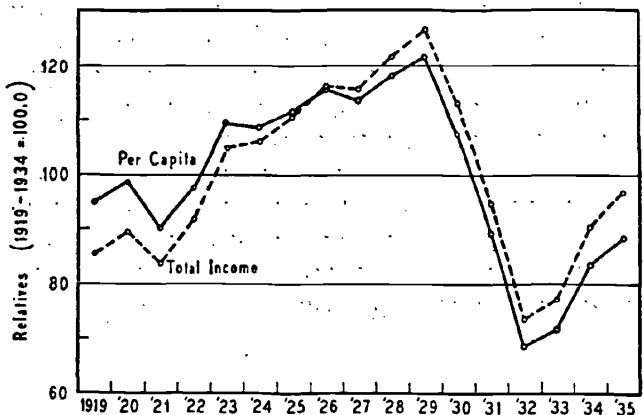
<sup>1</sup>The estimates of national income for 1935 in this and subsequent tables rest upon a much more slender foundation than those for the earlier years. For this reason the averages for the period or parts of the period usually exclude the figure for 1935.

Chart 1  
NATIONAL INCOME, TOTAL AND PER CAPITA  
1919 - 1935

TOTAL IN CURRENT AND 1929 PRICES



TOTAL AND PER CAPITA IN 1929 PRICES



by changes in market values from year to year, and some attempt to eliminate these was made in order to interpret national income in terms of the flow of commodities and services (see the second column of Table 1, national income measured in constant market values of 1929). This adjustment was made as follows. In the study of capital formation in the United States we obtained a measure of net capital formation, comprising the net volume destined for use by business and government agencies, the net accretion to the volume of residential construction, and the net change in claims against foreign countries. This measure of net capital formation was available in terms of both current market values for each year and constant 1929 prices. We then subtracted net capital formation in cur-

rent market values from national income in current prices, obtaining the part of national income that may be designated as consumers' outlay; adjusted this part for changes in prices of consumable goods, on the assumption that these changes were reflected in the index of wage earners' cost of living compiled by the United States Bureau of Labor Statistics; and then recombined this consumers' outlay part of national income in 1929 prices with the volume of net capital formation in 1929 prices.<sup>2</sup>

This adjustment for changes in price level is admittedly approximate, partly because the index of wage earners' cost of living reflects only crudely changes in prices of all consumable goods and services represented in national income; and partly because the measurement of net capital formation in constant prices is necessarily approximate, owing to the relative scarcity of reliable indexes of prices of capital goods. Nevertheless, the estimate of national income in 1929 prices is a much better measure of changes in the volume of commodities and services produced than is national income in current market values. In comparing the two estimates, we observe that the volume in 1929 prices rose much more during the period, i.e., grew more appreciably from the early years to 1929 and declined much less appreciably during the contraction that followed. Thus, the rise to 1929 from the average during 1919-21 was, in terms of current prices, 31 per cent; in constant prices, 47 per cent. The declines from 1929 to 1933 were 53 and 39 per cent, respectively. And when the arithmetic means of the two halves of the period from 1919 through 1934 are compared, national income measured in current prices shows a decline from 68.3 to 62.2 billion dollars; in constant prices it shows a rise from 65.1 to 67.1 billion.

It is of interest to compare changes in national income in constant prices, which describe roughly the movements in the country's current net supply of commodities and services, with the changes in the country's population, i.e., the people who have produced this supply and to whom most of it became available as a fund for consumption and savings. This comparison shows that the rise in the net national product and its decline after 1929 were accompanied by an increase in the population;<sup>3</sup> consequently per

<sup>2</sup>For the estimates of net capital formation see *National Income and Capital Formation*, a Preliminary Report, Section VIII. The choice of 1929 prices as the constant price level in which to express national income was dictated by its corresponding use in the capital formation study. However, since the level of prices in 1929 was only slightly below that of 1926 and only slightly above the average price level for the entire period, 1919-35, it may be taken to represent, with respect to the level of market values, an average rather than an exceptional year.

<sup>3</sup>For annual estimates of population we are indebted to Professors W. S. Thompson and P. K. Whelpton of the Scripps Foundation, Miami, Ohio.

capita income rose appreciably less and declined more than did total income. Thus, while the latter rose from 59.4 billion dollars in 1920 to 83.6 in 1929, 41 per cent, per capita income rose from \$559 to \$689, only 23 per cent. The declines from 1929 to 1932 were 42 and 43.5 per cent respectively. The averages for the two halves of the post-War period show that when reduced to a per capita basis, the rise observed in total income is replaced by a decline.

### 3. DISTRIBUTION ACCORDING TO INDUSTRIAL ORIGIN

A few comments may help the reader to understand the evidence of Tables 2 and 3, which show, in current prices, the distribution of national income and of aggregate income payments to individuals among the industrial branches in which they originated.<sup>4</sup> First, not all types of income can be traced back to their industrial sources. Thus rent payments, actual and imputed, cannot be apportioned among the various industries in which they originated, and have been treated by us as entrepreneurial income in the real estate industry. Second, in measuring business savings, the available data from accounting records on business profit and loss after payment of dividends must be adjusted in several ways in order to yield an adequate measure of business savings; and some of these adjustments can be made only for the national income total as a whole or only for the major industrial divisions.<sup>5</sup> Thus the correction for the difference between depreciation charges in cost and reproduction prices can be made only for national income as a whole, not for the various industrial subdivisions; and the apportionment among industrial branches in Table 2 is of national income, unadjusted by this particular correction. Similarly, the adjustment for gains and losses from inventory holding can be made for the transportation and public utilities, and finance groups, but not separately for their subdivisions. For this reason Table 2 provides both adjusted and unadjusted totals for these two industrial divisions. But the two adjustments are relatively minor, and the effect of their total or partial omission on the distribution by industrial sources is relatively insignificant.

The industrial divisions distinguished in Tables 2 and 3 call for little explanation. Construction refers to contract construction only, and does not include income originating in construction activities undertaken by business enterprises and by public agencies on their own account. The composition of the large groups of transportation and public utili-

<sup>4</sup>The grand totals in Tables 2, 3, 4 and 5 are obtained by an addition of the totals for each industrial branch. The income subtotals by industrial branches are primarily in thousands of dollars. Hence the rounded figures given here for the individual industries do not always add up exactly to the totals shown.

<sup>5</sup>For a more detailed discussion of these adjustments see Section 4.

ties and of finance is shown in the tables. Real estate includes, in addition to income arising from dealing in, managing or servicing real estate property, all rents, paid and imputed. Government covers not only the Federal government but also all other governmental units in the United States, including income originating in public education, and the Post Office. Service covers the numerous branches of service activities: religious, professional, domestic, personal, recreation and amusement, and business. The miscellaneous group is a catch-all for the various activities that cannot be measured separately and properly under the relevant division. It includes such highly dissimilar enterprises as truck and bus transportation, taxicabs, brokerage houses.

The industrial divisions in Tables 2 and 3 may be assembled in three major groups. Group I, comprising agriculture, mining, manufacturing and construction, may be characterized as the industries dealing primarily and largely with the production of commodities. Group II, comprising transportation and public utilities and trade, may be characterized as commodity handling. This characterization, while true of trade, is only roughly true of transportation and public utilities because even steam railroads carry passengers and the activities of such divisions as communication can hardly be classified as handling commodities. Still, the preponderant part of even the combined transportation and public utilities group is devoted to handling commodities, rather than commodity production or the provision of services to individuals. Group III, comprising finance, government, service and miscellaneous, may be characterized broadly as service industries; and while it includes some commodity handling in the miscellaneous division, the relative share of this activity or of commodity production is probably very small.

Table 2, Part B reveals that a large share of total national income arises from activities that do not constitute either production or handling of new commodities; the latter together account, on the average, for slightly over 61 per cent of national income, and the payments to which they give rise account for about the same percentage of aggregate income payments. The remainder is accounted for largely by activities that are either services by individuals to other individuals or to society as a whole, services rendered by highly durable commodities to individuals, or services rendered in connection with the production and handling of commodities but so distinct from the latter activities as to constitute a separate industry.

As among the three groups there were clear-cut differences in the movement over the period as a whole (see Chart 2). Whether expressed in percentages of national income or of aggregate income payments, the relative share of the commodity producing branches declined. Most of

TABLE 2  
DISTRIBUTION OF NATIONAL INCOME ACCORDING TO INDUSTRIAL ORIGIN, 1919-1935

A. ABSOLUTE FIGURES (millions of dollars)																	
	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
1 Agriculture	11,236	8,986	6,226	5,828	6,690	7,325	7,769	7,294	7,199	7,282	7,231	5,510	3,488	2,182	3,080	4,276	4,696
2 Mining	1,832	2,508	1,709	1,430	2,183	1,810	1,954	2,288	1,945	1,719	1,893	1,471	872	503	503	1,007	1,116
3 Manufacturing	16,171	19,907	12,627	13,079	16,784	15,598	16,833	18,151	17,186	17,927	19,828	16,179	10,997	6,248	6,644	9,814	11,546
4 Construction	1,501	2,258	1,895	1,910	2,617	2,892	2,955	3,128	3,129	3,100	3,091	2,646	1,688	708	506	795	878
5 Transportation and other public utilities																	
a Electric light and power and manufactured gas <sup>1</sup>	425	496	524	620	778	880	1,070	1,154	1,248	1,407	1,564	1,614	1,503	1,262	1,146	1,091	1,106
b Steam railroads, Pullman and express <sup>1</sup>	3,937	4,844	3,814	3,822	4,437	4,265	4,486	4,667	4,465	4,482	4,653	3,870	2,974	2,090	2,122	2,222	2,378
c Pipe lines, street railways and water transportation <sup>1</sup>	1,215	1,538	1,250	1,213	1,274	1,291	1,285	1,293	1,245	1,266	1,299	1,143	961	745	707	740	801
d Communication <sup>1</sup>	417	514	532	578	636	677	746	804	841	902	1,001	970	883	724	636	667	701
e Total of above <sup>1</sup>	5,994	7,391	6,121	6,234	7,126	7,113	7,588	7,917	7,799	8,058	8,517	7,597	6,321	4,820	4,610	4,721	4,986
f Adjusted total	5,989	7,461	6,371	6,228	7,089	7,127	7,624	7,934	7,838	8,043	8,513	7,715	6,395	4,860	4,583	4,654	4,991
6 Trade	10,115	11,587	9,692	8,562	10,091	9,742	10,082	11,486	10,465	10,895	11,177	10,901	8,789	6,006	4,846	5,819	6,863
7 Finance																	
a Banking <sup>1</sup>	852	938	902	893	938	1,002	1,100	1,145	1,192	1,290	1,316	1,126	786	516	407	472	613
b Insurance <sup>1</sup>	556	553	550	581	668	748	906	1,000	1,150	1,283	1,293	1,178	1,066	888	830	881	945
c Real estate <sup>1</sup>	4,069	4,480	4,759	5,339	5,742	6,240	6,276	6,322	6,443	6,974	6,932	6,037	4,746	3,484	2,947	2,845	3,086
d Total of above <sup>1</sup>	5,477	5,971	6,211	6,813	7,347	7,989	8,282	8,467	8,785	9,547	9,541	8,341	6,598	4,888	4,185	4,198	4,644
e Adjusted total	5,397	5,918	6,299	6,810	7,363	7,997	8,304	8,489	8,786	9,551	9,541	8,344	6,644	4,906	4,171	4,193	4,643
8 Government	1,158	7,209	6,329	6,706	7,342	7,549	7,808	8,326	8,709	8,666	8,742	8,356	6,721	5,786	6,984	7,903	7,802
9 Service	6,413	7,022	6,408	7,691	8,290	8,798	9,611	10,195	10,015	10,693	11,224	10,136	8,602	6,375	6,111	7,236	8,261
10 Miscellaneous	2,264	2,416	2,014	2,159	2,538	2,607	2,861	3,083	3,034	3,257	3,077	2,211	1,883	1,537	1,361	2,248	2,397
Total A (of groups and subgroups)	62,162	75,255	59,233	60,414	71,009	71,423	75,743	80,334	78,267	81,143	84,322	73,347	55,959	39,053	38,829	48,017	53,189
Total B (of groups)	62,077	75,272	59,571	60,405	70,988	71,445	75,801	80,373	78,307	81,132	84,318	73,468	56,079	39,111	38,788	47,945	53,193
Group I (1-4)	30,740	33,659	22,457	22,248	28,274	27,624	29,510	30,861	29,459	30,027	32,044	25,805	17,045	9,641	10,733	15,891	18,236
" II (5f and 6)	16,104	19,048	16,063	14,791	17,181	16,869	17,706	19,420	18,303	18,938	19,690	18,616	15,184	10,866	9,430	10,473	11,854
" III (7e-10)	15,232	22,565	21,051	23,367	25,533	26,952	28,585	30,092	30,545	32,167	32,584	29,047	23,850	18,604	18,626	21,580	23,103
B. PERCENTAGE DISTRIBUTION																	
1 Agriculture	18.1	11.9	10.5	9.6	9.4	10.3	10.3	9.1	9.2	9.0	8.6	7.5	6.2	5.6	7.9	8.9	8.8
2 Mining	2.9	3.3	2.9	2.4	3.1	2.5	2.6	2.8	2.5	2.1	2.2	2.0	1.6	1.3	1.3	2.1	2.1
3 Manufacturing	26.0	26.5	21.3	21.6	23.6	21.8	22.2	22.6	22.0	22.1	23.5	22.1	19.7	16.0	17.1	20.4	21.7
4 Construction	2.4	3.0	3.2	3.2	3.7	4.0	3.9	3.9	4.0	3.8	3.7	3.6	3.0	1.8	1.3	1.7	1.7
5 Transportation and other public utilities																	
a Electric light and power and manufactured gas	0.7	0.7	0.9	1.0	1.1	1.2	1.4	1.4	1.6	1.7	1.9	2.2	2.7	3.2	3.0	2.3	2.1
b Steam railroads, Pullman and express	6.3	6.4	6.4	6.3	6.2	6.0	5.9	5.8	5.7	5.5	5.5	5.3	5.3	5.4	5.5	4.6	4.5
c Pipe lines, street railways and water transportation	2.0	2.0	2.1	2.0	1.8	1.8	1.7	1.6	1.6	1.6	1.5	1.6	1.7	1.9	1.8	1.5	1.5
d Communication	0.7	0.7	0.9	1.0	0.9	0.9	1.0	1.0	1.1	1.1	1.2	1.3	1.6	1.9	1.6	1.4	1.3
e Total of above	9.6	9.8	10.3	10.3	10.0	10.0	10.0	9.9	10.0	9.9	10.1	10.4	11.3	12.3	11.9	9.8	9.4
f Trade	16.3	15.4	16.4	14.2	14.2	13.6	13.3	14.3	13.4	13.4	13.3	14.9	15.7	15.4	12.5	12.1	12.9
7 Finance																	
a Banking	1.4	1.2	1.5	1.5	1.3	1.4	1.5	1.4	1.5	1.6	1.6	1.5	1.4	1.3	1.0	1.0	1.2
b Insurance	0.9	0.7	0.9	1.0	0.9	1.0	1.2	1.2	1.5	1.6	1.5	1.6	1.9	2.3	2.1	1.8	1.8
c Real estate	6.5	6.0	8.0	8.8	8.1	8.7	8.3	7.9	8.2	8.6	8.2	8.2	8.5	8.9	7.6	5.9	5.8
d Total of above	8.8	7.9	10.5	11.3	10.3	11.2	10.9	10.5	11.2	11.8	11.3	11.4	11.8	12.5	10.8	8.7	8.7
e Government	1.9	9.6	10.7	11.1	10.3	10.6	10.3	10.4	11.1	10.7	10.4	11.4	12.0	14.8	18.0	16.5	14.7
f Service	10.3	9.3	10.8	12.7	11.7	12.3	12.7	12.7	12.8	13.2	13.3	13.8	15.4	16.3	15.7	15.1	15.5
10 Miscellaneous	3.6	3.2	3.4	3.6	3.6	3.7	3.8	3.8	3.9	4.0	3.6	3.0	3.4	3.9	3.5	4.7	4.5
Total A	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Group I (1-4)	49.5	44.7	37.7	36.8	39.8	38.7	38.9	38.4	37.6	37.0	38.0	35.1	30.4	24.6	27.7	33.1	34.3
" II (5f and 6)	25.9	25.3	27.0	24.5	24.2	23.6	23.4	24.2	23.4	23.3	23.4	25.3	27.1	27.8	24.3	21.8	22.3
" III (7e-10)	24.5	30.0	35.3	38.7	36.0	37.7	37.7	37.4	39.0	39.6	38.6	39.5	42.5	47.6	48.0	45.0	43.4
Total B	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

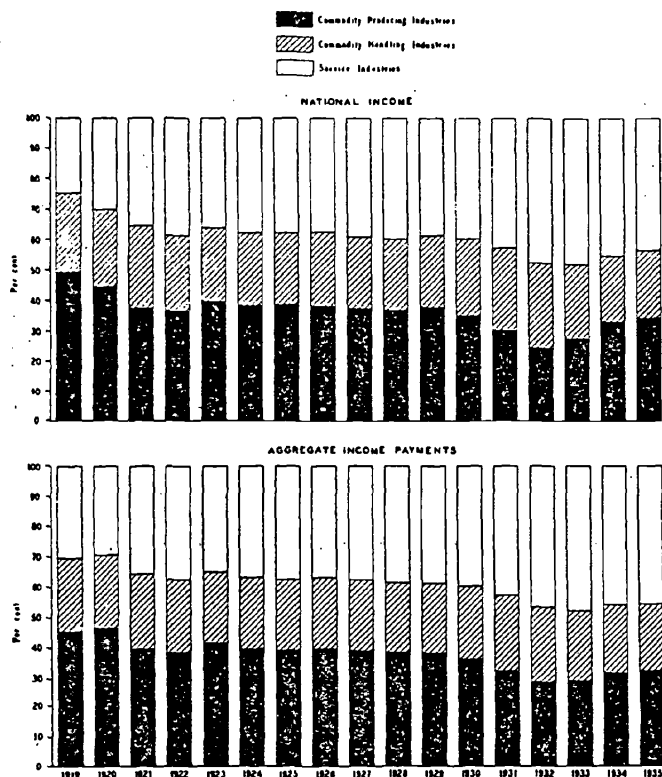
<sup>1</sup>Not adjusted for gains and losses on holding of inventories.

TABLE 3  
DISTRIBUTION OF AGGREGATE INCOME PAYMENTS TO INDIVIDUALS  
ACCORDING TO INDUSTRIAL ORIGIN, 1919-1935

A. ABSOLUTE FIGURES (millions of dollars)																	
	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
1 Agriculture	8,480	9,757	6,592	6,350	7,022	7,094	7,197	7,351	7,333	7,328	7,354	6,617	5,258	4,041	3,813	4,152	4,545
2 Mining	1,796	2,494	1,861	1,703	2,428	2,099	2,054	2,382	2,111	1,886	2,059	1,712	1,186	799	790	1,111	1,167
3 Manufacturing	14,292	16,780	11,732	12,255	15,262	14,553	15,383	16,168	16,260	16,893	18,035	15,864	12,288	8,567	8,516	10,509	11,710
4 Construction	1,541	2,093	1,623	1,975	2,657	2,702	2,852	2,951	2,909	3,063	3,031	2,518	1,644	833	794	938	908
5 Transportation and other public utilities																	
a Electric light and power and manufactured gas	426	477	491	556	707	857	922	1,022	1,098	1,247	1,367	1,474	1,453	1,304	1,189	1,126	1,132
b Steam railroads, Pullman and express	3,879	4,830	3,820	3,716	4,155	4,023	4,104	4,238	4,289	4,122	4,260	3,892	3,193	2,351	2,173	2,333	2,484
c Pipe lines, street railways and water transportation	1,171	1,467	1,247	1,210	1,239	1,257	1,252	1,256	1,231	1,235	1,258	1,209	1,036	872	738	778	836
d Communication	391	493	502	532	590	634	677	728	760	801	892	924	871	779	703	727	753
e Total	5,867	7,287	6,059	6,014	6,690	6,751	6,956	7,243	7,378	7,405	7,777	7,498	6,554	5,306	4,803	4,964	5,205
6 Trade	8,034	9,039	7,676	8,032	8,802	9,029	9,478	9,970	9,807	10,030	10,650	10,178	8,926	7,016	6,239	6,749	7,117
7 Finance																	
a Banking	627	738	795	808	832	863	903	948	1,012	1,054	1,165	1,128	1,016	796	611	632	679
b Insurance	510	615	635	674	771	854	955	1,045	1,114	1,182	1,273	1,265	1,167	963	859	911	957
c Real estate	4,055	4,522	4,794	5,324	5,786	6,223	6,374	6,382	6,500	6,973	7,260	6,323	5,097	3,894	3,301	2,985	3,144
d Total	5,193	5,874	6,223	6,806	7,390	7,939	8,232	8,375	8,626	9,208	9,698	8,714	7,280	5,653	4,771	4,528	4,780
8 Government	5,202	5,299	5,492	5,553	5,728	5,896	6,058	6,267	6,514	6,741	7,028	7,209	7,341	7,265	7,838	8,974	9,364
9 Service	5,202	6,302	6,050	7,250	7,502	8,191	8,953	9,241	9,495	10,097	10,751	9,975	9,092	7,806	8,115	8,130	9,023
10 Miscellaneous	1,893	2,130	1,868	2,103	2,375	2,508	2,759	2,874	2,948	3,173	3,425	3,334	2,996	2,499	2,200	2,330	2,468
Total	57,499	67,056	55,177	58,041	65,854	66,763	69,921	72,823	73,381	75,823	79,808	73,620	62,565	49,785	47,880	52,385	56,287
Group I (1-4)	26,108	31,124	21,809	22,283	27,368	26,448	27,486	28,853	28,613	29,170	30,479	26,711	20,376	14,240	13,913	16,710	18,330
" II (5e and 6)	13,901	16,326	13,735	14,046	15,492	15,780	16,433	17,213	17,185	17,434	18,427	17,676	15,480	12,322	11,042	11,713	12,322
" III (7d-10)	17,489	19,605	19,633	21,712	22,994	24,534	26,002	26,757	27,583	29,218	30,902	29,233	26,710	23,223	22,924	23,962	25,635
B. PERCENTAGE DISTRIBUTION																	
1 Agriculture	14.7	14.6	11.9	10.9	10.7	10.6	10.3	10.1	10.0	9.7	9.2	9.0	8.4	8.1	8.0	7.9	8.1
2 Mining	3.1	3.7	3.4	2.9	3.7	3.1	2.9	3.3	2.9	2.5	2.6	2.3	1.9	1.6	1.6	2.1	2.1
3 Manufacturing	24.9	25.0	21.3	21.1	23.2	21.8	22.0	22.2	22.2	22.3	22.6	21.5	19.6	17.2	17.8	20.1	20.8
4 Construction	2.7	3.1	2.9	3.4	4.0	4.1	4.1	4.1	4.0	4.0	3.8	3.4	2.6	1.7	1.7	1.8	1.6
5 Transportation and other public utilities																	
a Electric light and power and manufactured gas	0.7	0.7	0.9	1.0	1.1	1.3	1.3	1.4	1.5	1.6	1.7	2.0	2.3	2.6	2.5	2.1	2.0
b Steam railroads, Pullman and express	6.7	7.2	6.9	6.4	6.3	6.0	5.9	5.8	5.8	5.4	5.3	5.3	5.1	4.7	4.5	4.5	4.4
c Pipe lines, street railways and water transportation	2.0	2.2	2.3	2.1	1.9	1.9	1.8	1.7	1.7	1.6	1.6	1.6	1.7	1.8	1.5	1.5	1.5
d Communication	0.7	0.7	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.1	1.1	1.3	1.4	1.6	1.5	1.4	1.3
e Total	10.2	10.9	11.0	10.4	10.2	10.1	9.9	9.9	10.1	9.8	9.7	10.2	10.5	10.7	10.0	9.5	9.2
6 Trade	14.0	13.5	13.9	13.8	13.4	13.5	13.6	13.7	13.4	13.2	13.3	13.8	14.3	14.1	13.0	12.9	12.6
7 Finance																	
a Banking	1.1	1.1	1.4	1.4	1.3	1.3	1.3	1.3	1.4	1.4	1.5	1.5	1.6	1.6	1.3	1.2	1.2
b Insurance	0.9	0.9	1.2	1.2	1.2	1.3	1.4	1.4	1.5	1.6	1.6	1.7	1.9	1.9	1.8	1.7	1.7
c Real estate	7.1	6.7	8.7	9.2	8.8	9.3	9.1	8.8	8.9	9.2	9.1	8.6	8.1	7.8	6.9	5.7	5.7
d Total	9.0	8.8	11.3	11.7	11.2	11.9	11.8	11.5	11.8	12.1	12.2	11.8	11.6	11.4	10.0	8.6	8.6
8 Government	9.0	7.9	10.0	9.6	8.7	8.8	8.7	8.6	8.9	8.9	8.8	9.8	11.7	14.6	16.4	17.1	16.6
9 Service	9.0	9.4	11.0	12.5	11.4	12.3	12.8	12.7	12.9	13.3	13.5	13.5	14.5	15.7	16.9	15.5	16.0
10 Miscellaneous	3.3	3.2	3.4	3.6	3.6	3.8	3.9	3.9	4.0	4.2	4.3	4.5	4.8	5.0	4.6	4.4	4.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Group I (1-4)	45.4	46.4	39.5	38.4	41.6	39.6	39.3	39.6	39.0	38.5	38.2	36.3	32.6	28.6	29.1	31.9	32.6
" II (5e and 6)	24.2	24.3	24.9	24.2	23.5	23.6	23.5	23.6	23.4	23.0	23.1	24.0	24.7	24.8	23.1	22.4	21.9
" III (7d-10)	30.4	29.2	35.6	37.4	34.9	36.7	37.2	36.7	37.6	38.5	38.7	39.7	42.7	46.6	47.9	45.7	45.6

56  
85

Chart 2  
PERCENTAGE DISTRIBUTION OF NATIONAL INCOME AND OF AGGREGATE  
INCOME PAYMENTS BY MAJOR INDUSTRIAL DIVISIONS  
1919 - 1935



the decline occurred from 1919 to 1921 and from 1929 to 1932, but there was a downward drift even from 1923 to 1929; and inspection of the percentages for each industrial division in this group shows that in three—agriculture, mining and manufacturing—this downward movement in the percentage share of national income or of aggregate income payments is clearly and consistently present. Only in construction, owing to the long swing characteristic of the industry, is this declining trend in relative importance not obvious.

The group called 'commodity handling' shows no such decline in its relative share of national income or of aggregate income payments. This percentage share varies somewhat from year to year, both for the group as a whole and for its two divisions, but reveals no definite trend over the period for its components or the total. While the various industrial branches subsumed under transportation and public utilities show distinct and different trends in their relative shares over the period (e.g., the growth in the importance of electric light and power and gas, and of communications, and the decline in that of steam railroads and other transportation) their combination cancels these conflicting movements.

In contrast to the share of commodity producing industries, the relative weight of the service industries rose dis-

tinctly over the period. This rise was apparent in each of the important subdivisions of this group, finance, government and service. The conclusion is thus unavoidable that the development of the economic system since the War has meant, as far as the composition of the national net product is concerned, a shift away from production of new commodities to service activities significantly different in character and industrial organization from the production and handling of commodities.

It should be emphasized that these conclusions refer to the industrial distribution of national income in current prices. When adjustment for price changes is made for the specific industrial branches, the changes in industrial distribution might quite possibly be substantially different. A preliminary analysis of such a distribution of national income in constant prices suggests that the decline in the relative share of commodity producing industries and the rise in the relative share of service industries has been mainly due to the greater decline in the prices of commodities than in the prices of services.<sup>8</sup> But in view of the slender basis upon which the difficult adjustment for price changes rests, this conclusion can be treated as a tentative suggestion deserving further exploration.

#### 4. DISTRIBUTION ACCORDING TO TYPE OF INCOME

a. *Meaning of Classification.* The allocation of national income discussed in this section has already been suggested in the definition in Section 1 above. Business and other enterprises engaged in the production of income distribute most of their share in it as payments to individuals in return for their services or the services of their property; or in the form of payments to individuals only remotely connected with the productive process (pensions, compensation for injuries, relief payments, etc.). The residue, which may be either positive or negative, represents the net savings of these enterprises. It is of obvious importance to study how total national income is apportioned between such savings and aggregate income payments to individuals; and how the latter are apportioned among various types of payment. Such allocations can be made for total national income only as measured in current market values; they are presented in Table 4 for 1919 through 1935.

The various types of payment distinguished call for little comment. Wages, salaries, pensions, dividend and interest payments are familiar. It need be noted only that dividend payments measured here cover disbursements to individuals, and thus exclude the intercorporate dividend flow; that interest payments cover only interest on long term debt, upon the assumption that all short term interest is paid to other business enterprises and that short term

<sup>8</sup>See the forthcoming volume, *National Income and Capital Formation*, A Preliminary Report, Section III.



TABLE 4  
DISTRIBUTION OF NATIONAL INCOME ACCORDING TO TYPE OF INCOME, 1919-1935

		A. ABSOLUTE TOTALS (millions of dollars)																
		1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
1	Wages and salaries <sup>1</sup>	58,821	45,750	36,705	39,124	45,183	45,420	47,651	50,362	50,570	52,196	55,191	50,332	42,943	33,894	32,432	35,785	38,753
2	Compensation for injuries, <sup>2</sup> pensions and relief <sup>3</sup>	476	636	720	730	755	779	723	718	749	768	809	851	953	976	1,920	2,764	2,876
3	Employees' compensation <sup>1,2,3</sup>	59,297	46,387	37,424	39,854	45,938	46,199	48,373	51,080	51,319	52,964	56,000	51,182	43,896	34,870	34,353	38,549	41,631
4	Withdrawals by entrepreneurs <sup>4</sup>	9,651	11,095	7,993	7,751	8,271	8,455	8,593	8,544	8,499	8,338	8,677	7,910	6,554	5,303	5,062	5,515	5,994
5	Rents	2,670	2,999	3,296	3,754	3,915	4,169	4,146	3,902	3,675	3,788	3,763	3,111	2,088	1,319	1,311	1,165	1,323
6	Entrepreneurial income payments	12,321	14,094	11,289	11,505	12,186	12,624	12,739	12,446	12,174	12,327	12,440	11,021	8,642	6,622	6,373	6,680	7,317
7	Dividends <sup>5</sup>	2,812	3,123	2,848	2,920	3,714	3,655	4,237	4,601	4,892	5,209	5,807	5,708	4,270	2,679	2,147	2,497	2,845
8	Interest <sup>6</sup>	3,041	3,410	3,546	3,676	3,922	4,156	4,418	4,586	4,864	5,174	5,409	5,507	5,474	5,362	4,837	4,566	4,445
9	Property income payments <sup>6</sup>	5,882	6,575	6,463	6,682	7,730	7,940	8,808	9,297	9,888	10,532	11,367	11,417	10,028	8,293	7,154	7,156	7,339
10	Aggregate income payments to individuals	57,499	67,056	55,177	58,041	65,854	66,763	69,921	72,823	73,381	75,823	79,808	73,620	62,565	49,785	47,880	52,385	56,287
11	Net savings of business enterprises <sup>7</sup>	6,706	3,722	2,506	663	2,427	2,141	3,355	4,777	2,031	2,810	2,109	-1,656	-5,856	-8,751	-7,779	-3,354	-1,607
12	Net savings of government	-4,044	1,910	838	1,153	1,614	1,653	1,751	2,059	2,195	1,926	1,714	1,147	-620	-1,479	-854	-1,070	-1,562
13	Total net savings of enterprises	2,661	5,633	3,344	1,816	4,042	3,794	5,106	6,836	4,227	4,736	3,823	-509	-6,476	-10,230	-8,633	-4,425	-3,169
14	National income	60,161	72,689	58,521	59,857	69,895	70,557	75,026	79,658	77,608	80,559	83,631	73,111	56,089	39,555	39,247	47,960	53,118
		B. PERCENTAGE DISTRIBUTION																
1	Wages and salaries	67.5	68.2	66.5	67.4	68.6	68.0	68.1	69.2	68.9	68.8	69.2	68.4	68.6	68.1	67.7	68.3	68.9
2	Compensation for injuries, pensions and relief	0.8	0.9	1.3	1.3	1.1	1.2	1.0	1.0	1.0	1.0	1.0	1.2	1.5	2.0	4.0	5.3	5.1
3	Employees' compensation	68.3	69.2	67.8	68.7	69.8	69.2	69.2	70.1	69.9	69.9	70.2	69.5	70.2	70.0	71.7	73.6	74.0
4	Withdrawals by entrepreneurs	16.8	16.5	14.5	13.4	12.6	12.7	12.3	11.7	11.6	11.3	10.9	10.7	10.5	10.7	10.6	10.5	10.6
5	Rents	4.6	4.5	6.0	6.5	5.9	6.2	5.9	5.4	5.0	5.0	4.7	4.2	3.3	2.6	2.7	2.2	2.4
6	Entrepreneurial income payments	21.4	21.0	20.5	19.8	18.5	18.9	18.2	17.1	16.6	16.3	15.6	15.0	13.8	13.3	13.3	12.8	13.0
7	Dividends	4.9	4.7	5.2	5.0	5.6	5.5	6.1	6.3	6.7	6.9	7.3	7.8	6.8	5.4	4.5	4.8	5.1
8	Interest	5.3	5.1	6.4	6.3	6.0	6.2	6.3	6.3	6.6	6.8	6.8	7.5	8.7	10.8	10.1	8.7	7.9
9	Property income payments	10.2	9.8	11.7	11.5	11.7	11.9	12.6	12.8	13.5	13.9	14.2	15.5	16.0	16.7	14.9	13.7	13.0
10	Aggregate income payments to individuals	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
11	Total net savings of enterprises as percentage of aggregate income payments to individuals	4.6	8.4	6.1	3.1	6.1	5.7	7.3	9.4	5.8	6.2	4.8	-0.7	-10.4	-20.5	-18.0	-8.4	-5.6

<sup>1</sup>Including withdrawals by entrepreneurs in service and miscellaneous.

<sup>2</sup>Including payments by steam railroads, Pullman and express for compensation for injuries to persons other than employees.

<sup>3</sup>Including payment by the government for direct relief and work relief in 1933, 1934 and 1935.

<sup>4</sup>Excluding withdrawals by entrepreneurs in service and miscellaneous which are included with wages and salaries.

<sup>5</sup>A small amount of dividends from corporations engaged in agriculture is included with interest payments.

<sup>6</sup>Including net balance of international payments.

<sup>7</sup>These net savings are adjusted throughout for the effects of changing inventory valuations and for the differences between depreciation at cost prices and at current prices. But the adjustment for gains and losses on sale of capital assets was possible only since 1929. The items for these years, the adjustment for which is already made in the table, are as follows (in millions of dollars):

	1929	1930	1931	1932	1933	1934	1935
	+816	-337	-1,509	-1,621	-1,500	-376	-157

interest paid to individuals by banks represents an indirect flow of long term interest; and that the only allowance possible for incorporate long term interest payments is that on government securities.<sup>7</sup> Entrepreneurial withdrawals are the amounts that individual entrepreneurs withdraw from their business for consumption and investment elsewhere—an estimate necessarily highly tentative. Rents received by individuals comprise both actual monetary rental received, minus the expenses incurred, and imputed net rental to the individuals who own the houses in which they reside. While compensation for injuries covers small amounts paid to individuals other than employees, it may be grouped with pensions, relief, wages and salaries as employees' compensation. Withdrawals by entrepreneurs and rents may be classified as entrepreneurial income, although there is some ground for classifying rent with property income. Dividends and interest receipts are individuals' property income.

Savings of enterprises is a residual item of controlling importance, and should, in accordance with our definition of national income, equal the difference between the current value of all commodities and services produced, less the current market value of commodities consumed in production, and total income payments to individuals. The entry on the income account of business enterprises that most closely corresponds to net savings as thus defined is net profit or loss, after deduction of dividends and income taxes. But this item still differs from the desired measure of net savings in the following respects: (a) it includes gains and losses on sale of capital assets; (b) it estimates the consumption of durable commodities, subject to depreciation and depletion, at their original cost, not at current reproduction cost; (c) it measures the consumption of current materials at original cost, when prices are rising, or at cost or market, whichever lower, when prices are declining, instead of evaluating them at market price at the time of consumption. Thus, in order to arrive at a correct figure for net savings of enterprises, the item available from business accounting records must be adjusted for all these possible departures, an adjustment that can be made in varying degree for the various distortions noted.

Gains and losses on sale of capital assets can be excluded only since 1929; and savings, and hence national income are uncorrected in this respect for all years before 1929. The magnitude of this item can be judged by its amount (1.6 billion dollars) for 1932, the year covered by data in which it was largest (see note 7 to Table 4).

The correction for the difference between the depreciation and depletion deductions in reproduction and original

<sup>7</sup>These various assumptions are made largely because we lack data upon which to base a more accurate measure of interest payments to individuals.

cost prices could be made for all the years in the period by utilizing the estimates prepared by Solomon Fabricant.<sup>8</sup> It was possible to do so, however, only for national income as a whole, not for its various industrial categories.

The disparity between the value of non-durable commodities consumed at cost and at market price can be estimated approximately by reducing the year-end inventories for each year to a common price level, obtaining the change in inventories, expressing this change in prices for the current year, and then comparing it with the difference in the year-end inventories in their changing current valuations. This disparity, which measures the reported net profit or loss due to revaluation of inventories, can be computed not only for national income as a whole but also for most of the industrial branches distinguished.

Finally, for government, savings were computed directly, by comparing the net change in the basic fixed assets of government, i.e., buildings, roads, etc., with the net change in total government debt. The former item was obtained from estimates of total public construction, available in the capital formation study, reduced for each year by the depreciation on government fixed assets as estimated by Solomon Fabricant. The second item is easily derived from the data on total outstanding government debt. The resulting difference represents a crude estimate of net savings by all government agencies, i.e., the amount by which the net addition to fixed assets exceeded or fell short of the total change in debt outstanding.

Having commented upon the meaning of the various categories in Table 4, we may now note how gaps in the available data affected the allocations. First, absence of relevant data made it impossible to segregate wages and salaries from entrepreneurial withdrawals in service and miscellaneous industries before 1929. In 1929 total entrepreneurial withdrawals in these two industrial divisions amounted to about 5.1 billion dollars while salaries and wages were estimated at 8.5 billion; we decided, therefore, to include the combined item with wages and salaries rather than with entrepreneurial withdrawals. Since total salaries and wages of all industries in 1929 were over 50 billion dollars, the addition to this total of entrepreneurial withdrawals in service and miscellaneous industries could not greatly affect the relative weight or changes in relative importance of employees' compensation. But the exclusion of this item from total entrepreneurial withdrawals may have affected significantly the latter total. Second, as already indicated, net savings of business enterprises prior to 1929 could not be adjusted for gains and losses on sale

<sup>8</sup>His preliminary estimates were published in *Measures of Capital Consumption, 1919-1933, Bulletin 60*. In this *Bulletin* we have utilized his revised estimates which will appear in detail in a final report, *Capital Consumption*.

of capital assets, an omission that in view of the material price changes, especially in the early years of the period, may well have affected this item considerably.

b. *Importance of Net Savings of Enterprises.* When we view now the apportionment of national income between payments to individuals and net savings of enterprises, two conclusions stand out clearly. When considered over a fairly long period the share retained by enterprises appears to be relatively small, thus indicating that the overwhelming bulk of national income produced is distributed as payments to individuals. The cumulative total of net savings of business enterprises over the period as a whole, including 1935, amounts to only about 4.2 billion dollars; the inclusion of net savings of government raises it to 12.6 billion dollars. These totals average per year only 0.25 and 0.74 billion dollars respectively, and constitute only 0.4 and 1.1 per cent of the average national income.

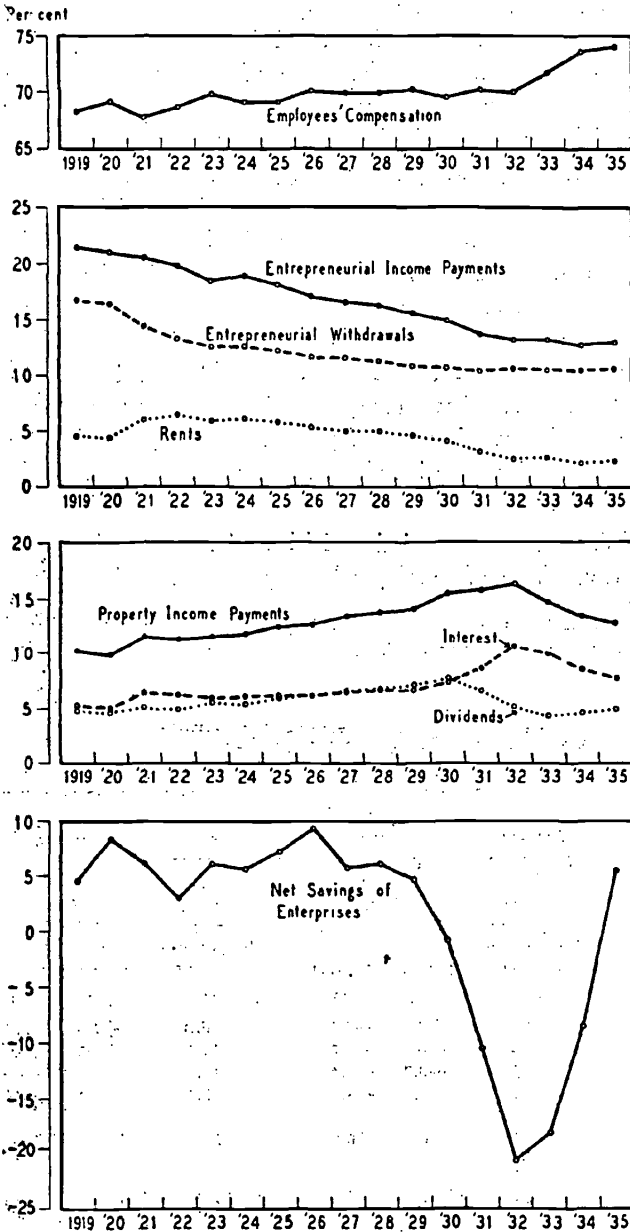
However, these averages conceal the extreme variations in the savings of enterprises, and the close conformity of these variations to fluctuations in the country's general business conditions—two characteristics that make this item exceedingly important in determining changes in total national income and render its measure useful in arriving at an understanding of economic fluctuations. The great variability of savings of enterprises is shown by the fact that whereas the algebraic average of the item amounts to only 0.74 billion dollars per year (including savings of government), and to 0.25 billion dollars when confined to savings of business enterprises alone, the averages of this item with signs disregarded are 4.7 and 3.7 billion dollars per year respectively. The range in the variation is quite striking. Total net savings of enterprises ranged from a peak of plus 6.8 billion dollars in 1926 to a trough of minus 10.2 billion dollars in 1932. When we compare total national income for these two years it is seen that, of its decline of 40 billion dollars, over 40 per cent is accounted for by the decline in net savings alone. Similarly, net savings of business enterprises (exclusive of savings by government) range from a peak of plus 6.7 billion dollars in 1919 to a trough of minus 8.8 billion dollars in 1932; and of the decline in national income of some 20 billion dollars between these two years, the drop in net savings of business enterprises alone accounts for over 15 billion dollars or for about 75 per cent. Also, the fluctuations in net savings, particularly in savings of business enterprises, follow closely the changes in general business conditions, showing very conspicuously the contractions of 1920-21, 1924, 1927 and 1930-32. It is surprising that both total savings of enterprises and savings of business enterprises declined from 1928 to 1929, but this may be due largely to the adjustment for gains on sale of capital assets in the latter year but not in the former.

c. *Changes in Distribution by Type of Payment.* In considering the various types of payment and grouping them in the broad categories of employees' compensation, entrepreneurial income and property income, we are concerned not only with the absolute quantities but also with the relative proportions accounted for by each, especially with any changes in the proportions. This concern arises from the fact that these types of income represent largely the compensation of various groups in the economic system. Wages and the bulk of salaries constitute the main income of a large group in the population whose per capita income is relatively low; and changes in the relative share of wages and salaries indicate, though only approximately, changes in the relative share of the low income groups. Dividends and interest disbursements are received largely by those whose average income is relatively high; and a change in the proportion of income going out as dividends and interest is, with certain qualifying conditions, an index of the change of the share of income received by the high income groups in the income-receiving population. Entrepreneurial incomes occupy an intermediate position, and tend to vary greatly in average magnitude from one industrial branch to the next. The group is dominated by agriculture and retail trade, and thus represents the main income of that large class of small entrepreneurs whose average income is fairly low and subject to the vicissitudes of the competitive struggle under changing business conditions.

The share of various types of payment is measured in percentages of aggregate income payments, not in percentages of total national income for the reason that net savings of enterprises cannot be assigned as an income share to any specific group of income recipients. There is often an inclination to treat these savings as part of property income, on the ground that such savings or losses affect most conspicuously the value of securities held by the recipients of interest and dividend payments. But if incurring a business loss or retaining business savings by an enterprise does affect the fortunes of its security holders, the net savings as measured by us are hardly a measure of the effect. And it may reasonably be argued that savings of enterprises in an industry are as important to the employees as to the owners, and have as much effect on their economic welfare. Upon this assumption, percentage allocation among the types of payment of national income would be identical with that of aggregate income payments to individuals.

Table 4, Part B and Chart 3 show that employees' compensation, including wages and salaries, pensions, relief and entrepreneurial withdrawals in service and miscellaneous industries, accounted on the average for about 70 per cent of the total flow of income payments to individuals; and that this relative share remained fairly constant over the period. If the percentages are averaged for the two halves

Chart 3  
 VARIOUS TYPES OF PAYMENT AND NET SAVINGS OF ENTERPRISES IN PERCENTAGES OF AGGREGATE INCOME PAYMENTS 1919 - 1935



of the post-War period, the resulting means suggest a slight upward trend; this impression is confirmed when it is seen that before 1926 the percentage in the third line never went above 69.8, while beginning with 1926 it was at the level of 69.9 or higher in all years except one. But the differences are too small to indicate any definite rise in the share of employees' compensation; and the averages are considerably affected by the increased importance of relief in 1933, 1934 and 1935.

The other two major groups of payment both show

distinctive and significant trends. The share of entrepreneurial incomes declined continuously, owing largely to the decline in the relative share of entrepreneurial withdrawals. Indeed, prior to 1932 the percentage share of the latter declined each year except in 1924, and from a level of about one-sixth of total income payments in 1919 and 1920 it dropped to about one-tenth in 1933 and 1934.<sup>9</sup> The relative share of the rent item showed at first a rise, associated with the decline in expenses and the high rent levels prevailing in the years before the expansion of the volume of construction exercised a moderating effect on rents; then a decline, which became especially precipitous after 1929. In contrast to entrepreneurial income, the relative share of property income rose distinctly over the period as a whole, accounting for one-tenth of total income payments in the early years of the period and about one-sixth in the later years. This upward tendency was manifest in both dividend and interest payments before 1929, but since then primarily in the latter. If rents were added to dividends and interest payments in a new total of property income, the share of the latter would still show a marked rise over the period.

The changes in the relative shares of various types of payment indicated in Table 4 are of considerable significance, and deserve further exploration. It would be of especial interest to ascertain whether both the changes over the period and the fluctuations that appear to be associated with business cycles persist when the dollar volumes are corrected for changes in the price level. But since the specific price data needed for such an inquiry are not available, it cannot be pursued. However, some further test of the conclusions just drawn from Table 4 can be made by a study of the cross-classification of aggregate income payments by type of payment and industrial source.

5. CROSS-CLASSIFICATION BY TYPE OF PAYMENT AND INDUSTRIAL SOURCE.

In considering the combined classification by type of payment and industrial source, various lines of inquiry may

<sup>9</sup>This downward tendency would undoubtedly persist even were entrepreneurial withdrawals in service and miscellaneous industries included with all other entrepreneurial withdrawals. If we assume that this item, now included with employees' compensation, doubled between 1919-20 and 1929, an assumption that tends to exaggerate any upward movement that may have existed in it, the inclusion would add slightly over 4 per cent in 1919-20 and slightly over 6 per cent in 1929 to the share of entrepreneurial incomes. This would still leave a decline in entrepreneurial withdrawals from about 20.8 per cent in 1919-20 to 17.3 in 1929.

On the other hand, the exclusion of this item from employees' compensation would remove completely any slight rise that appeared in its relative share; this, of course, on the improbable assumption that the increase in entrepreneurial withdrawals in service and miscellaneous industries has attained the striking magnitude suggested above.

be pursued. It is possible to determine whether the changes observed in the relative shares of various types of payment in the country's total are also present within each industrial branch distinguished; and to ascertain how the shift in the relative importance of various industrial branches contributed to the changes in the relative proportions of the various types of payment. It is also possible to study the changes observable in the relative share of various industrial branches within each type of payment; and to see how the shift in the relative importance of various types of payment contributed to the changes in the relative share of the various industrial branches.

It would not be possible here, or generally profitable, to pursue all these lines of inquiry. We confine the analysis to the question how the change in the distribution by type of payment within each industrial branch, and the shift in the relative weight of the various industrial branches, have contributed to the changes in the percentage share of the various types of payment in the nation's aggregate of income payments. We thus make the changes in the distribution by type of payment the dependent variable, rather than the shifts in the relative weight of various industrial divisions in the nation's economic system: the growth and change of the various industries appears to us to be the

independent factor that provides the framework within which changes in the percentage distribution by type of payment are to be understood.

The first question to be answered is whether shifts in the relative shares of various types of payment in the total also occurred in each industrial branch. Do the slight upward movement in the share of employees' compensation, the downward movement in the share of entrepreneurial income, and the marked upward movement in the share of property income, appear in the distribution of income payments originating in each industrial division? An answer to this question is provided in Table 5, which measures the movement over the period in the relative share of the various types of payment by the total change in the average percentage for two pairs of segments of the post-War period: 1919-26 and 1927-34, and 1922-26 and 1927-31. We have computed similar measures also for the two intervening sets of periods (omitted in the table); our conclusions are based on the consideration of all these measures.<sup>10</sup>

When the separate industrial branches are considered, the relative share of employees' compensation which, for the

<sup>10</sup>For a more extended table of this type, confined to nine industrial branches, see *Bulletin 59*, Table 6, p. 15; see also Table 6 below.

TABLE 5  
CHANGE IN PERCENTAGE SHARE OF VARIOUS TYPES OF PAYMENT WITHIN EACH INDUSTRIAL BRANCH

INDUSTRIAL BRANCHES (1)	AVERAGE VOLUME OF ALL INCOME PAYMENTS (millions of dollars) <sup>1</sup> 1919-34 (2)	COMPENSATION OF EMPLOYEES			ENTREPRENEURIAL INCOME PAYMENTS			PROPERTY INCOME PAYMENTS		
		Average percentage of all income payments for industry 1919-34 (3)	Total change in average percentage share from		Average percentage of all income payments for industry 1919-34 (6)	Total change in average percentage share from		Average percentage of all income payments for industry 1919-34 (9)	Total change in average percentage share from	
			1919-26 to 1927-34 (4)	1922-26 to 1927-31 (5)		1919-26 to 1927-34 (7)	1922-26 to 1927-31 (8)		1919-26 to 1927-34 (10)	1922-26 to 1927-31 (11)
1 Agriculture	6,609	16.3	-1.8	0.0	77.7	+0.4	-0.1	6.0	+1.3	+0.1
2 Mining	1,780	84.1	-4.0	-3.4	1.4	-0.1	-0.2	14.5	+4.2	+3.6
3 Manufacturing	13,960	83.9	-2.9	-3.0	2.3	-0.7	-0.5	13.7	+3.6	+3.6
4 Construction	2,133	80.6	-2.0	+2.9	17.1	+0.8	-3.8	2.3	+1.2	+0.9
5 Transportation and other public utilities	6,535	72.9	-10.5	-6.2	0.1	0.0	0.0	27.0	+10.6	+6.3
a Electric light and power and manufactured gas	981	42.5	-14.0	-8.9	0.3	-0.4	-0.2	57.2	+14.4	+9.1
b Steam railroads, Pullman and express	3,712	78.7	-5.6	-3.7	0.0	0.0	0.0	21.3	+5.6	+3.7
c Pipe lines, street railways and water transportation	1,154	80.2	-3.1	-1.4	0.4	-0.1	+0.1	19.4	+3.2	+1.3
d Communication	688	77.2	-6.5	-2.2	0.0	0.0	0.0	22.8	+6.5	+2.2
6 Trade	8,728	71.2	+1.9	+0.9	24.1	-2.1	-1.7	4.8	0.0	+0.7
7 Finance	7,157	31.6	+7.3	+5.1	42.3	-18.7	-14.1	26.1	+11.4	+9.0
a Banking	871	63.4	+2.8	-1.5	0.0	0.0	0.0	36.6	-2.8	+1.5
b Insurance	924	104.3	-1.4	-2.0	0.0	0.0	0.0	-4.3	+1.4	+2.0
c Real Estate	5,362	13.7	+2.9	+3.3	56.1	-20.8	-15.7	30.2	+18.0	+12.5
8 Government	6,525	77.5	+3.5	+3.5	0.0	0.0	0.0	22.5	-3.5	-3.5
9 Service	8,259	98.4	-0.5	-0.5	1	-	-	1.6	+0.5	+0.5
10 Miscellaneous	2,588	90.7	+0.4	-0.8	1	-	-	9.3	-0.4	+0.8
Total	64,274	69.8	+1.6	+0.5	17.0	-4.8	-3.0	13.2	+3.3	+2.5

<sup>1</sup>Included with compensation of employees.

country as a whole rose slightly, appears to have sustained a significant decline in a preponderant majority of the industrial categories. Indeed, if we include the subdivisions of public utility and finance, it declined in nine of the fifteen industrial branches distinguished, and rose in only three (trade, government and real estate).

As distinct from the share of employees' compensation, that of entrepreneurial income showed a marked decline, when taken as a percentage of the nation's income payments. The same tendency is observable in Table 5 when the relative proportion of entrepreneurial income is followed within the various industrial divisions. If we include the subdivisions, there are eight industrial branches in which unincorporated enterprises are significant and in which entrepreneurial incomes can be segregated. Of these eight, there is a decline in the relative share of entrepreneurial income in five, and a distinct rise in none. However, in agriculture, the industry that constitutes the most important source of entrepreneurial withdrawals, the share of these withdrawals in total income payments showed no definite decline; indeed, in three of the four sets of periods compared it rose. Obviously, for entrepreneurial incomes as

for employees' compensation, the movement in the relative share of the nation's aggregate income payments has been considerably affected by the shift in the relative position of the various industrial branches.

The upward movement in the percentage share of property income occurred in most of the industrial branches distinguished in Table 5. It occurred in as many as twelve of the fifteen; in two, banking and miscellaneous, the general direction of the movement is not quite clear; and in only one, government, does it show a definite downward movement over the period. This evidence of Table 5 does not necessarily mean that the shift in the relative importance of various industries has not contributed to the rising tendency observed in the relative share of property income in the nation's total income payments. But it does indicate that this upward movement would have appeared even had the relative share of each industrial branch remained constant.

The analysis may be pushed to the point of actual measurement of the extent to which the movements in the relative shares of various types of payment in the total have been affected, on the one hand, by changes within the in-

TABLE 6  
CHANGE IN PERCENTAGE SHARE OF VARIOUS TYPES OF PAYMENT IN AGGREGATE INCOME PAYMENTS TO INDIVIDUALS  
TOTAL AND RESULTING FROM INTRA-INDUSTRY SHIFTS IN TYPES OF PAYMENT AND INTER-INDUSTRY SHIFTS IN TOTAL PAYMENTS

TYPE OF PAYMENT	AVERAGE PERCENT- AGE SHARE 1919-34	TOTAL CHANGE IN AVERAGE PERCENTAGE SHARE FROM				CHANGE PER YEAR IN AVERAGE PERCENTAGE SHARE FROM			
		1919-26 to 1927-34	1920-26 to 1927-33	1921-26 to 1927-32	1922-26 to 1927-31	1919-26 to 1927-34	1920-26 to 1927-33	1921-26 to 1927-32	1922-26 to 1927-31
<i>Compensation of Employees</i>									
Total (inter- and intra- industry change combined)	69.8	+1.6	+1.1	+0.9	+0.5	+0.2	+0.2	+0.2	+0.1
Due to intra-industry shifts only	69.7	-0.8	-0.8	-0.6	-0.5	-0.1	-0.1	-0.1	-0.1
Due to inter-industry shifts only	69.8	+2.4	+1.9	+1.5	+1.1	+0.3	+0.3	+0.2	+0.2
<i>Entrepreneurial Income Payments</i>									
Total (inter- and intra- industry change combined)	17.1	-4.8	-4.3	-3.7	-3.0	-0.6	-0.6	-0.6	-0.6
Due to intra-industry shifts only	17.1	-2.1	-2.1	-2.1	-1.8	-0.3	-0.3	-0.4	-0.4
Due to inter-industry shifts only	17.0	-2.7	-2.2	-1.6	-1.1	-0.3	-0.3	-0.3	-0.2
<i>Property Income Payments</i>									
Total (inter- and intra- industry change combined)	13.2	+3.3	+3.3	+3.0	+2.5	+0.4	+0.5	+0.5	+0.5
Due to intra-industry shifts only	13.2	+2.9	+2.9	+2.6	+2.3	+0.4	+0.4	+0.4	+0.5
Due to inter-industry shifts only	13.3	+0.4	+0.3	+0.2	+0.2	0.0	0.0	0.0	0.0

dustrial branches (intra-industry shifts), and, on the other hand, by changes in the relative weight of the various industries (inter-industry shifts). If we take the relative shares of each type of payment within each industrial branch, weight them by the *constant* average volume of payments originating in each industrial branch, add the products for each type of payment separately, and obtain the percentage of these sums (one for each type of payment) to the nation's total of individuals' incomes (average volume for the period), these percentages will represent the annual distribution of total income payments affected by *intra-industry* shifts only. If, on the other hand, we take for each industrial branch the varying annual volume for all income payments, apply to these volumes a *constant* percentage of each type of payment (average percentage for 1919-34), add the products for each type of payment separately, and obtain percentages of each sum to the national total, these percentages will represent the percentage distribution of aggregate income payments by type of payment, affected by *inter-industry* shifts only. Such series have been computed and are presented graphically in Chart 4. For each we obtained measures of the movement over the period as a whole. These measures, together with

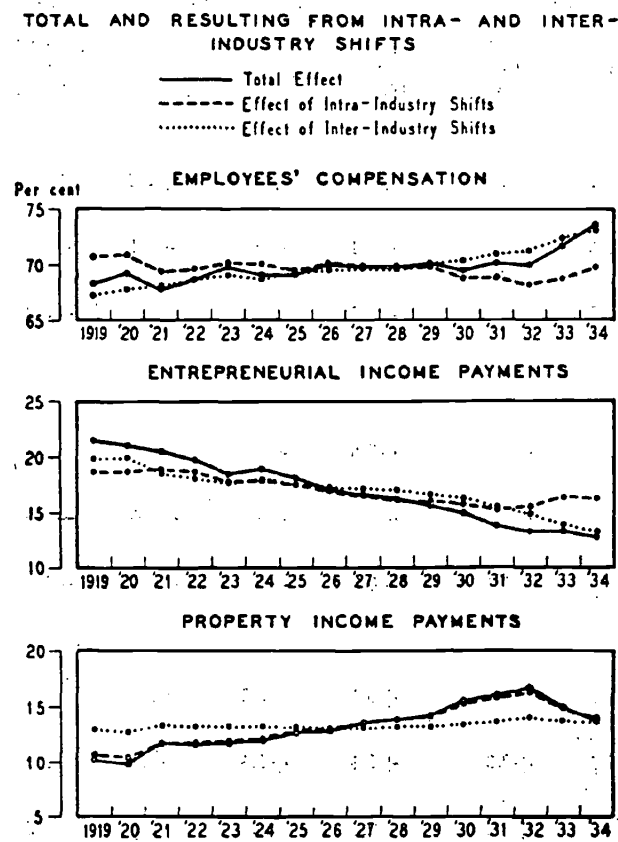
those obtained for the percentages shown in Table 4, are brought together in Table 6. The measures are given for all the sets of periods compared; and include not only the total change from the average of one period to the average of the other period, but also the same changes reduced to a per year basis.

Table 6 shows in a strikingly clear fashion the effects of the two sets of factors on the movements over the period in the relative share of various types of payment. The slight rise in the relative weight of employees' compensation in the national total is seen to be due exclusively to the shift among various industries, i.e., to a net relative gain in the weight of those industrial divisions in which the share of employees' compensation is high. The intra-industrial shift in the relative share of employees' compensation is, on the contrary, distinctly downward. In the general contraction of the relative share of entrepreneurial income the inter- and intra-industrial shifts both exercised effects in the same direction and were almost equally important. The rise of the relative share of property income is also due both to its rise within the various industries and to the shift among industries; but the inter-industrial shifts have in this case exercised less effect.

These conclusions shed light on the changes during the post-War years in the functional and industrial structure of income in this country. The finding with reference to the movement of the share of employees' compensation appears especially significant. It suggests a considerable shift in the distribution of employment and service income among groups attached to various industrial branches, a situation completely concealed by the stability of the relative share of this type of payment when expressed as a percentage of the national total. Obviously such a shift in the composition of employees' compensation, if accompanied by immobility of employment and income among the various industrial groups, might lead to serious problems of social adjustment.

It must again be noted that the shifts observed are in terms of the shares of aggregate income payments measured in dollars of varying purchasing power. If there are any differential changes in prices among goods purchased by the various types of income recipient, and if these differential movements are associated with the changes in the relative shares, the conclusions in terms of the distribution of purchasing power would, of course, be other than those suggested by Tables 5 and 6.

Chart 4  
PERCENTAGE DISTRIBUTION OF AGGREGATE INCOME PAYMENTS AMONG MAJOR TYPES OF PAYMENT, 1919-1934



STUDIES IN INCOME AND WEALTH, VOLUME I, BY THE CONFERENCE ON RESEARCH IN NATIONAL INCOME AND WEALTH

The Conference on Research in National Income and Wealth was organized in 1936 with the aim of stimulating cooperative research in the fields of income and wealth,

securing agreement upon the most appropriate concepts and classifications, and directing attention to those segments of the field that demand more primary data or more analytical study. In partial fulfillment of this program, the Conference arranged in 1936 for a series of reports that would deal with the various problems in the field and clear the way either for agreement or for more intensive exploration of the issues. Some of these reports were presented at the December 1936 meetings of the American Economic and the American Statistical Associations; others at the meeting of the Conference proper at the end of January 1937.

At this meeting the Conference recommended the publication of the reports and of the discussion to which they gave rise, subject to review by an editorial committee. This editorial committee (Simon Kuznets, Chairman; Morris A. Copeland and Arthur W. Marget) has reviewed the reports, which were edited by Milton Friedman. They were then submitted as Volume I of the Conference Studies in Income and Wealth for the consideration of the research staff and the Directors of the National Bureau of Economic Research. Their approval now appears assured and the volume will be released probably by the end of October as a publication of the National Bureau (320 pp., \$2.50).

The table of contents, indicating the range of topics discussed in the volume, follows.

## Foreword

## Part

- I Concepts of National Income, M. A. Copeland  
Discussion: Simon Kuznets  
Clark Warburton  
M. A. Copeland
- II Accounting Methodology in Measurements of National Income, Clark Warburton
- III On the Treatment of Corporate Savings in the Measurement of National Income, Solomon Fabricant
- IV Changing Inventory Valuations and Their Effect on Business Savings and on National Income Produced, Simon Kuznets  
Discussion: M. A. Copeland  
A. W. Marget  
Milton Friedman  
Simon Kuznets
- V Public Revenue and Public Expenditure in National Income, Gerhard Colm  
Discussion: J. M. Clark  
Mabel Newcomer  
Simon Kuznets  
Gerhard Colm
- VI The Distinction between 'Net' and 'Gross' in Income Taxation, Carl Shoup

Discussion: Roy Blough  
W. W. Hewett  
Carl Shoup

- VII Some Problems in Measuring Per Capita Labor Income, Solomon Kuznets
- VIII Income Parity for Agriculture, O. C. Stine  
Discussion: M. R. Benedict  
J. D. Black  
O. C. Stine

## NATIONAL BUREAU PROJECTS

*Bulletin* subscribers received a reprint of *A Program of Financial Research*, Volume I, in *Bulletin* 64. Volume II, an inventory of current projects in the field of banking and finance, was published in July (253 pp., \$1.50). Volume I was shown in an exhibition of Trade Books by the New York Book Clinic, under the auspices of the American Institute of Graphic Arts, in June, and Volume II was in its July selection of books notable for excellence of typography. We quote from an editorial in the June 1 issue of the *Journal of Commerce*:

## "A New Study of Banking

The Reserve City Bankers' Association, in several ways the most important and influential body of bankers in the country, has taken a very constructive step in sponsoring a comprehensive study of the nation's existing financial system. The far-reaching and profound changes of the depression and recovery periods have come in such rapid succession that few persons have been in position to weigh their full import and significance. Such a research program as the Reserve City Bankers contemplates should furnish a much-needed basis for the evolution of legislative policies and the more intelligent guidance of those who are interested in any way, directly or indirectly, in banking.

At the same time, it is exceedingly important that this research project avoid the serious pitfalls into which several other very ambitious programs of the kind have fallen. The mere gathering of statistical material would be a futile gesture. It is to be hoped that this study will avoid the sterile kind of research which concludes that because credit expanded over a period of years by a given average percentage, that a further increase at that rate would not be "unsound." One study of banking during the post-war decade consisted largely of this type of sterile reasoning, and as a result its value as a contribution to a solution of pressing banking problems proved nil.

Whereas in Canada the practice is followed of having a decennial revision of the Bank Act to bring it up to date and eliminate any weaknesses that have become apparent, banking law in this country has evolved quite haphazardly. As a result, there is urgent need for a codification of statutes and the simplification of our whole system of regulation and examination. The study of the Reserve City Bankers'



Association, under the direction of the National Bureau of Economic Research, will furnish an opportunity to lay the groundwork for this essential task also, as well as for the determination of broader lines of banking policy."

Funds are now being raised and it is hoped that plans for specific projects may soon be announced.

*Prices in Recession and Recovery*, by Frederick C. Mills (561 pp., \$4.00) was also included in the New York Book Clinic exhibition and was among the books recommended in January by the Book-of-the-Month Club. The current issue of the *Journal of the American Statistical Association* says:

"The latest volume written by Professor Mills adds new and valuable data to the store of knowledge to which he has already contributed rich findings. The survey of price data through a peculiarly interesting period in American economic life cannot be ignored by any serious student in the field and will be of immense value to all those working on this type of problem.

The material contained in the book is many-sided and various. The chapter headings give some indication of the scope of the work, but, to gain a more exact impression, it would be necessary to consider the very suggestive subheadings to know the nature of the analysis. The first major division covers the pre-recession situation, recession and depression, and recovery. The angle of approach shifts then to take up in somewhat more detail the special aspects of the recovery of prices, including the fortunes of primary producers, manufacturing industries, manufactured goods and raw material, capital equipment, consumers' goods, and increasing productivity.

A long statistical appendix and many exhibits included in the text at various points give relatives and indices of such importance that they would have sufficed to justify the work involved without the interesting commentary and comparisons made by Professor Mills.

Professor Mills has done a real service in giving us not only a new store of facts but also in putting his ideas and interpretations before us."

*Ebb and Flow in Trade Unionism*, by Leo Wolman (251 pp., \$2.50)

"Dr. Wolman's book is a sequel to his *Growth of American Trade Unionism, 1880-1923*, and well maintains the high standard set by his previous writings. . . . His discussion is admirably impartial." *Economist* (London), January 23, 1937.

"This study by Dr. Wolman provides a handbook of information on trade union membership in the United

States. An analysis of the rise or decline in total membership in successive periods during the years 1897 to 1935 is followed by a description of changes in unionized fields of activity, and by an attempt to measure the extent of unionization in different occupations and trades. A series of appendices present data showing the membership of individual unions, the percentage represented by union membership in the principal industrial groups, a reclassification of census figures to indicate the distribution of the working population among the various occupations, and trade union memberships in selected foreign countries." *Conference Board Bulletin*, November 2, 1936.

The National Bureau of Economic Research was organized in 1920 in response to a growing demand for scientific determination and impartial interpretation of facts bearing upon economic and social problems. Freedom from bias is sought by the constitution of its Board of Directors without whose approval no report may be published. Rigid provisions guard the National Bureau from becoming a source of profit to its members, directors or officers, or from becoming an agency for propaganda.

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