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II TOTAL NATIONAL PRODUCT

1 THE TOTALS AND THEIR CHANGES

THE gross and net national product for this country since 1919, evaluated at the current market prices of each year, are given in the first and third columns of Table 1 (see also Chart 1). To repeat the three definitions, net national product or national income represents the value of all commodities and services produced during the year reduced by the current market value of all commodities consumed in the process of production; or the sum of all current income payments to individuals plus the net savings of business and other enterprises; or the sum of market values of all commodities and services consumed by individuals, plus individuals savings, plus net savings of business and other enterprises. Gross national product is defined similarly except that it includes also the value of durable capital goods consumed in the process of production, and correspondingly includes gross savings of enterprises rather than net.

Thus defined and measured in current market values, the national product of the United States has changed markedly since the World War. From a trough in 1921 of 66.1 billion dollars, which followed immediately a peak in 1920 of 82.8 billion, gross national product rose to the next peak, in 1929, of 93.6 billion. The contraction that followed

Table 1

NATIONAL INCOME AND GROSS NATIONAL PRODUCT, 1919–1935[1]

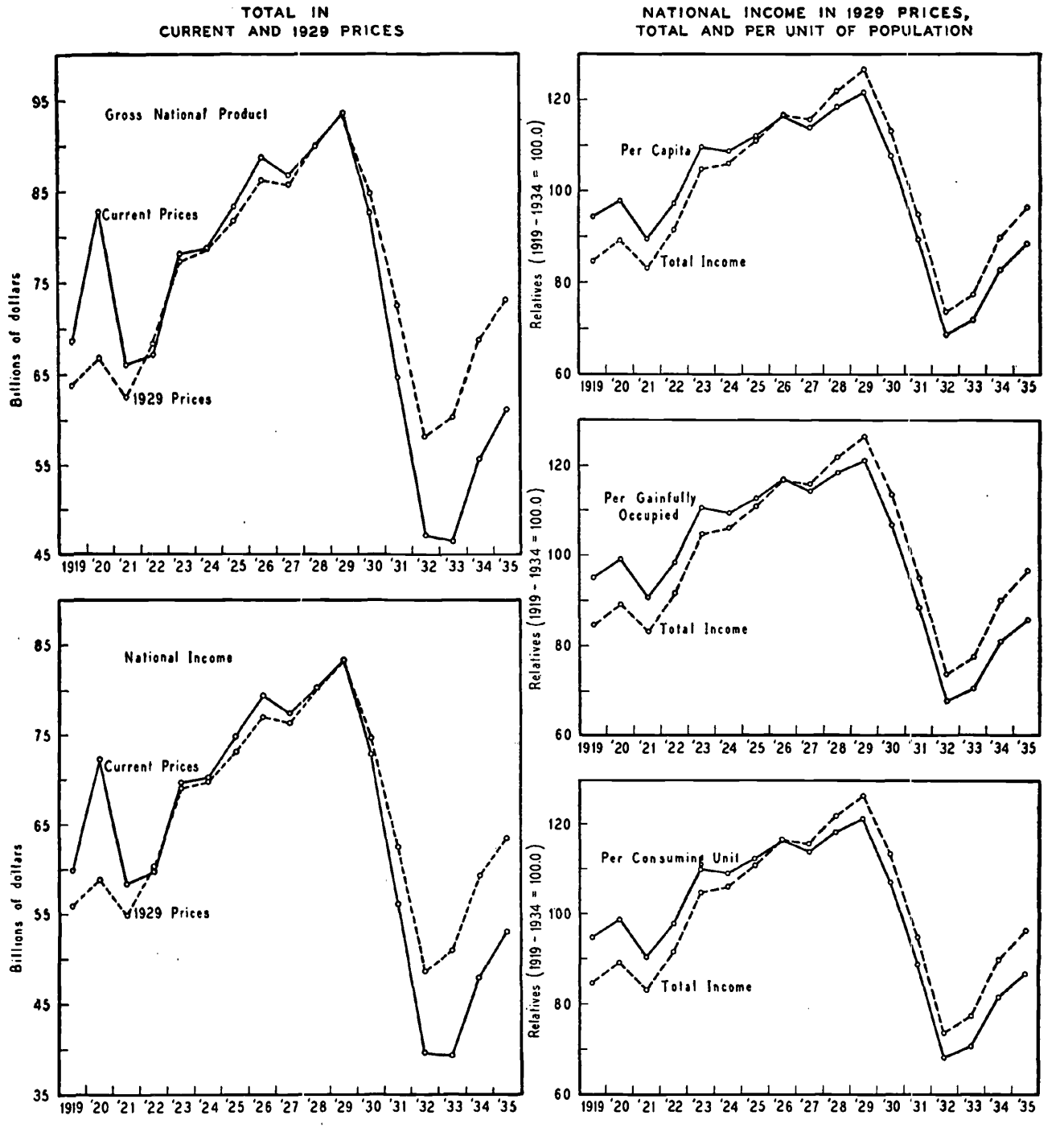
YEAR	GROSS NATIONAL PRODUCT		NET NATIONAL PRODUCT OR NATIONAL INCOME		NATIONAL INCOME IN 1929 PRICES PER		
	CURRENT PRICES	1929 PRICES	CURRENT PRICES	1929 PRICES	CAPITA	GAINFULLY OCCUPIED	CONSUMING UNIT
	(millions of dollars)		(millions of dollars)		(dollars)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1919	68,750	63,975	59,926	55,846	533	1,345	749
1920	82,836	66,888	72,386	58,759	553	1,405	778
1921	66,148	62,550	58,343	54,754	507	1,284	712
1922	67,186	68,482	59,706	60,310	549	1,395	771
1923	78,214	77,411	69,706	69,080	619	1,568	868
1924	78,791	78,272	70,369	69,868	615	1,552	861
1925	83,413	81,827	74,846	73,097	633	1,598	887
1926	88,780	86,363	79,477	76,939	657	1,657	919
1927	86,778	85,790	77,429	76,349	644	1,619	899
1928	90,053	90,168	80,397	80,352	669	1,679	933
1929	93,640	93,623	83,424	83,407	687	1,717	956
1930	82,723	84,872	72,940	74,646	608	1,513	844
1931	64,751	72,649	56,010	62,539	505	1,253	700
1932	47,202	58,256	39,628	48,560	389	961	537
1933	46,538	60,482	39,283	50,998	406	998	559
1934	55,765	68,924	47,849	59,272	468	1,146	644
1935	61,243	73,281	53,035	63,502	499	1,213	684
Average I 1919–1934	73,848	75,033	65,107	65,924	565	1,418	789
Average II 1919–1926	76,765	73,221	68,095	64,832	583	1,476	818
Average III 1927–1934	70,931	76,846	62,120	67,015	547	1,361	759
Percentage change from Average II to Average III	−7.6	+5.0	−8.8	+3.4	−6.2	−7.8	−7.2

[1] The estimates of gross and net national product for 1935 in this and subsequent tables rest upon a much more slender foundation than the measures for the earlier years (for the basis of the estimates for 1935 see the discussion in Appendix A). For this reason the averages for the period or parts of the period often exclude the figure for 1935.

The estimates of national income differ slightly from those shown in Table 1, *Bulletin 66* (September 27, 1937) because of minor revisions in the volume of net capital formation and a change in the technique of adjusting for price changes.

Chart 1

NATIONAL PRODUCT, 1919-1935



was severe; gross national product fell 50 per cent to a trough of 46.5 billion dollars in 1933. It has since risen materially, but in 1935 was still 35 per cent below the 1929 level.

Net national product or national income differs from gross national product in that it excludes the estimated consumption of durable capital goods. The annual volume of this consumption, which averaged about 9 billion dollars during the period, is measured largely by depreciation and depletion charges;[5] and the durable capital goods to which the charges refer include all capital equipment owned by business enterprises, whether corporate or individual, and by governmental agencies. They also include all real estate, whether residential or business, and whether owned by corporations or individuals.

The estimated consumption of durable capital

[5] Fire and marine losses are also included but the item is negligible compared with depreciation and depletion charges.

goods is far more stable than the sum of the other components of gross national product. Consequently, its deduction renders national income a more variable total than gross national product. Thus national income rose from a trough of 58.3 billion in 1921 to a peak of 83.4 billion in 1929, an increase of 43 per cent compared with an increase of 42 per cent in gross national product. National income declined from a peak of 83.4 billion in 1929 to a trough of 39.3 billion in 1933, a drop of 53 per cent compared with a drop of only 50 per cent in gross national product. In 1935 national income was 35 per cent higher than in 1933, gross national product 32 per cent higher.

These marked fluctuations in the national product do not reflect changes in the volume of commodities and services produced alone. They reflect also changes in market values from year to year. Some attempt to eliminate the latter was made in order to interpret the national product totals in terms of the changing flow of goods and services (see the second and fourth columns of Table 1, national product measured in 1929 prices). This adjustment to constant price levels 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 governmental agencies, the net accretion to the volume of residential buildings, and the net change in claims against foreign countries. This measure of net capital formation, representing the share of national income used each year for investment rather than for consumers' goods, was available for each year in terms of both current market values and 1929 prices. We obtained also measures of the value, in both current and 1929 prices, of passenger cars reaching the hands of their final users. We then subtracted from national income in current prices: (a) net capital formation in current prices; (b) value of passenger cars in current prices; and obtained (c) consumers' outlay, exclusive of that for passenger cars. The residue under (c) was adjusted for changes in prices of consumption goods, on the assumption that they were reflected in the index of wage earners' cost of living compiled by the United States Bureau of Labor Statistics; then the adjusted residue (c^1) was recombined with (b^1) value of passenger cars in 1929 prices and (a^1) net capital formation in 1929 prices. The result was an estimate of national income in 1929 prices. The addition to it of the value of durable capital goods consumed in the process of production, measured in 1929 prices, yielded a measure of gross national product in 1929 prices.[6]

This adjustment for changes in price level is admittedly approximate, partly because the wage earners' cost of living index reflects only crudely changes in prices of all consumable commodities and services represented in the national product totals; and partly because the measurement of net capital formation and of the value of passenger cars in constant prices is necessarily approximate, owing to the relative scarcity of reliable indexes of durable goods prices. Nevertheless, national product in 1929 prices is a much better measure of changes in the volume of commodities and services produced than is national product in current market values. In comparing the two sets of 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 in gross national product from the average during 1919–21 to 1929 was, in current prices, 29 per cent; in 1929 prices, 45 per cent. Similarly, national income rose 31 per cent in current prices and 48 per cent in 1929 prices. The decline from 1929 to 1933 in gross national product in current prices was 50 per cent; in 1929 prices only 35 per cent. Similar percentages for national income were 53 and 39, respectively. And when the arithmetic means of the two halves of the period 1919–34 are compared, gross national product in current prices declined from 76.8 to 70.9 billion dollars, national income from 68.1 to 62.1 billion; in 1929 prices the former rose from 73.2 to 76.8 billion, the latter from 64.8 to 67.0 billion.

2 COMPARISON WITH POPULATION CHANGES

Since a preponderant part of the national product is imputable to the efforts of individuals who participate in the productive process, and a very large part becomes available for consumption by the individuals of whom the nation is composed, we compare changes in the national product with

[6] The measures of the value in 1929 prices of durable capital goods consumed were provided by Mr. Fabricant, as were all the other measures of capital consumption. For the estimates of net capital formation see Section VIII below. The choice of 1929 prices as the constant price level in which to express national product was dictated by its corresponding use in the capital formation study. However, since the 1929 price level was only slightly below the 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.

changes in the number of persons to whom it is so closely related. This comparison is most significant when net national product or national income in constant prices is used, since national income offers a closer approximation than does gross national product to that part of the national product that is imputable to efforts of individuals; and since national income in constant prices offers a better approximation to the changing volume of commodities and services than does national income in fluctuating current prices.

In comparing changes in total income with those in the number of individuals, two questions may be raised: (a) what has been the net product per individual available for participation in the productive process? In other words, have the changes in the command over goods and services represented by national income been associated only with those in the number of individuals available for participation in the productive process, or also with other factors? (b) How have the changes in national income, representing the flow of goods and services available for consumption, compared with changes in the number of individuals who make up the community of consumers?

Both questions are answered roughly by a comparison of changes in national income with changes in total population and the computation of per capita income (Table 1, column 5). The rise in net national product from 1921 to 1929 and the decline after 1929 were accompanied by an increase in population; consequently per capita income rose appreciably less and declined more than did total income. Thus, while the latter rose from 54.8 billion dollars in 1921 to 83.4 billion in 1929, or 52 per cent, per capita income rose from $507 to $687, only 36 per cent. The declines from 1929 to 1932 were 42 and 43 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 becomes a decline.

However, changes in total population are but a crude approximation to the changes that may have occurred in the number of individuals available for direct participation in the productive process; or in the number of equivalent consuming units in the nation. Certain age and sex groups are, for obvious reasons, not capable of participating in production; and a child is not the equivalent of an adult with respect to consumption demands. We have, therefore, obtained estimates that measure more directly the number of producing and consuming units in the nation. To represent the former the number of people gainfully occupied was taken; for the latter we have utilized the age and sex distribution of the population for each year in the period to convert total population to the number of consuming units.[7]

The gainfully occupied group is composed of those members of the total population who ordinarily are engaged in pursuits whose product is included in national income or in gross national product. It thus covers not only persons who work for a monetary return but also farmers and other workers who may be compensated in kind, and it includes them whether or not they happen to be employed at the given point of time. The 'consuming unit' is the result of a statistical device by which the differences in needs for food, clothing, shelter, transportation, etc., of various age and sex groups in the population are roughly taken into account. Persons in certain age and sex groups, specifically adult males between twenty and thirty-four years old, are considered full bodied consumers, and each is taken to represent a complete consuming unit. The members of younger and older age groups, whose needs are naturally not as great as those of an adult male during the working period of his life, are each assigned a fractional value designed to indicate the magnitude of their needs as consumers as compared with that of the full consuming unit. Obviously, in determining the size of the gainfully occupied group or of the consuming unit equivalent of population, the adult groups, especially the male, have considerably greater weight than the age groups under eighteen.

Because of the growing proportion of adult groups in the total population, both the number gainfully occupied and the number of consuming units increased more rapidly than the total population; consequently, when national income is computed per gainfully occupied or per consuming unit, the movement in these per unit figures is algebraically smaller than in per capita income. Thus while per capita income rose from $507 in 1921 to $687 in 1929, or 36 per cent, both the income per person gainfully occupied and that per consuming unit rose 34 per cent; the declines from 1929 to 1932 were 43 per cent in per capita income; in the other two, 44 per cent. The differences be-

[7] For the annual estimates of the number of gainfully occupied we are indebted to Daniel Carson of the National Research Project on Reemployment Opportunities and Recent Changes in Industrial Techniques; for the estimates of the age and sex distribution of the population we are indebted to W. S. Thompson and P. K. Whelpton of the Scripps Foundation, Miami, Ohio. The consuming equivalents for each age and sex group are those given in their monograph, *Population Trends in the United States* (McGraw-Hill, 1933), p. 169.

tween the changes in the average per capita income for the two halves of the post-War period and the corresponding changes in the average income per gainfully occupied and per consuming unit are similarly small, but significant.

III DISTRIBUTION ACCORDING TO INDUSTRIAL ORIGIN

1 MEANING OF CLASSIFICATION

THE distribution of the national product according to industrial origin reveals in which industries the net and gross supply of commodities and services are produced. Tables 2 and 3 indicate, in dollar volumes and in percentages of the total, the amounts the various branches of the productive system contribute to gross and net national product. But the procedure by which these estimates have been obtained allows also the apportionment of income payments to individuals by the industrial characteristics of the enterprises making them. Accordingly, Table 4 gives the distribution of aggregate income payments to individuals by industrial sources.

The industrial divisions distinguished in Tables 2, 3 and 4 call for little explanation. Construction refers to contract construction alone, and does not include income originating in construction activities undertaken by business enterprises and public agencies on their own account. The transportation and other public utilities group includes throughout the following subdivisions: (a) electric light and power and manufactured gas; (b) steam railroads, Pullman and express; (c) other transportation, including pipe lines, street railways and water transportation; (d) communication, including telephone and telegraph.[8] Trade covers both the wholesale and retail branches of distribution. The finance group covers: (a) commercial banking; (b) insurance, both life and other; (c) real estate. Real estate includes, in addition to income arising from management and handling of real estate units by corporations especially engaged in that field, all net rents to individuals owning real estate, whether in cash received by individual owners from tenants or imputed to owners of non-farm residential units who reside on their property.[9] 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, and brokerage houses.

The estimates in Table 3 were obtained by adding to income payments to individuals made by enterprises in each industrial division the net savings of these enterprises. But to get an adequate measure of business savings the available data from accounting records on business profit and loss after payment of dividends must be adjusted in several ways; and some of the adjustments can be made only for the national income total as a whole or for the major industrial divisions.[10] 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 divisions. For this reason, Table 3 includes an item of net business savings that is uncorrected for the disparity between depreciation and depletion charges at book value and at reproduction prices; and the total (line 11) differs in that respect from national income in current prices as shown in Table 1. However, this adjustment is relatively minor, and the effect of its omission on the distribution by industrial sources is insignificant.

The measures in Table 2 were obtained by adding to those in Table 3 the estimated volume of fixed capital consumption; and since most of the measures in Table 3 assume that depreciation and

[8] Estimates of national income and its elements originating in these subdivisions, as well as in the subdivisions of the finance group listed below, are given in Appendix Tables I and II.

[9] In the distribution by type of income rents appear as a separate type. But since rents cannot be apportioned by the industrial characteristics of the enterprises that pay them, they have to be treated in the industrial classification as entrepreneurial income payments in the real estate industry.

[10] For a more detailed discussion of these adjustments see Section IV.