

# AMERICA'S CAPACITY TO CONSUME

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**AMERICA'S CAPACITY  
TO CONSUME**

# AMERICA'S CAPACITY TO CONSUME

BY

MAURICE LEVEN  
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AND

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WASHINGTON, D.C.

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1934

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## DIRECTOR'S PREFACE

This volume is the second in a series of four growing out of a study of the *Distribution of Wealth and Income in Relation to Economic Progress* which is being conducted with funds granted by the Maurice and Laura Falk Foundation of Pittsburgh. This volume and the two which follow are prepared under the immediate direction of Harold G. Moulton.

The scope of this book and its relation to the others of the series are fully described in the Foreword. Something should be said here, however, as to the division of responsibility among the authors. Mr. Leven is responsible for Appendix A and is joint author of Part I, dealing with the income of the American people, and also of Chapter IX. Mr. Warburton is responsible for Appendix B and is joint author of Chapters VI, VII, VIII, and X. Mr. Moulton is largely responsible for the form of organization and style of exposition of the volume as a whole, collaborating with the other authors in their respective chapters, but being primarily responsible for the Foreword and Chapters IX and XI.

Charles O. Hardy served on the committee which co-operated with the authors in the preparation of this volume.

E. G. NOURSE  
*Director*

Institute of Economics  
August 1934

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## FOREWORD: THE LARGER STUDY

This is the second of four volumes devoted to an analysis of the relation of the distribution of national wealth and income to economic progress. The purpose of the investigation as a whole is to determine whether the existing distribution of income in the United States among various groups in society tends to impede the efficient functioning of the economic system.

The hypothesis has frequently been advanced that the small incomes received by the masses of the population provide in the aggregate so meager a purchasing power for the potential output of our productive establishment as to be a potent source of economic difficulties. Such a conclusion is not unnaturally suggested by the fact that even in good times some of our plant capacity and labor force is idle, while in periods of acute disturbance a substantial part of our productive capacity stands unutilized, resulting in a simultaneous great restriction of consumption—the familiar “want amid plenty.”

In the light of this situation we find people asking the question: If a larger percentage of our annual income were somehow made available to the purchasers of consumptive goods, would not business managers find it profitable to utilize existing capital equipment more fully, thereby giving to the masses of people higher standards of living, and at the same time promoting a steadier and more rapid rate of economic progress? This thought, moreover, evidently underlies certain phases of the policy now being pursued by the federal government.

In endeavoring to throw light upon the great prob-

lem with which we are here concerned, we have divided this investigation into four major parts. In the first volume, entitled *America's Capacity to Produce*, we attempted to get an objective and comprehensive picture of our economic society as a producing mechanism. Specifically, we asked—How great was the unused productive capacity in the United States during the boom period of the late 1920's? and, was the degree of non-utilization increasing over the three decades from 1900 to 1930?

The conclusions reached may be briefly summarized as follows: The phenomenon of idle productive capacity is not something that appeared for the first time in the years just preceding the collapse of 1929. On the contrary, a considerable amount of unutilized capacity existed throughout the period under review. However, with the exception of transportation and a few other special lines, we found in general no persistent increase in the percentage of unutilized capacity. At the height of the boom period the amount of idle capacity, expressed in terms of a generalized figure, was something like 20 per cent. In periods of depression this percentage is, of course, very greatly increased—rising as high as 50 per cent in the current depression.

In this second volume we turn to the flow of income arising out of our productive operations. It is this income which determines the capacity of the people to purchase the consumption goods which are annually produced, and also to provide the savings which are essential to the formation of new capital. The scope of our analysis is thus considerably wider than is suggested by the convenient title which we have given the volume.

The investigation and analysis divides itself into three parts, as follows: In Part I we show first the amount of

the national income resulting from the productive activities of society and its increase during the first three decades of the twentieth century. We then show the division of the aggregate realized income among the various claimants, such as wage earners and investors. Following this we trace its division among individual and family groups, classified by the relative amounts of income received. Finally, we reveal the geographic distribution of this income, showing separately that of the farm and the non-farm population.

In Part II we consider how those who receive the national income dispose of it. We show the allocation of expenditures among the major types of consumers' goods, and also the amount and character of American consumption as a whole. We then indicate how the amount of income that is spent by the several income groups compares with the amount which is saved, and the bearing of this upon the division of the aggregate income as between spending and saving. Finally, we inquire whether, during the period from 1900 to 1930, there was any tendency for the proportion of the aggregate income of individuals that is set aside as savings to increase relatively to the amount which is spent for consumption purposes.

In Part III, entitled *The Relation of Consumption and Production*, our findings are related in a broad general way to the conclusions reached in the preceding volume. We indicate the extent to which the magnitude and character of the demand for consumption goods would be modified by comparatively slight increases in the purchasing power of the lower income groups and compare these consumptive potentialities with the existing productive capacity of the nation. We consider finally the bearing of our analysis upon certain important cur-

rent issues, such as the fear of persistent over-production and consequent demands for restriction of output, the amount of leisure that is compatible with high standards of living, and the necessary length of the working day.

We have endeavored to present the results of a comprehensive and difficult statistical investigation of the national income and its expenditure in as succinct and graphic a form as possible. The reader should realize that the results which are shown in the tables and charts are in some instances rough estimates; but we believe that they reveal with substantial accuracy the true situation. The methods used in compiling the elaborate statistical data, on which the various charts and summary tables are based, and some of the underlying tabulations themselves, will be found in the appendixes at the end of this volume.

As in the preceding volume, we confine our analysis to the first three decades of the present century. We do this deliberately because we are concerned with fundamental trends during an era of general expansion, and we do not wish, for the moment, to distract the reader's attention from the primary purpose of the analysis by showing also the trends during the depression in which everyone has been so acutely interested. The extent to which the fundamental trends and conditions revealed have been modified since 1930 is another story, requiring separate analysis.

These two volumes advance us materially toward an understanding of the modern economic system; but they do not provide a conclusive answer as to the source of our economic difficulties. We have still, in the third volume, to consider the relation of our pecuniary or financial system to the fundamental hypothesis in which



## FOREWORD

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we are interested. We shall there analyze what is involved in converting nominal monetary savings into actual additions to capital equipment; the connection between expanding consumptive expenditures and the creation of capital goods in a pecuniarily organized society; and the part which financial institutions and governments play in the process of capital formation under modern conditions.

In the fourth volume we shall bring together the various segments of our investigation for purposes of integration and interpretation with a view to indicating ways and means of bringing about a more effectively functioning economic system.

**PART I**  
**THE INCOME OF THE AMERICAN PEOPLE**

## CHAPTER I

### WHAT IS NATIONAL INCOME?

As already indicated, we are concerned in this division of our analysis with the income of the American people, upon which their consuming capacity directly depends. As a preliminary to a study of the growth and the distribution of national income a few words of explanation are necessary as to the relation of income to production and the meaning of the term "income" as used in different chapters of our analysis.

Income consists, in fundamental terms, of the goods and services resulting from the productive activities of the people. We produce each year three broad classes of commodities. The first is made up of consumption goods and services which go directly for the satisfaction of human wants, such as the ordinary necessities and conveniences of life. The second consists of capital goods in the form of additions to the productive resources of society. The third represents the replacement of plant and equipment used up in the process of production. Since this third class of output merely maintains productive capacity at the existing level it is neither available for consumption, nor an *addition* to wealth; hence it is not properly income.

The national income may be defined as the *net* volume of goods and services produced by the nation within a given period—a year. It includes the value of foreign products accruing to Americans as net interest on foreign investments. Since the only common unit of measurement for goods and services of diverse character is money, we express the income of the American people in dollars.

In a primitive community practically all income is received by the inhabitants directly in the form of goods and services. But in a complex pecuniary society the great bulk of it is received, in the first instance, in the form of money, which in turn is exchanged for the goods and services which result from the productive activities of the nation. Even today, however, some portion of the national income is still received directly by individuals "in kind"—that is, without the intermediation of monetary payments. In estimating the aggregate value of the national income allowance has to be made for such commodities as food consumed on the farms where it is produced. To such income a monetary value has to be imputed.<sup>1</sup>

It should also be understood that the wages, salaries, rents, interest, and profits<sup>2</sup> received by the population as a result of productive activities in the course of a year are virtually identical with the aggregate value of the goods and services which constitute the national income. That is to say, the sums distributed to the various claimants constitute the cost of producing the national product. This money income as distributed becomes the purchasing power by means of which the people acquire the commodities which are being turned out. In short, in a pecuniary society the productive process gives rise to a flow of monetary income from production to the hands of individuals, by whom it is directed either to consumption or investment channels. This flow is illustrated graphically in the chart on page 20.

The concept of national income as the value of goods

<sup>1</sup> The same logic would involve the imputation of a value to the services of housewives and other unpaid family workers. There are, however, no adequate data on which to base estimates of the aggregate value of such services.

<sup>2</sup> Earnings retained in business as surplus are included.

and services produced within a given year is, however, complicated somewhat by the necessity of taking account of certain types of "income" which are not strictly the result of current production. Reference is made to income from durable consumers' goods, such as houses and other commodities having a life extending over several years. Although such goods were produced in preceding years the value of the satisfactions derived from their continued use in subsequent years is generally considered income. To include these satisfactions within our concept of income we must consider them as a kind of added product. In any event, it is a fact that monetary income received from such property is indistinguishable in character from that received for the rent of capital goods. Accordingly, allowance for such incomes has been made at appropriate places in our analysis.

It is also essential to distinguish between the national income, conceived as the value of the national product, and the aggregate monetary incomes received by individuals in the course of a given year. Individuals may realize income in monetary terms which is not income from a national point of view. For example, in a period of rising prices, existing properties, or claims to properties in the form of securities, may be transferred from one individual to another, and yield a profit to the seller. Such "capital gains" in some individual accounts are partly offset by losses in other individual accounts—though by no means entirely so within a given time. Similarly, in periods when values are falling, as in 1930-33, the realized aggregate monetary income of individuals may be less than the value of the national product. An increase in realized money income resulting from "capital gains" could not, of course, occur unless the additional money came from somewhere. It comes, in fact, chiefly

from bank credit expansion during the years when the values were rising.

There are other reasons why the sum of individual incomes is not identical with the national income. The national income is a net figure containing no duplications. This is not true of the aggregate of individual incomes. A given amount of national product may appear in the income accounts of two individuals within a given period. Through fraud, graft, or robbery, for instance, the income appearing in the account of one individual also appears in that of another without any addition to the national product. It cannot be said in such cases that the loser had never received the income of which he was deprived; nor can it be said that the purchasing power thus acquired by the gainer was not income to him. The same type of duplication occurs in connection with contributions and similar transfers of income among individuals where the creation of a good or service is not involved.<sup>2</sup>

From the foregoing paragraphs it appears that the income of the American people may be viewed in different ways and expressed by different totals. The particular figures which should be used depend upon the particular purpose in hand. Thus when we are interested in measuring the expansion of the national income over a period of years in relation to production, as in Chapter II, we do not include income from the use of durable consumers' goods but focus attention upon the income produced annually as the truest measure of economic progress. Nor do we include inflationary capital gains or deflationary losses which occur from time to time, for their inclusion would give a distorted picture. In later chapters, how-

<sup>2</sup> It should be stated here that in our discussion of income we do not consider psychic satisfactions unless they have a market value.

ever, where we are concerned with the realized monetary income of individuals, we take account of income from sources other than current production, including inflationary profits. The inclusion of the latter requires a word or two of explanation.

To a large extent individuals who obtain capital gains from the sale of properties or securities treat such gains as income and govern their spending and saving practices accordingly. To the extent that this is true a study of income distribution must take account of funds derived from this source.<sup>4</sup> This income constitutes a part of the general income stream and is largely indistinguishable from income derived from other sources. It must be included in the income received by individuals if we are to discuss intelligently the flow of income from individuals into consumptive and investment channels. The disposition of such funds affects the working of the economic system quite as much as does any other income.

Inasmuch as we are using "income" in somewhat different senses in different chapters, it will be of interest to know in advance the magnitude of the several totals employed. In 1929 the national income resulting directly from current production was about 81 billion dollars.<sup>5</sup> Of this amount about 80 billion was realized by individuals, and the remainder was retained as corporate surplus. The 80 billion dollars of realized income is raised at different stages of the analysis, depending upon the point under consideration, by successive additions to al-

<sup>4</sup> It is impossible to determine the extent to which such income may be regarded as capital or income by the recipients thereof. It may be noted incidentally that there is a sharp difference between the income tax laws of different countries with regard to this issue. American law, in contrast with that of Great Britain, for instance, treats capital gains as individual income.

<sup>5</sup> Including income from foreign investments.

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low for income from the use of durable consumers' goods and for profits from the sale of property. The aggregate featured in the geographic distribution is about 91.4 billion dollars and the sum of the individual incomes obtained by adding the amounts received by families and unattached individuals in the various income classes is approximately 93 billion dollars.<sup>6</sup>

<sup>6</sup> For reasons given later, neither of these totals includes income from durable consumption goods other than homes. A discussion of the issues involved in the computation of income, and of the methods which we have used in this investigation as well as data to supplement those given here and in the following chapters, will be found in the appendix on income and its distribution, pp. 137-238.



## CHAPTER II

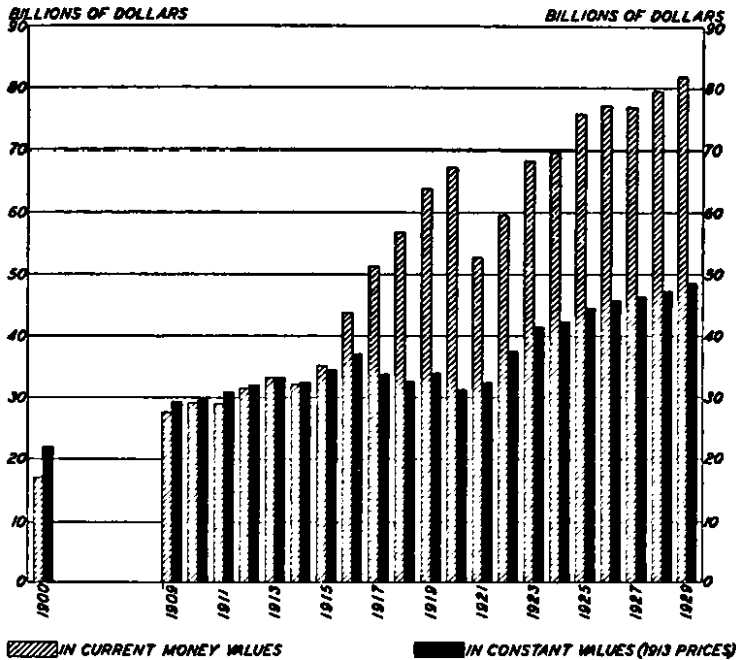
### AMOUNT AND SOURCES OF THE NATIONAL INCOME

In this chapter we shall consider the effects of the growth of productive capacity in the United States during the first three decades of the present century, as revealed in the preceding volume, upon the income of the American people. We shall first show the growth of this income, both in aggregate and per capita terms, and then indicate the industrial sources from which this income has been derived. Since we are interested in gauging the extent of our economic progress during this great era of expansion we shall, as indicated in the preceding chapter, consider only income derived from current productive activities.

#### I. GROWTH OF THE NATIONAL INCOME, 1900-29

If we are to have a true picture of the growth of real income we must make adjustment for the wide fluctuations in the level of prices which characterized the period under consideration. In the diagram which follows, therefore, we present the totals of aggregate income from productive activities, first, in terms of the actual number of dollars received, and second, in the number of dollars that would have been received had there been no change in the level of prices. The importance of making this adjustment is clearly evident when it is noted that the national income as measured by actual dollars increased between 1900 and 1929 nearly fivefold, while the actual increase, after adjustments for price changes, appears to have been only 120 per cent.

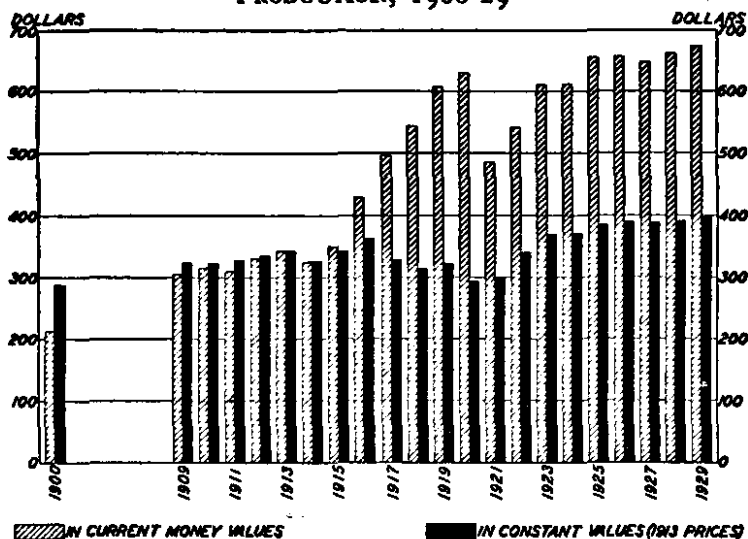
AGGREGATE INCOME FROM PRODUCTIVE  
ACTIVITIES, 1900-29\*



\* For data see Appendix A, Tables 1 and 2, pp. 148-49.

The population of the United States increased from 76 to 122 millions, or by 60 per cent, between 1900 and 1929. Consequently the figures of aggregate income are not a proper measure of the increase in standards of living or of the increased productivity of our economic system. If we are to measure the increase in economic progress and well-being, it is obvious that the growth of population must be taken into account. Accordingly, in the chart on page 17 we show the growth of income from productive activities in *per capita* terms. Between 1900

## PER CAPITA INCOME FROM CURRENT PRODUCTION, 1900-29\*



\* For data see Appendix A, Tables 1 and 2, pp. 148-49.

and 1929 the increase in income, adjusted for changes in price level as well as for population growth, amounted to approximately 38 per cent.<sup>1</sup>

The striking fact disclosed by the chart is perhaps not so much that the product of our industrial establishment has increased in the 30 years but that it has increased so little. Even if the change is measured by the two terminal years 1900 and 1929 alone, the increase represents an average annual gain over 1900 of about

<sup>1</sup> It will be noted from appendix Table 3, p. 150, that when the realized income from all sources is considered, including income derived from the use of existing consumers' goods, the growth per capita appears to be 49 per cent in the same period. The difference is due in large part to the accumulation of a stock of durable consumers' goods over the 30-year period. Part of the difference may, of course, be attributed to the imperfections in the data themselves and particularly in the index numbers employed as deflating factors.

1.3 per cent.<sup>2</sup> In view of the great technical achievements during the first three decades of the century, this gain in income does not appear remarkable.

A gradual shrinking of the hours of labor has, however, accompanied this increase in per capita income. Between 1900 and 1930 the average number of hours of industrial workers decreased by about 13 per cent.<sup>3</sup> While figures are not available to warrant a definite statement, expert opinion is that hours on the farm decreased about half as much as in industry.

The proportion of the population 16 years of age and over reported as gainfully employed has not changed materially in the 30-year period. In 1930 the proportion employed was less than 1 per cent greater than in 1900.<sup>4</sup> This increase is attributable primarily to the increasing employment of women in industry. The figures show that the proportion of men, and particularly children, reported as gainfully employed has decreased considerably.<sup>5</sup>

In summary, the per capita income of the United States has been increased during the period which we are considering by nearly 38 per cent. During the same period, however, the per capita expenditure of human time and energy has decreased by something like 12 or 13 per cent. This means that, in addition to the increase in per capita income of goods and services, we have obtained the satisfactions that come with greater leisure.

## II. SOURCES OF NATIONAL INCOME, 1900-29

An analysis of the sources from which the national income is derived is one of the most effective means of revealing the character of our productive establishment.

<sup>2</sup> From the available data it appears that 1900 was not an unusual year with respect to the trend of production and business activity.

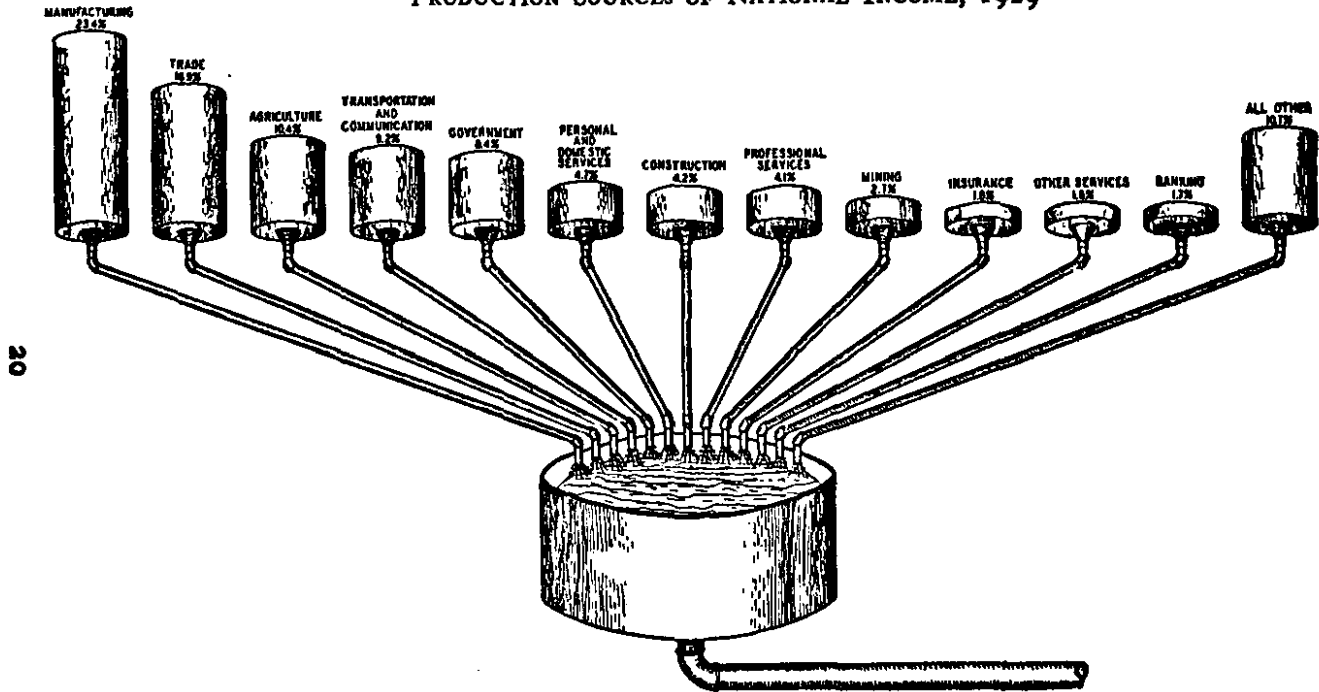
<sup>3</sup> For data, see Table 3, p. 150.   <sup>4</sup> The same.   <sup>5</sup> Table 4, p. 151.

Moreover, the relative variations in the amount of income received from different sources over the 30-year period reveals the basic changes that have occurred in the economic organization of the country.

The chart on page 20 shows the derivation of the national income by broad classes of economic activity in the year 1929. The amounts obtained from the various sources are shown as percentages of the total derived from all productive activities, as previously defined. The income in each case represents the disbursements made by each particular type of economic activity for wages, interest, profits, and the like. Only the income directly derived from a given source is assigned to that source. For example, the income from the construction industry includes only the disbursements made in connection with actual building operations, the income derived from the production of the materials which enter into the construction industry being assigned to manufacturing, forestry, and the other points of origin. It should be noted, however, that the relative magnitude of the several sources depends upon the classification employed. A change in classification will nominally throw part of the income from one class into another.

It will be observed that in 1929 the largest fraction of the national income was obtained from manufacturing, the industries in this group contributing approximately 23 per cent of the total. Wholesale and retail trade were second with about 17 per cent. It is surprising to note that only about 10 per cent of the total income was derived from agriculture, while as much as 9 per cent originated in transportation and communication and 8 per cent in government activities. Government obviously has to be included here as a source of national income, because it is one of the great disbursers of wages

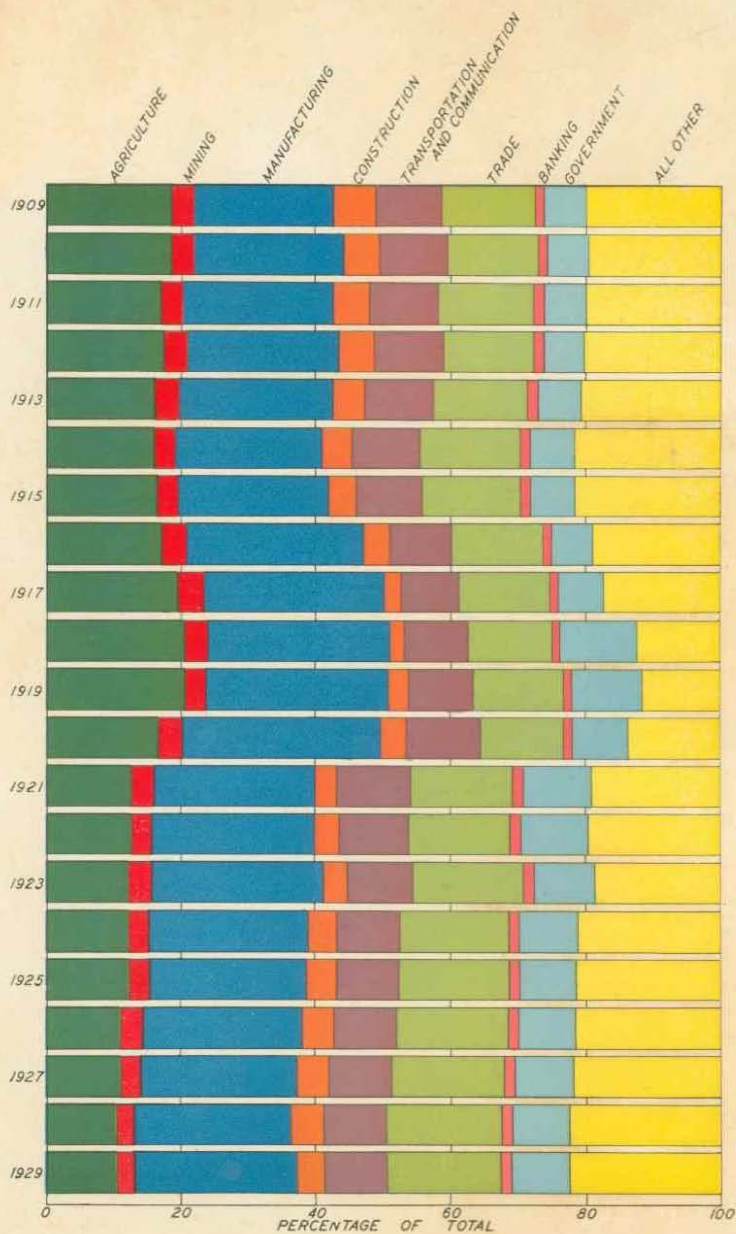
# PRODUCTION SOURCES OF NATIONAL INCOME, 1929\*



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\* For data and explanation of the method of compilation, see Appendix A, Table 15, p. 166.

# PRODUCTION SOURCES OF NATIONAL INCOME, 1909-29<sup>a</sup>



<sup>a</sup> For data see Appendix A, Table 6, p. 154.

and interest. The so-called service industries contributed nearly 11 per cent of the total, professional services alone amounting to more than 4 per cent.

Of especial interest and significance is the trend of income derivation shown for 21 years of the 30-year period in the chart opposite this page. The chart gives the percentages of the production income derived from the major sources annually from 1909 to 1930. The reader will bear in mind that this chart measures only the changing relative importance of the different sources of income.<sup>6</sup> The aggregate figures are given in Appendix A, Table 6, page 154.

Perhaps the most striking fact disclosed by the chart is the waning importance of agriculture as a source of national income since the period of the World War. In 1909 the income from agriculture constituted nearly 19 per cent of the total from all sources, and during the war-time agricultural boom, 1918-19, it rose to 20.5 per cent. With the drastic decline in agricultural prices after the war, however, the percentage of the national product derived from the farms of the country fell to 12.6 per cent in 1921. By 1929 it was as low as 10.4 per cent, and it continued to fall beyond that date.

The relative income derived from mining has on the whole remained stationary, although it was lower at the end of the 21-year period than it was at the beginning. During the war it rose to a high of 3.9 per cent, but has since declined. In 1929 the contribution of mining was 2.7 per cent.

The only other industry whose share in the total in-

<sup>6</sup> It should also be noted that the relative positions of the several industries are somewhat distorted by the fact that the percentages are computed on the basis of realized income, corporate savings not being included in the totals. Business savings do not, of course, accrue proportionately to all industries.



come was significantly smaller at the end than at the beginning of the period under consideration was construction. In 1909 the share was 6.4 per cent of the total. In the war period it was low on account of suspended building operations, touching 2.2 per cent in 1918. In the boom construction years, 1925 to 1928, the share was nearly 5 per cent of the national income; while in 1929 the percentage fell to 4.2 per cent. Although this industry is notoriously subject to violent fluctuations, a slight downward tendency is nevertheless unmistakable.

The income from transportation and communication industries has shown comparatively little change over the period, running almost consistently from 9 to 10 per cent of the total. The percentage derived from transportation might have shown some increase had it not been for the fact that an increasing proportion of our transportation requirements has come to be met by means of private automobiles and owner operated trucks. The percentage of income derived from banking has tended to increase slightly except during the war period.

Manufacturing activity, while constituting the largest percentage of the total, has, interestingly enough, shown only a moderate increase in relative importance. In 1909 manufactures accounted for 20.7 per cent of the national product as compared with 24 in 1929. As early as 1913 the percentage had reached 23. The highest ratio, 29.6 per cent, reached in 1920, is apparently attributable to large shifts in prices rather than to any noteworthy increase in manufacturing output.

The two divisions which show the greatest increase are trade and government. Prior to 1920 the percentage of the national income derived from trading operations ranged from between 12.5 and 15 per cent. In the decade after 1920 the proportion increased steadily to

17 per cent in 1928, falling slightly in 1929 to 16.8 per cent.

Prior to the war, federal, state, and local governments distributed, in the form of wages, salaries, and interest, less than 7 per cent of the total national product. By 1918, owing to the great expansion in government activities, particularly in the military service, and as a result of the growth of public indebtedness, the disbursements had increased to more than 11 per cent of the total. While the percentage has dropped materially in the post-war period, it has never receded to the pre-war level. In 1929 it was 8.4 per cent as compared with 5.9 per cent in 1909 and 6 per cent in 1910.

Under "all other activities" the most important sources are professional, personal, and domestic services. It will be observed that the percentage of national income derived from these and other unclassified pursuits was somewhat higher at the end than at the beginning of the period.

As will be seen later, during the period under consideration between 84 and 87 per cent of the value of the total product<sup>1</sup> was distributed as wages, salaries, employees' compensation, and so on, and as business profits of individual entrepreneurs. Although the percentage varied with the different industries, it is obvious that the bulk of the product of every class of activity went to those who were directly engaged in its production. The foregoing diagram, therefore, in addition to showing the industrial origin of the national income, indicates in a rough way the distribution of the income in the different years among the population groups directly engaged in the various economic activities, such as farm-

<sup>1</sup> Including goods and services actually produced but not services represented by consumers' payments of interest and rent.

ing, mining, and manufacturing. It thus gives an index of the purchasing power of the various groups and of their effective capacity to consume the products of industry.<sup>8</sup> It also serves to indicate the "dislocations" that have taken place in the consuming power of some sections of the American people.

<sup>8</sup> As stated, however, the index is very rough. Some industries are more subject to the effects of rigid contractual arrangements with respect to rents and interest than others, with the result that an equal deviation in the relative contribution to the national total of one industry may mean a greater difference in the income of its active producers than in another industry. In agriculture, for instance, rent and mortgage interest are so important that any drop in the total income of the industry as a whole is greatly accentuated in its effect upon the income of the farm operators.

### CHAPTER III

## FUNCTIONAL DIVISION OF THE NATIONAL INCOME

We turn now from consideration of the aggregate value of our national product, and the industrial sources from which it has been derived, to the equally significant question: Who gets it? In the present chapter we shall study this question from what may be called a functional point of view. National income is disbursed to various groups of people in society as compensation for services of one kind or another which they have rendered in connection with its production. These functional groups—wage earners, business enterprisers, investors, and others—are, accordingly, the claimants, or owners, of the national income.

The principal groups who have participated directly in the processes of production are manual workers, who receive wages; white-collar workers, who receive salaries; and farmers, merchants, professional individuals and firms, and miscellaneous other business men, operating on a non-corporate basis, whose income may be regarded partly as wage or salary for direct services rendered and partly as returns upon invested capital. It is ordinarily impossible, however, to separate these two elements in the income of entrepreneurs.

The remaining group of claimants consists of investors who receive interest or dividends on money or property which has been turned over to others for productive purposes. The great bulk of investments is in mortgages and government and corporate securities. This investor class receives its return not for services

currently rendered but as a result of the ownership of property previously accumulated. This, as already indicated, is also true of that portion of the income of farmers, merchants, and others, which is derived from their ownership of property.

The investor class, it should be observed, does not in the main consist of a group of people separate and distinct from wage earners, salaried workers, and farm and business enterprisers. A large proportion of the population belongs to the investor class in some degree, either as owners of securities directly or through the medium of bank deposits, insurance, and the like—for such funds are reinvested by banks and insurance companies in mortgages and corporate securities. There is, however, the greatest divergence in the proportion of incomes derived by various classes from services currently rendered and from investments. With the masses of the population the income derived from investments is negligible, while there are some who depend entirely on investment income. Data are not available by which to reveal with precision the size of the group which derives its entire income from investments. In 1929 there were, however, about 2 million "income recipients" who were not reported as being gainfully employed. Some of these derived their livelihood from pensions and family contributions; but most of them were presumably living on income from investments.

#### I. TRENDS IN INCOME DIVISION

A graphic picture of the proportional shares of employees, individual enterprisers, and investors during 1909-29 is shown in the chart facing page 28. As in the preceding chapter, the analysis refers to income from productive activities and does not include income of in-

dividuals from sources other than current production.

The two most important shifts in the division of the national product among major claimants over the period as a whole are found in the shares going to farm proprietors and to employees. The share to the former has shown a drastic decline in the post-war years, and that to the latter has shown a considerable increase, manifested also in the post-war period.

In 1900 the amount distributed to employees in the form of wages, salaries, and pensions constituted something more than 53 per cent of the product. During the years 1909-15 the share of employees ranged from about 54.4 to 57.4 per cent. Owing to the expansion of business activity and the lag in the adjustment of wages to prices during the early war period, the relative share received by employees decreased considerably during 1916-17, declining to about 50 per cent in the latter year. After the war the share going to employees increased sharply, and in the decade of the twenties ranged well above 60 per cent. Except for 1921, when the rise to nearly 69 per cent was due primarily to a sharp contraction in profits, the largest percentage, 65.1, was reached in 1929.

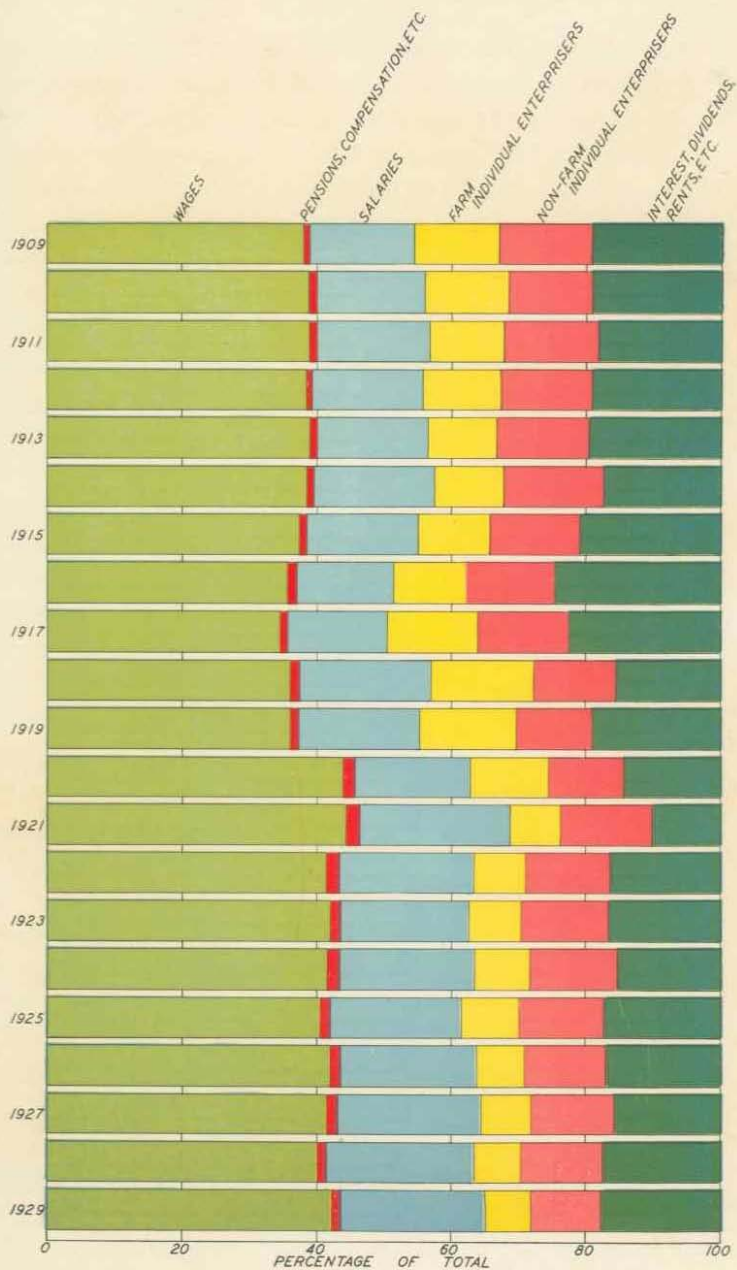
The division of employees into wage earners and salaried workers cannot be made with any degree of definiteness. However, if the classification is carried through from year to year on approximately the same basis the trends of the two classes have the quality of precision. The comparative trends of wages and salaries may be read from the chart. In the years from 1909 to 1915 the amount disbursed as salaries averaged about 16.5 per cent of the total income, while that disbursed as wages averaged about 38.5 per cent. Between 1922 and 1929 the amount going for salaries averaged about 20.5 per

cent, while wages constituted on the average about 41 per cent. Thus it appears that since the war salaries have expanded much more rapidly than wages.

The chart indicates that the share going to investors was on the whole comparatively stable over the two decades 1909-29. There was an increase, to be sure, during the war period, reflecting particularly the surplus earnings directly reinvested by business enterprises, and there were inevitable fluctuations in the early post-war years. During the period of expansion from 1922 to 1929 the proportion going to investors increased only gradually, from 16.4 to 17.6 per cent. If the actual disbursements to investors in such forms as interest and dividends are alone considered, we find a remarkable uniformity over the whole period, running typically from 13 to 15 per cent. It has been a little lower in the post-war than in the pre-war period, notwithstanding the increasing importance of the corporate, as compared with other forms of business enterprise. These figures, it should be borne in mind, do not adequately convey the distribution of income among the various income groups; for this purpose salaries have to be combined with income from investments and other sources. The division of income from all sources among income groups is shown in Chapter V.

The income of individual enterprisers, it will be recalled, includes the labor income of farmers, merchants, and other entrepreneurs, as well as income from their direct investments in the enterprises which they operate. The percentage of the total income going to the individual enterpriser group as a whole has diminished steadily during the years shown on the chart, and it is safe to say throughout the entire 30-year period. Look-

## THE TREND OF INCOME DIVISION AMONG MAJOR CLAIMANTS, 1909-29<sup>a</sup>



<sup>a</sup> Income from productive activities. For data see Appendix A, Table 10, p. 158.



ing at the two divisions separately, it will be seen that the percentage received by non-agricultural enterprisers shows little change between 1909 and 1917, and an appreciable decline in the post-war years. The percentage received by farm enterprisers, except for the war years, declined almost steadily. In fact, between 1909-10 and 1928-29 the decline in the relative share of farmers was not far from 50 per cent.

The shifts which we have observed are not to be regarded as conclusive evidence of relative changes in the economic status of the individuals who make up the groups concerned. In the case of the share going to employees, for example, the proportional increase is in part attributable to a shift from unpaid employments, such as housework and the labor of farm families, to financially remunerative industrial pursuits, and in part to a shift from individual or partnership enterprise to corporate enterprise, involving a reduction in the number of entrepreneurs and a corresponding increase in the number of salaried officials and other employees. Similarly, the declining share going to non-farm individual enterprisers is in part, perhaps wholly, due to the waning importance of this form of enterprise.

The marked decline in the proportion of the income received by farmers is in part attributable to the decreasing relative importance of agriculture, as compared with industrial and commercial enterprise. In addition, however, it is in no small degree attributable, in the post-war years, to the depression of agricultural prices. Between 1919 and 1929 the aggregate income of farm enterprisers decreased from over 9 billion dollars to approximately 5.5 billion, a decline of almost 40 per cent, which is quite out of line with general trends.

In view of the observed shift of individuals from the entrepreneurial to the employee group it should be of interest to combine the income of the two groups and compare the total with the income obtained by investors and property holders from current production. The appendix table on page 159 affords such a comparison between "occupational" and investment income. Between 1909 and 1929 the occupational income is shown to have increased from 22.4 billion dollars to 67.5 billion, a rise of 200 per cent. In the same period the investment and property income drawn from productive enterprises (exclusive of corporate savings) rose from 4.1 billions to 12.2 billion, also 200 per cent. In both 1909 and 1929 the occupational income constituted about 85 per cent of the total. During the 21-year period from 1909 to 1929 the figures ranged from about 84 to 87 per cent.

The remarkable stability of these percentages is of special interest since they represent largely labor income as against property income. In a later paragraph (page 34) we estimate that in 1929 roughly 80 per cent of the national product resulted from current effort and approximately 20 per cent from past savings. This division may be extended to apply in a general way to the entire period from 1909 to 1929.

The foregoing generalization, of course, applies to the actual output of the "productive establishment" of the nation. The 100 per cent so distributed does not include income resulting from the use of durable consumption goods which, as may be seen from Table 6, page 154, added on the average from 11 to 12 per cent to the income from current production. Nor does it include income derived from the sale of capital assets, which fluctuated widely over the period.

II. THE SHARES OF VARIOUS CLAIMANTS IN 1929

We may now turn to an examination of the division of income among the more important groups of claimants in the year 1929. The number of persons listed by the Census of 1930 as gainfully employed wage earners, salaried workers, and business enterprisers was 47.1 million.<sup>1</sup> For our present purpose we classify them, in millions, as shown below. Corporations are not shown as a separate group, for the workers fall in the wage-earning category, and officials and executives in the salaried group.

WAGE EARNERS .....	26.5
Agriculture, forestry, and fishing .....	3.0
Industry and trade, including mining .....	19.2
Domestic and personal services .....	4.3
SALARIED WORKERS .....	11.5
Executives and professional .....	2.3
Foremen and lower managerial, etc. ....	1.7
Clerical .....	7.5
NON-CORPORATE ENTERPRISERS .....	9.2
Farmers .....	6.0
Merchants .....	1.8
Professional .....	0.6
Others .....	0.8
TOTAL .....	47.1

The classification is admittedly rough and in many respects arbitrary, but it is useful as a generalization. The wage-earning group comprised 56 per cent of the total; the salaried workers 24 per cent; and the non-corporate enterprisers 20 per cent, of which roughly 8 per cent were in the farm group.

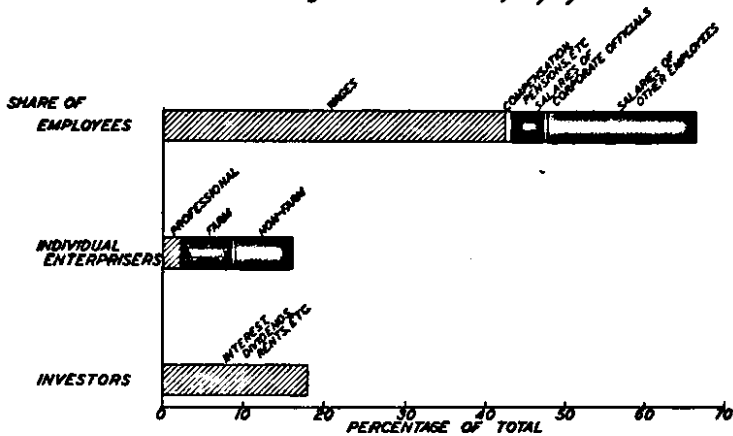
The relative proportion of the national product received by these various classes, including investors, in the year 1929 is shown in the chart on the following

<sup>1</sup> This figure does not include unpaid family workers in agriculture.

page. Here, too, the analysis concerns the income from productive activities, the income of individuals from residential property and from interest on non-business loans having been excluded.

The share which went to employees in the form of wages, salaries, pensions, and other payments amounted

**DIVISION OF INCOME FROM PRODUCTIVE ACTIVITIES  
AMONG MAJOR CLAIMANTS, 1929<sup>a</sup>**



<sup>a</sup> For data, see Appendix A, Table 14, p. 165.

to 53.5 billion dollars or 66 per cent of the total. The share received by non-corporate enterprisers, such as farmers, merchants, manufacturers, private physicians, lawyers, and the like, aggregated 12.9 billion or 16 per cent; and the remaining 14.4 billion (18 per cent) constituted the return to investors in corporate securities, mortgages, and other property.

The share received by employees was subdivided as follows: 34.1 billion dollars was distributed as wages; 18.5 billion dollars was distributed to salaried workers,

of which 3.3 billion went to corporation officials. In addition to wages and salaries, employees received in the form of pensions, workmen's compensation, and incidental payments approximately 900 million dollars.

The figures serving as a basis for the diagram indicate that the income received by the farmers was only about 43 per cent of the total going to the individual enterpriser group. Exclusive of supplementary income from wages and investments not connected with the farm business, the farmers received only 5.7 billion dollars. Even of this amount about 560 million dollars constituted inter-farmer payments of rent and interest, leaving only about 5.1 billion dollars as the aggregate farm income of individual operators. This is to be compared with 7.8 billions for other enterprisers. Numerically the farmers constitute more than 60 per cent of the individual enterpriser class, which shows that the average earnings of farmers were considerably less than those accruing to individuals operating other private businesses.<sup>2</sup> It should, however, be said that among the non-farm enterprisers a comparatively small group of professional practitioners received a large fraction of the income. When the professional individuals are eliminated and adjustment is made for the difference in the cost of living between farm and city, it is found that the difference between the earnings of farmers and those of non-farm entrepreneurs was not significant.

The investor class, as already indicated, includes those who own property which they are not themselves using but which they have placed at the disposal of others. The total income from this source, 14.4 billion dollars,

<sup>2</sup> See Appendix A, Table 14, p. 165.

included interest, dividends, rents, and undistributed income in the form of additions to corporate surplus.<sup>3</sup> The corporate surplus represents earnings which are retained by the corporation and are hence unavailable to their owners. The significance of the business corporation as a source of investors' income is indicated by the fact that the net interest and dividends paid to individuals by corporations in 1929 amounted to less than 8 billion dollars, while the corporate surplus retained in the business aggregated 900 million dollars.<sup>4</sup>

Before closing the discussion of the division of the national income from production among the various claimants in 1929 it should prove of interest to recast the data shown in the chart so as to indicate more definitely the two-way division of the income as between returns from individual effort and returns from past savings. The chart shows clearly the shares accruing to employees and salaried workers as a result of their efforts, but that going to the individual enterprisers is mixed—a part being attributable to their labor efforts and a part being the result of their invested capital. While there is no basis for a precise computation of the portion that is assignable respectively to the labor and investment of the proprietor class, we estimate that the amount growing out of capital ownership is something like one-fifth of the total return of individual enterprisers. Taking this estimate into ac-

<sup>3</sup> The interest item includes returns on corporate and government securities, mortgages on business property, bank deposits, and foreign investments. It does not include interest on non-business loans. Nor does the rent item include residential rent. If allowance for interest on non-business loans and residential rents (both paid and imputed) be included, the total received by investors would be about 19.6 billion dollars.

<sup>4</sup> This figure does not include the surplus of life insurance companies nor does it include about 1.3 billion dollars of profits made by corporations from the sale of securities, etc.

*CLAIMANTS OF NATIONAL INCOME* 35

count it appears that roughly 80 per cent of the national income in 1929 went to reward current effort and approximately 20 per cent to owners of property.

It will be recalled that this discussion is based upon the income from what we have called productive activities, and the figures do not include residential rents and interest on consumers' loans. If these were included as income from investment the share of the aggregate income accruing to individuals as a result of saving would be increased.

## CHAPTER IV

### GEOGRAPHIC DISTRIBUTION OF INCOME

Our analysis of income data enables us to indicate the geographic distribution of the national income as well as its distribution among various types of claimants. The geographic variations are not only interesting in themselves, but they also have an important bearing upon the basic economic issues with which our study as a whole is concerned.

In a country as vast as the United States, with such differences of climate, natural resources, and composition and concentration of population, it is natural that there should be wide differences in the income of the people. We shall examine these variations with a view to answering a number of specific questions. To what extent is income concentrated in particular areas? What part do these areas of concentration play in the national total; and, conversely, to what extent is the total and also the average affected by areas of low income? How does the per capita income of the farm population in the different states differ from that of people living in towns and cities? What portion of the income in different parts of the country is derived from employment and regular business pursuits, and what portion from investments and miscellaneous sources?

It will be convenient to break our discussion into three parts. First, we shall consider the distribution of the income of the population as a whole; second, we shall show the geographic variations in the income of the farm population; and, third, we shall analyze the geo-



graphic differences in the income of the non-farm population.

In the two preceding chapters we have considered income largely from the standpoint of production. We have identified income with the value of goods and services produced by the people and have accounted for it in terms of the money received by the producers and other claimants of the product. The income thus considered, as we saw in Chapter I, amounted to approximately 81 billion dollars in 1929. However, about one billion was retained as corporate surplus and was not made available to individuals for expenditure. The realized income from current production was thus about 80 billion dollars.

In this and the following chapters dealing with the distribution and utilization of income among families we shall expand the total realized income to include returns from other sources than current production in the strict sense. The added items of realized income to be distributed by states are 5.2 billion dollars representing returns on property not used in production, and 6.2 billion dollars covering the estimated profits derived from the sale of real estate, stocks, bonds, and the like. While the latter resulted merely from an inflation of values, it represented none the less dollars of purchasing power available for expenditure. The aggregate figure on which the discussion in this chapter is based is, therefore, approximately 91.4 billion dollars.<sup>1</sup>

#### I. INCOME OF ENTIRE POPULATION

In the table on page 38, we present a condensed statement of the distribution of income by broad geo-

<sup>1</sup> Exclusive of capital gains this total would be somewhat more than 85 billion dollars. Imputed income on consumers' goods other than homes has not been distributed by states. See Appendix A, pp. 168-76.

graphic divisions. The grouping of states follows the standard practice of the United States Bureau of the Census. It will be seen that the income is very highly concentrated in the Middle Atlantic and East North Central states, which include New York, New Jersey, Pennsylvania, Ohio, Indiana, Illinois, Michigan, and

INCOME OF INDIVIDUALS, BY GEOGRAPHIC DIVISIONS, 1929<sup>a</sup>

Geographic Divisions	Population July 1 (In thousands)	Aggregate Income (In millions of dollars)	Percentage of Total Income	Per Capita Income (In dollars)
Continental United States..	121,832	91,385	100.00	750
New England.....	8,130	7,377	8.07	907
Middle Atlantic.....	26,037	28,817	31.54	1,107
East North Central.....	25,082	20,831	22.79	831
West North Central.....	13,274	7,464	8.17	562
South Atlantic.....	15,700	7,314	8.00	466
East South Central.....	9,838	3,383	3.70	344
West South Central.....	12,065	5,738	6.28	476
Mountain.....	3,683	2,444	2.68	664
Pacific.....	8,023	8,017	8.77	999

<sup>a</sup> Includes profits from the sale of property and imputed rent on owned homes, but excludes imputed income from durable consumption goods other than homes. For figures by states see Appendix A, Table 16, p. 172.

Wisconsin. These eight states, comprising little more than 13 per cent of the land area of the continental United States, had 42 per cent of the population and received approximately 55 per cent of the aggregate money income of the American people in 1929.

In contrast, the South Atlantic and East South Central divisions,<sup>2</sup> with more than 15 per cent of the land area and 21 per cent of the population, had only 11.7 per cent of the income. If Arkansas and Louisiana be substituted for Delaware, Maryland, and the District

<sup>2</sup> Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, and Mississippi.

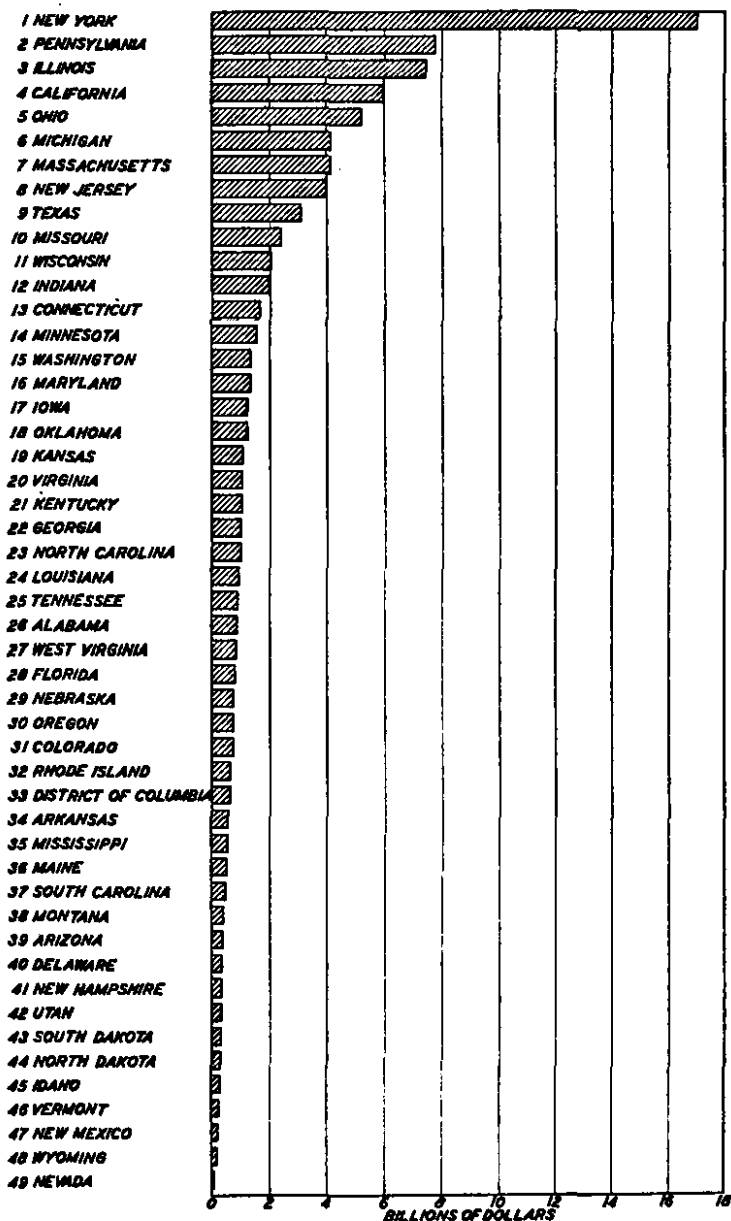
of Columbia in this grouping, we would find that the twelve states which may properly be called the South comprised 18 per cent of the land area and 21.5 per cent of the population, but only 10.9 per cent of the total income. The low incomes of the South are attributable to a combination of factors including climatic conditions, the character and density of the population, and the economic maladjustments resulting from the Civil War. These twelve Southern states contain 50 per cent of the negro population of the country and 50 per cent of the tenant farmers.

The proportion of the total income received by the people in each state is shown in array in the chart on page 40. It is of interest to observe that the income of the Empire State is almost equal to that of the New England, South Atlantic, and East South Central states combined; that, excluding California, it exceeds that of all states west of the Mississippi. The income of the three states, New York, Pennsylvania, and Illinois, comprised more than one-third of the total—although the population was but 24 per cent of the total. The income of California is materially greater than that of the other coast states and the mountain states combined, and is not very much less than that of New England.

With respect to "density of income," that is, income per square mile, Massachusetts, New Jersey, Rhode Island, New York, and Connecticut head the list of states, in the order given. The District of Columbia with its restricted land area of course has a vastly larger income per square mile than any of the states. The five states with the smallest income in proportion to area, reading from the bottom up, are Nevada, New Mexico, Wyoming, Arizona, and Idaho.

Since our geographic classification must of necessity

## AGGREGATE INCOME OF INDIVIDUALS, BY STATES, 1929<sup>a</sup>



<sup>a</sup> For data see Appendix A, Table 16, p. 172. The figures in this chart include profits from the sale of property. For data excluding this item, see Table 18, p. 174.

## GEOGRAPHIC DISTRIBUTION OF INCOME 41

follow broad political areas which are not uniform either in size or density of population, the sectional division of total income fails to throw light upon the level of consumption and saving which obtained in the different parts of the country. Consequently, in the following discussion geographic comparisons will be made on the basis of per capita income.

A summary of per capita income by geographic divisions is given in the table on page 38. Although the figures represent averages of artificially combined states, they clearly reflect the economic sectionalism of the country. The differences in income between the South, on the one hand, and the Middle Atlantic and Pacific divisions, on the other, are great indeed.

Sectional differences are even more strikingly revealed in the accompanying map. The states are classified according to their per capita income in 1929 in \$200 intervals. Several distinct areas may be noted. At the bottom of the income scale we find eight contiguous states in the South. The incomes of these states ranged between \$200 and \$400 per capita.<sup>3</sup>

In the \$400 to \$600 class are the agricultural states running north and south from North Dakota to Texas, and including Iowa, New Mexico, and Louisiana. In this class also are found Virginia and West Virginia, as well as Florida.

In the third class, \$600 to \$800 per capita, we find three areas, the Rocky Mountain states and Oregon; Maine, New Hampshire, and Vermont in New England; and the section immediately to the west and south of Lake Michigan, including Minnesota, Wisconsin, Indiana, Ohio,<sup>4</sup> and also Missouri. This last area is broken

<sup>3</sup> Kentucky is on the border-line; its per capita income was just under \$400.

<sup>4</sup> Ohio is on the border-line; its per capita income is just under \$800.

by Iowa and Illinois which belong to other income classes, Iowa being in the \$400 to \$600 class and Illinois in the \$800 to \$1,000 class. Were it not for the metropolitan area of Chicago whose higher incomes are included in the average, Illinois would fall in the class with Wisconsin and Indiana.

Illinois, Michigan, and Pennsylvania fall within the next higher class represented by per capita incomes of \$800 to \$1,000. To this class also belong Washington on the Pacific Coast, and Massachusetts and Rhode Island.<sup>5</sup>

The states in the \$1,000 to \$1,200 income class are, like those in the foregoing class, widely separated, although in this case too we observe some tendency to geographic grouping. On the Pacific Coast, California and Nevada are in this class; on the Atlantic Coast, Connecticut and New Jersey.

At the very top are New York, Delaware, and the District of Columbia, with incomes in excess of \$1,200 per capita.

Combining the highest three classes into one we observe that the industrial Northeast constitutes a practically contiguous area from Lake Michigan to the Eastern seacoast in which per capita income was above \$800 in 1929. Ohio is just under the \$800 level.

Examining the data for individual states (Appendix A, Table 17, page 173) we find that, in terms of per capita income, New York headed the list, with Delaware second, the District of Columbia third, California fourth, Connecticut fifth, and New Jersey sixth. In general, states having large cities where there are likely to be individuals with very large incomes rank high in per capita terms. This is particularly the case with New

<sup>5</sup> Maryland and Ohio are just under the lower limit of this class.

York, Delaware, New Jersey, Connecticut, and Illinois. The District of Columbia ranks high chiefly because of a relatively good average income. The showing of such states as New York, Delaware, Connecticut, and New Jersey was better than normal for the year 1929 because so many of their citizens realized large returns from speculative profits in that year; in a year like 1932 losses from this source would affect the per capita income more than would be the case in most other states.<sup>6</sup>

South Carolina, with a per capita income of \$261, less than one-fifth that of Delaware and New York, was at the bottom of the list, followed from lower to higher by Mississippi, Arkansas, North Carolina, Alabama, Georgia, and Tennessee. In the Southern states, however, because of the climatic factor, the actual differences in living conditions are perhaps not as great as these figures would indicate. Choosing a few states at random, we note that the per capita income of Maine, New Hampshire, and Vermont runs about the same as that of Indiana, Wisconsin, Minnesota, and Missouri; and that Kansas and Nebraska have about the same per capita income as Florida and Texas.

## II. INCOME OF FARM POPULATION

Thus far we have been considering the geographic distribution of income for the population as a whole. As already indicated, the amount and the per capita income of any state depends in considerable measure upon whether the state in question has large urban centers or is primarily agricultural. It should prove of interest, therefore, to study the distribution of income as between the farm and non-farm population.

<sup>6</sup> For figures exclusive of profits from sale of property, see Table 18, p. 174.

In 1929 more than 30 million people, or nearly 25 per cent of the entire population, still lived on farms. This farm population, which includes not only farmers and their families but hired laborers and managers, received a total income from all sources of approximately 8.26 billion dollars, making a per capita income of \$273. The other 75 per cent of the population had an aggregate income of about 83 billion dollars, or \$908 per capita. In terms of mere dollars, therefore, the non-farm incomes were on the average more than three times as large as the farm incomes.

These figures should not be taken, however, as a true measure of the relative well-being of the two groups of the population. While the farm incomes include allowance for rent and for food produced and consumed on the farm, the prices used are farm rather than city prices. There are also other differences in the cost of living in farm and city communities, which affect the relative position of the two groups.<sup>7</sup>

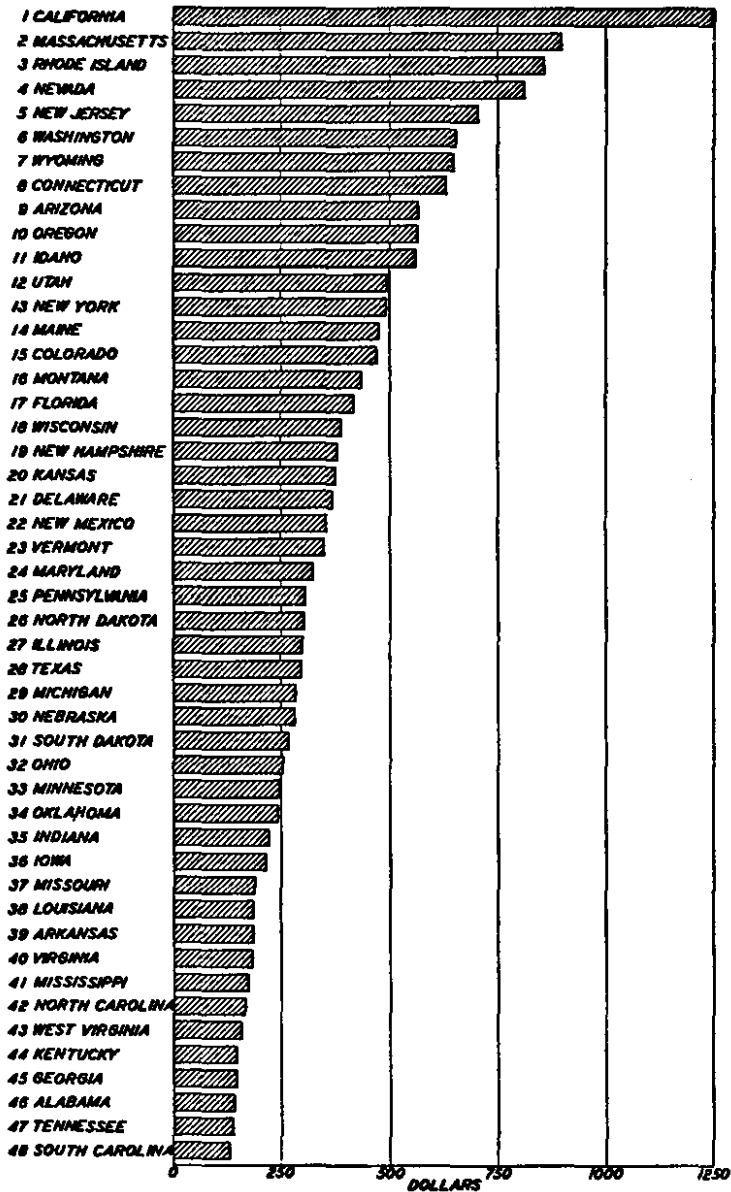
The really significant facts to which we wish to address attention are the wide geographic differences in the income of the farm population. The fact is that the variations in farm income from state to state are even greater than the variations in the total income. This is shown graphically in the chart on page 45.

In 1929 the per capita income of the farm population showed a range of 900 per cent between the lowest and the highest state; that is to say, in California the per capita farm income was ten times as great as in South Carolina—\$1,246 as compared with \$129. In twelve

<sup>7</sup> It must be remembered also that in 1929 the share of the non-farm population contained a considerable amount of realized profits from the sale of securities which represented "illusory" income—income used in the main not for consumption but for reinvestment in securities which shortly declined in value.



## PER CAPITA INCOME OF FARM POPULATION BY STATES, 1929<sup>a</sup>



<sup>a</sup> For data see Appendix A, Table 17, p. 173.

states, all in the South, the income of the farm population was below \$200 per capita, the average for this group of states being barely \$162. This included, of course, both white and colored and owner and tenant farmers.

In California the per capita income of the farm population actually exceeded that of the city dwellers. After California the ranking is Massachusetts, Rhode Island, Nevada, New Jersey, Washington, Wyoming, and Connecticut. There are eleven states where the per capita farm income exceeded \$500.

### III. INCOME OF NON-FARM POPULATION

The geographic variation in per capita income among the non-farm population, as will be seen, is considerably less than that of the farm population. The bottom position is again occupied by South Carolina—\$412 per capita—while at the head of the list is Delaware, with \$1,550. New York is second, with \$1,417, and the District of Columbia, which has practically no farm population, is third, with \$1,233.

The analysis of the geographic distribution of income may be carried a step further. We have seen that at least one reason for the low incomes in some states is the dominance of agriculture, and particularly certain types of agriculture. When the non-farm population is taken alone the range in per capita income for the different states is considerably narrower than when the farm population is included. Similarly, we would doubtless find that other dominant industries with high or low "productivity" play important rôles in determining the per capita income in different states. The industrial composition of an area, however, affects mainly the occupational income of its people. The income in various sec-

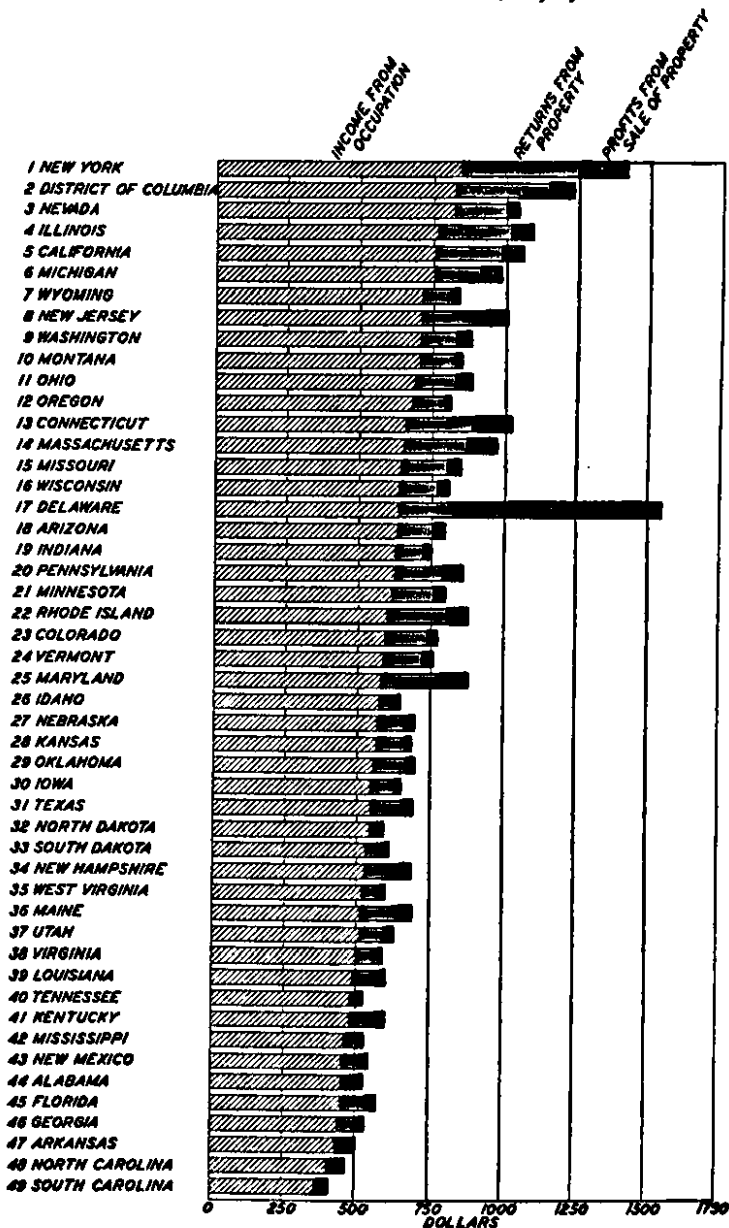
tions of the country is also affected by the ownership of wealth and by speculative opportunities resulting in profits from the sale of property. The income from both of these sources is highly localized and is received largely by residents of urban areas.

It will, accordingly, be of interest to break down the income of the non-farm population in each state into three categories: (1) occupational income; (2) income from investments and miscellaneous sources; and (3) profits from the sale of property. The chart on page 48 shows the 1929 per capita income of the non-farm population in the different states in these major categories. The states are arrayed according to occupational income, but the comparative position of each state with respect to per capita income from each source may be clearly seen.

It is evident that there is a considerable shift in the ranking of the states as between total income and occupational income. New York, for instance, which, classified by total per capita non-farm income, is second, moves up to first place, while Delaware drops from first to sixteenth. Connecticut falls from seventh to twelfth place, and Massachusetts from tenth to thirteenth. Michigan, on the other hand, rises from ninth to sixth place, and Montana from sixteenth to tenth.

The non-occupational income varies widely in different states, both in actual magnitude and relatively to other income. As the chart indicates, a substantial proportion of the total income is derived from investments and from the sale of property in Massachusetts, Connecticut, New York, New Jersey, Delaware, Maryland, the District of Columbia, and Illinois. In Massachusetts, Connecticut, New York, and Delaware the profits from the sale of property bulked particularly large. Again the

PER CAPITA INCOME OF NON-FARM POPULATION  
BY SOURCES AND BY STATES, 1929<sup>a</sup>



<sup>a</sup> For data see Appendix A, Table 20, p. 176.

## GEOGRAPHIC DISTRIBUTION OF INCOME 49

reader is reminded that figures for later years, if available, would show the vulnerable character of much of such income. Profits from the sale of property constituted a relatively small proportion of the income in such states as Indiana, the Dakotas, Oregon, the Rocky Mountain states, and the Southern states generally. The geographic variations in the income of the non-farm population derived from profits from the sale of property may be indicated by the following figures. In Mississippi it was \$5.00 per capita, in North Dakota \$7.00, in New York \$166, and in Delaware \$529.

The variations in investment income are also quite extensive. In South Carolina only \$36 per capita was derived from interest, dividends, and rent. In Delaware this source of income supplied \$382 per capita. In Indiana it amounted to \$98; in Illinois to \$252. In Pennsylvania it was \$169, and in New York \$408.

The occupational income of the non-farm population showed the least geographic variation, though here too the range between the lowest and the highest state was considerable. The highest per capita income from this source, \$843 in New York, was about 2.3 times as high as that of South Carolina. In the main the states which show the highest occupational income also show high incomes from investments and, with some notable exceptions, from the sale of securities and other property.

## CHAPTER V

### THE INCOMES OF FAMILIES

For the purpose of our study the division of income among family groups is of primary significance. This is because the family is, in the main, the unit of living, and it is the family group which disposes of the incomes received. Since we shall be concerned in ensuing chapters with the disposition of the income of the American people, it is necessary to lay the foundations here by ascertaining the allocation of the total income among families at different income levels. From this point of view we are obviously interested in the total income of families, regardless of its source. We shall therefore take into consideration income from current production, profits from the sale of property, and all other items which enter into the aggregate income of the individuals comprising American families.

A family's income governs the standard of living which that family can enjoy and its ability to contribute to the life of the community of which it is a part. Economic activity in fact revolves around the receipt and utilization of incomes by the families which comprise society. The economic system, as we have seen, produces the incomes which families are enabled to enjoy. In turn, the character of our productive activities and the continued operation of the economic system depend upon the ways in which the people currently dispose of their incomes. The disposition that is made of family incomes affects not only the character of demand for the various types of consumers' goods, but it also in-

fluences the amount of productive energy which will be devoted to the creation of capital goods as distinguished from consumptive goods.

The way in which income is disposed of and made to circulate through the various trade channels and financial markets depends primarily upon the proportion of families in the various income groups. If, therefore, we are to get a picture of the effective consuming capacity of the American people as a whole, and of the allocation of the national income as between consumptive expenditures and saving for the development of capital equipment, we must first see the way in which the income of the nation is distributed among families and other income recipients.

In the following pages we give a summary of an extensive study which we have made of the distribution of income by income classes in 1929. The results are, of course, no more than careful estimates based on a great mass of material of varying quality. In the main, however, they are believed to be sufficiently accurate to satisfy the requirements of our major analysis.

#### I. THE DIVERSITY OF FAMILY INCOMES

On the basis of the 1930 Census it is estimated that at the end of 1929 there were 27,474,000 families in the United States consisting of more than one person, and 2,351,000 persons classified as families because of their occupancy of individual living quarters. In addition, there were some 6,637,000 income receiving individuals living outside of family groups—in hotels, institutions, lodging houses, and as roomers in private families. These individuals must be included here because they, like families, dispose of income received either in the purchase of consumers' goods or through

investment. The number of income disposing units was thus about 36,462,000.

In a great many families there was more than one income recipient. There were, in fact, 12.6 million individuals listed as income receivers whose income supplemented that of the family groups of which they were a part. Hence in the 36.5 million income disposing units we are in effect accounting for a total of 49 million individual incomes. The individual income recipients, of whom approximately 47 million were actively engaged in the creation of the national product, were the "gathering lines" of the income stream.

While the focus of our attention is the *family* as the spending unit, we have not overlooked in our general analysis the importance of the distribution of income among *individual* recipients. Indeed, in the course of compiling the estimates of the division of income among families we have had to make an extensive study of the manner in which income is distributed among individuals. In order to present the data directly pertinent to our main analysis as succinctly as possible, and in order not to divert the reader's attention from our primary objective, we have placed the analysis as well as the tabular material pertaining to individual incomes in Appendix A, pages 222-38.

The 27,474,000 families of two or more persons received, in 1929, an aggregate income of about 77 billion dollars, or approximately \$2,800 per family. The average number of persons per family was just a fraction over four. The median family had an income of \$1,700; that is to say, there were as many families with incomes less than \$1,700 as there were with incomes in excess of that amount. The 8,988,000 unattached individuals, including one-person families, received, in 1929,



\$15,834,000,000, or about \$1,760 per capita. The income figures here given, aggregating about 93 billions, represent the realized income of families and individuals and thus do not coincide with the figures of produced national income in the narrow sense. That is to say, they

DISTRIBUTION OF INCOME AMONG FAMILIES OF TWO OR MORE PERSONS, 1929<sup>a</sup>



<sup>a</sup> For data see Tables 37-40, pp. 227-30.

include profits from the sale of property, securities, and so forth, and an allowance for income on certain durable consumption goods.

The number and percentage of families in the various income groups, and their aggregate incomes, are shown in the table on page 54. Income groups are arranged in \$500 intervals up to \$5,000, \$1,000 intervals from

THE NUMBER AND INCOME OF FAMILIES BY INCOME CLASSES, 1929

Income Class (In dollars)	Total in Each Class				Cumulative Totals			
	Families <sup>a</sup>		Income <sup>b</sup>		Families		Income	
	In Thousands	As Percentage of Total	In millions of dollars	As Percentage of Total	In Thousands	As Percentage of Total	In millions of dollars	As Percentage of Total
Under 0 <sup>c</sup> .....	120	0.437	-615	-0.797	120	0.437	-615	-0.797
0 to 500 <sup>c</sup> .....	1,982	7.214	596	0.773	2,102	7.651	-19	-0.024
500 to 1,000.....	3,797	13.820	2,919	3.785	5,899	21.471	2,900	3.761
1,000 to 1,500.....	5,754	20.943	7,197	9.333	11,653	42.414	10,097	13.094
1,500 to 2,000.....	4,701	17.111	8,167	10.590	16,354	59.525	18,264	23.684
2,000 to 2,500.....	3,204	11.626	7,153	9.276	19,558	71.187	25,417	32.960
2,500 to 3,000.....	1,988	7.236	5,433	7.045	21,546	78.423	30,850	40.005
3,000 to 3,500.....	1,447	5.267	4,678	6.066	22,993	83.690	35,528	46.071
3,500 to 4,000.....	993	3.614	3,710	4.811	23,986	87.304	39,238	50.882
4,000 to 4,500.....	718	2.613	3,041	3.943	24,704	89.917	42,279	54.285
4,500 to 5,000.....	514	1.871	2,437	3.160	25,218	91.788	44,716	57.985
5,000 to 6,000.....	666	2.424	3,632	4.710	25,884	94.212	48,348	62.695
6,000 to 7,000.....	407	1.481	2,628	3.408	26,291	95.693	50,976	66.103
7,000 to 8,000.....	252	0.917	1,883	2.442	26,543	96.610	52,859	68.545
8,000 to 9,000.....	172	0.626	1,459	1.892	26,715	97.236	54,318	70.437
9,000 to 10,000.....	128	0.466	1,218	1.579	26,843	97.702	55,536	72.016
10,000 to 15,000.....	304	1.107	3,666	4.754	27,147	98.809	59,202	76.770
15,000 to 20,000.....	108	0.393	1,856	2.407	27,255	99.202	61,058	79.177
20,000 to 25,000.....	59	0.215	1,309	1.697	27,314	99.417	62,367	80.874
25,000 to 30,000.....	35	0.127	965	1.251	27,349	99.544	63,332	82.125
30,000 to 40,000.....	40	0.146	1,395	1.809	27,389	99.690	64,727	83.934
40,000 to 50,000.....	22	0.080	984	1.276	27,411	99.770	65,711	85.210
50,000 to 75,000.....	27	0.098	1,616	2.096	27,438	99.868	67,327	87.306
75,000 to 100,000.....	12	0.044	1,036	1.343	27,450	99.912	68,363	88.649
100,000 to 250,000.....	16	0.058	2,164	2.806	27,466	99.970	70,527	91.455
250,000 to 500,000.....	4	0.015	1,500	1.945	27,470	99.985	72,027	93.400
500,000 and over.....	4	0.015	5,089	6.600	27,474	100.000	77,116	100.000
All classes.....	27,474	100.000	77,116	100.000	27,474	100.000	77,116	100.000

54

<sup>a</sup> All families of two or more persons. Based on appendix tables 37-41, pp. 227-31.  
<sup>b</sup> Includes income from occupation, investments, and from sale of property; also includes imputed income on owned homes, but does not include imputed income on durable consumption goods other than homes.  
<sup>c</sup> The estimates for this class are highly tentative.

\$5,000 to \$10,000, and varying intervals thereafter. It should be borne in mind that these income figures are for families of two or more persons, averaging a fraction more than four, and that they include the earnings of children and other supplementary earners living at home, as well as the income of the main breadwinners.

The distribution, in thousand dollar intervals up to \$10,000, is also shown graphically in the chart on page 53. The chart shows both the proportion of the income and the proportion of families to be found in each of the income classes.

The figures in the table and chart reveal in a striking way the wide disparity in incomes, and also the concentration of the great bulk of the families in a relatively narrow income range. The greatest concentration of families was between the \$1,000 and \$1,500 level, the most frequent income being about \$1,300. The following summary statement will aid in showing both the range and the concentration that exists.

Nearly 6 million families, or more than 21 per cent of the total, had incomes less than \$1,000.

About 12 million families, or more than 42 per cent, had incomes less than \$1,500.

Nearly 20 million families, or 71 per cent, had incomes less than \$2,500.

Only a little over 2 million families, or 8 per cent, had incomes in excess of \$5,000.

About 600,000 families, or 2.3 per cent, had incomes in excess of \$10,000.

The aggregate income of the 6 million families at the bottom of the scale, even when the negative incomes shown by some families are eliminated, amounted to

3.5 billion dollars. In other words, about 21 per cent of the families received only 4.5 per cent of the income. The 11,653,000 families with incomes of less than \$1,500 received a total of about 10 billion dollars. At the other extreme, the 36,000 families having incomes in excess of \$75,000 possessed an aggregate income of 9.8 billion dollars. Thus it appears that 0.1 per cent of the families at the top received practically as much as 42 per cent of the families at the bottom of the scale.

At 1929 prices, a family income of \$2,000 may perhaps be regarded as sufficient to supply only basic necessities. However accurate this generalization may be, it is significant to note that more than 16 million families, or practically 60 per cent of the total number, were below this standard of expenditures. Their income aggregated 18.3 billion dollars, as compared with 58.9 billions for the 11 million families having incomes of \$2,000 or more.

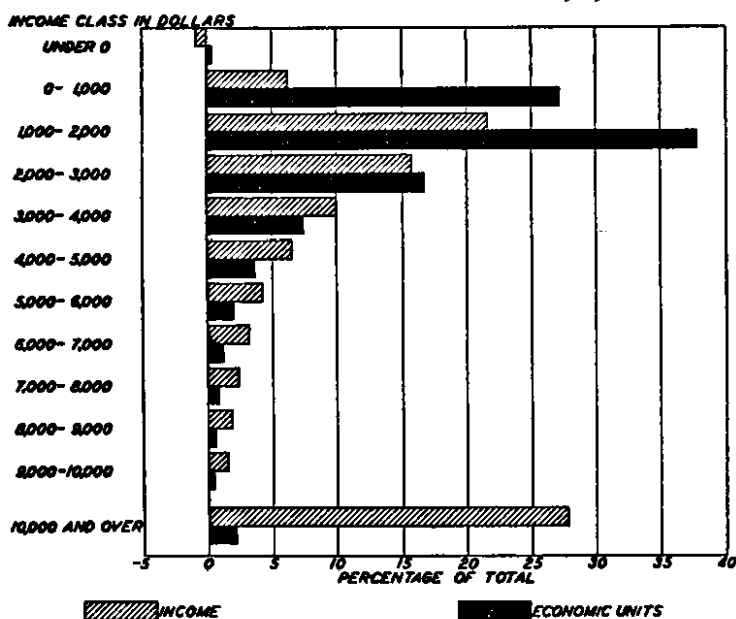
It may be of interest to know the numerical strength and the magnitude of incomes of the groups which are ordinarily regarded as constituting the middle class. There is no hard and fast line of demarcation of this class from the other groups; but we may usefully view separately the incomes of the \$2,000 to \$5,000 group and of the \$5,000 to \$10,000 group. There were 8.9 million families in the former income class, with aggregate incomes of 26.5 billion dollars; and in the latter there were 1.6 million families, having combined incomes of 10.8 billion dollars.

In connection with this analysis it is necessary to call attention again to the fact that in 1929 speculative profits from the sale of securities and other property served to enhance materially the amount of monetary income realized. Since it was chiefly those who had in-

comes in excess of \$4,000 or \$5,000 who were able to participate in speculative activities, the disparity in the incomes of the lower and higher income groups was somewhat greater in that year than normally.

The distribution of income among unattached individuals and one-person families is similarly diverse and similarly concentrated—only more so. For example,

DISTRIBUTION OF INCOME OF FAMILIES AND UNATTACHED INDIVIDUALS, BY INCOME CLASSES, 1929\*



\* For data see Appendix A, Tables 37-40, pp. 227-30.

about 18 per cent have incomes of less than \$500, as compared with about 7.6 per cent in the case of families. About 46 per cent have incomes less than \$1,000, as compared with about 21 per cent among the families. About 82 per cent have incomes under \$2,000, where-

as only about 60 per cent of the families are below the \$2,000 level. Several factors account for the lower incomes of this group. Aside from the fact that among families there are many with more than one income recipient, the unattached individuals represent a selected group with respect to age, sex, and perhaps also efficiency.<sup>1</sup>

The combined distribution of income among all economic units, that is, including both families and unattached individuals, is shown in \$1,000 intervals in the chart on page 57.

## II. DISTRIBUTION OF INCOME AMONG FARM AND NON-FARM FAMILIES

We have seen in Chapter IV that incomes in farm communities are much lower than in urban communities. Moreover, it is a fact that the pattern of consumption for the same income classes is different for farm families as compared with non-farm families. It is, therefore, an essential part of our analysis to set up separately estimates of the distribution of income among the two groups. A study of these separate distributions will clarify some of the disparities in income distribution revealed in the preceding analysis of all families as a group. It will also serve to localize, so to speak, the concentration of both low and high incomes.

Of the 27,474,000 families of two or more persons in 1929 we estimate that about 5,800,000 were farm families and the remaining 21,674,000 non-farm families. The distributions of these two groups in percentages of their respective totals are shown in the chart which appears on page 60. As in the preceding chart, both the proportion of families and the proportion of

<sup>1</sup> For detailed figures of the distribution of income among unattached individuals, see Appendix A, Tables 37-40, pp. 227-30.

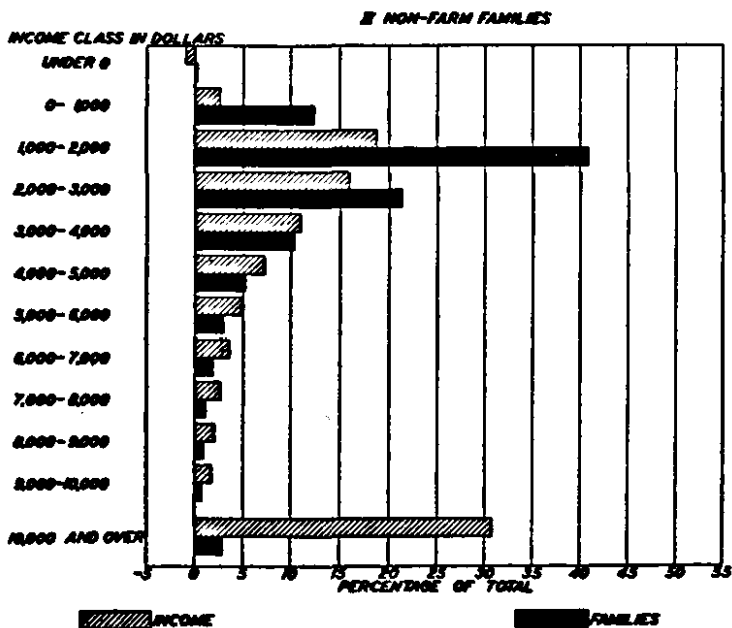
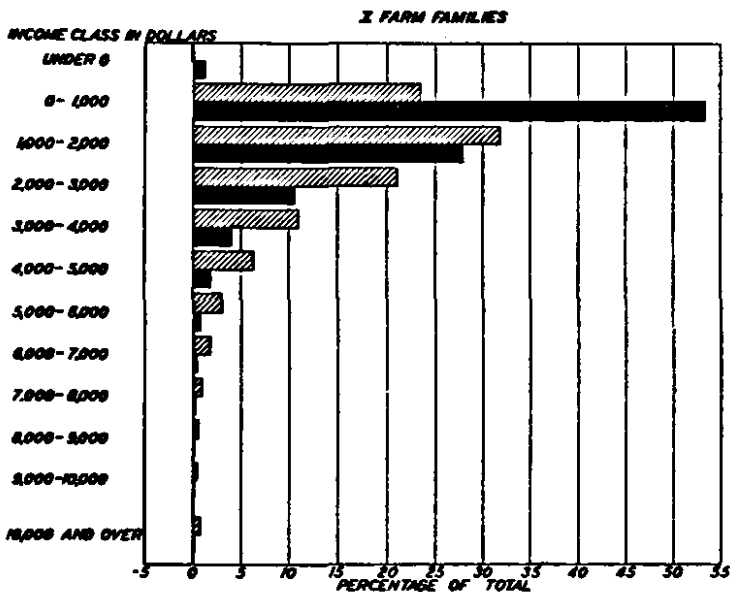
total income are shown in thousand dollar income classes.

Before examining the chart attention is directed to a few general comparisons. The total income received by the farm families, including an allowance for rent and farm produce consumed, and including also the earnings from non-farm activities of all members of the family, amounted to 7.2 billion dollars; the income of the non-farm families amounted to about 70 billion. Thus the 21,674,000 non-farm families received almost ten times as much as the 5,800,000 farm families. The average income of the farm families was \$1,240, as compared with \$3,226 for town and urban families. These wide differences are, of course, explained in considerable part by the weighting effect of the numerous high incomes among the city groups; but the disparity appears great even when this factor is eliminated.

The highest income of the 25 per cent of the farm families at the bottom of the income scale was only about \$500. The corresponding income for the non-farm families was \$1,305. Likewise the lowest 50 per cent of the farm families included no incomes in excess of \$910, while the lowest 50 per cent of the non-farm families included incomes as high as \$1,890. The maximum income among 90 per cent of the farm families was \$2,600, that is, only 10 per cent of these families had incomes in excess of this amount; but among the non-farm families 10 per cent had incomes exceeding \$5,000.

Turning to the chart, we observe that more than 54 per cent of the farm families had incomes under \$1,000. These families included about 23 per cent of the total income of the farm group. In contrast, among the non-farm families only about 13 per cent had incomes under

## DISTRIBUTION OF FAMILY INCOMES AMONG FARM AND NON-FARM FAMILIES, 1929<sup>a</sup>



<sup>a</sup> For detailed data see Tables 37-40, pp. 227-30.



\$1,000, but these families accounted for less than 2 per cent of the total income of the group. This illustrates the fact that, although the income of the farm families was not as high in proportion as that of the other group, it was more evenly distributed. The chart shows that whereas in the non-farm population 2.9 per cent of the families with incomes of \$10,000 and over received nearly 31 per cent of the income, the income classes of \$10,000 and over included only 0.07 per cent of the farm families and about 0.7 per cent of their income.

In comparing farm and non-farm families with respect to their incomes and effective capacity to consume the products of industry it is necessary to bear in mind certain elements of difference in the position of the two groups. As previously noted, in computing farm income the prices used for foodstuffs and other materials produced and consumed on the farm are farm prices, which in general are about 60 per cent of city prices. The price difference is not superficial. It is a real difference in the volume of services the products so consumed contain. Food consumed on the farm has not absorbed handling and transportation service and thus actually represents a smaller volume of consumption for equal physical units than food consumed in the city. A given farm income, therefore, in so far as food and other goods and services supplied by the farm are concerned, carries further than an equal income in the city. On the other hand, if the farmer were to be placed on the same plane of consumption as city families, many items in his budget would cost more than they would in the city. In line with this analysis, many students, viewing the situation from the standpoint of welfare, contend that the advantages of lower cost of food and shelter on the farm are offset by the larger amount of "free" services ac-

cruing to city families in the form of educational, recreational, and cultural facilities. All in all, therefore, it is doubtful if a dollar on the farm is from a consumption standpoint any more effective than a dollar in the city.

It should also be borne in mind that farm families constitute a narrow economic class and cannot be compared fairly with city families in general. The latter embrace many heterogeneous groups. Among farm and urban families of the same general occupational status incomes appear to be not widely dissimilar. That is to say, the incomes of farmers are on the whole much like those of small-scale proprietors in cities. Data bearing on this point will be found in Appendix A, pages 211-12.

**PART II**  
**THE DISPOSITION OF INCOME**

## CHAPTER VI

### THE UTILIZATION OF FAMILY INCOME

With this chapter we pass to the second broad division of the analysis with which this volume is concerned. Having considered the amount of the national income and the distribution of the aggregate income of individuals among various types of claimants, by geographic areas, and among families, we now turn to the disposition which the recipients of this income make of it. We shall consider the expenditures of families and individuals at various income levels for major classes of consumers' goods and indicate the character of national consumption in the aggregate; and we shall show the division of the income both by income classes and in aggregate terms as between consumption and saving. Our first task is to ascertain how American families actually dispose of available incomes.

The use of family income depends upon many circumstances. The amount of the family income and the cost of primary necessities—food, clothing, and shelter—are obviously basic factors in determining the range of possible expenditures. The size of the family, the age and sex of its members, personal desires and idiosyncrasies, and the racial, national, and religious customs of the group to which the family adheres are significant elements in the problem, as are also the size and character of the community in which the family lives, the occupations of the members of the family, and the pressure of social and business interests upon the family and its members.

Such considerations naturally result in wide varia-

tions in the proportion of family incomes devoted to particular purposes. It is, however, beyond the scope of this investigation to make a comprehensive survey of the relative influence of the factors which govern family expenditures. We are here concerned with the variations in family expenditures which are directly associated with the size of the family income. Our discussion is confined to families in the ordinary sense of that word—that is, two or more individuals living together. Expenditures of unattached individuals, whether or not they were designated by the Census of 1930 as “one-person families,” are not included.

The data which we present in the following pages have been drawn from various surveys of family expenditures made during the twelve years from 1918 to 1930. The most extensive of these surveys, covering more than 12,000 families, was that made by the Bureau of Labor Statistics in 1918-19. Although some changes have occurred in the character of family disbursements in the various income groups since 1919, the data for that year may nevertheless be regarded as giving a fairly accurate picture of the situation a decade later.<sup>1</sup> Investigations made since that time, though covering smaller numbers of families, relate to diversified groups of families living in various parts of the United States, with incomes ranging as high as \$20,000 a year.

Family expenditures have been classified in five major categories: (1) food; (2) shelter and home maintenance; (3) attire; (4) “other living”; and (5) savings. The “shelter and home maintenance” category includes rent or its equivalent, fuel and light, furniture and furnishings, and household operation. Under “at-

<sup>1</sup> For a discussion of the significance of these changes, see Appendix B, pp. 252-53.

ture" we have included amounts spent for clothing, jewelry, tonsorial service and toilet articles, and for the care of clothing. "Other living" includes all current living expenses not classified elsewhere, and consists chiefly of expenditures for transportation, medical care, education, recreation, tobacco and liquor, gifts and contributions to dependents. "Savings" include life and health insurance premiums, as well as the sums designated as "surplus" in surveys of family expenditures. That is, it is a figure intended to cover the full amount set aside for investment, for future use, or for contingencies. A deficit, or negative savings, means that expenditures for current living have actually exceeded the income, the difference being met by withdrawing past savings or incurring indebtedness. It should be noted, however, that errors in reporting, owing to the failure of housewives or other informants to estimate accurately the amount of total expenditures for living, are reflected in the estimates of savings.

It has seemed desirable for the purpose in hand to study separately the expenditures of various types of families. Accordingly, in the following discussion we consider in turn the disposition of income by the families of wage earners, farmers, and business and professional groups respectively.

#### I. WAGE-EARNERS' FAMILIES

Non-farm families with incomes under \$3,000, which are predominantly the families of wage earners, numbered 16 millions in 1929, or 59 per cent of the total number of families in the nation. The studies which have been made enable us to present the allocation of expenditures among significant selected groups of wage-earners' families, at four income levels, averaging

around \$800, \$1,300, \$1,800, and \$2,700 respectively. The last of these classes consists chiefly of families in which earnings of wives and children are substantial. Among families studied by the Bureau of Labor Statistics in 1918-19, for example, the earnings of the husband in the \$1,800 class accounted for 88 per cent of the average family income, while the earnings of the husband in the \$2,700 class represented only 64 per cent of the family income.

In the chart facing this page we present graphically the allocation of family expenditures by these various groups. In compiling the data for the chart we made use of the results of seven special studies. For convenience in reading the chart these various groups of families are designated, by letters, as follows:<sup>2</sup>

- A—Families of nation-wide distribution, 1918-19;
- B—Families of typographers in San Francisco, 1920 and 1921;
- C—Families of street-car men in the San Francisco East Bay region in 1924 and 1925;
- D—Families of federal government employees in Baltimore, Boston, New York, Chicago, and New Orleans, 1927 and 1928;
- E—Families of railroad maintenance-of-way workers in ten states, 1928;
- F—Mexican families in San Diego, 1929 and 1930;
- G—Families in cities of more than 10,000 population in five North Central and Middle Atlantic states, 1930.<sup>3</sup>

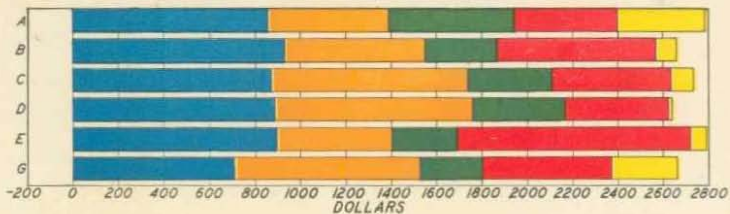
The first of these groups comprises families covered by the investigation of the Bureau of Labor Statistics in 1918-19, to which reference has already been made. This survey excluded families without children, al-

<sup>2</sup> For details as to size of each of the samples, the agency, group, or individual conducting the several investigations, and as to the special tabulations made for this study, see Appendix B, pp. 240-49.

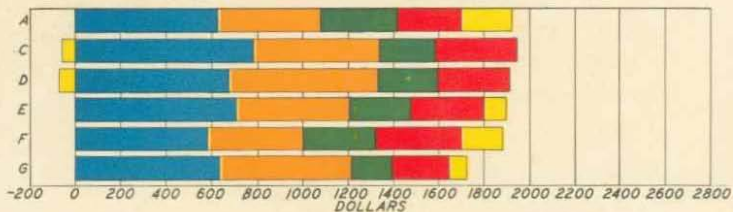
<sup>3</sup> Groups D, F, and G include some families in which the chief earner is engaged in business or professional pursuits.

# EXPENDITURES OF WAGE-EARNERS' FAMILIES<sup>a</sup>

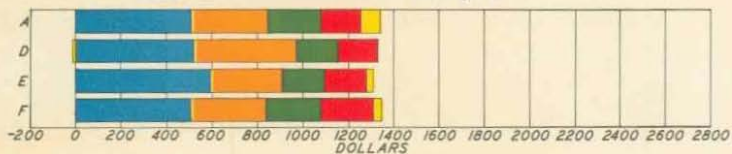
## I FAMILIES WITH INCOMES ABOUT \$2700



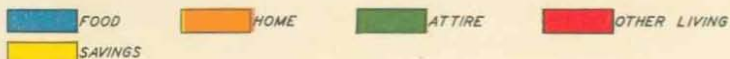
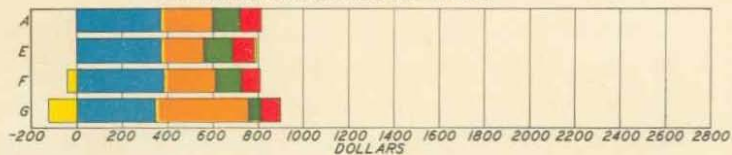
## II FAMILIES WITH INCOMES ABOUT \$1800



## III FAMILIES WITH INCOMES ABOUT \$1300



## IV FAMILIES WITH INCOMES ABOUT \$800



<sup>a</sup> For data see Appendix B, Table 1, pp. 246-47.



though such families constitute about one-fourth of all the families of the nation; hence the average size of the families whose expenditures were collected was 4.9 persons, as compared with 4.2 persons for all families in the nation. Other important exclusions were non-English speaking families which had been in the United States less than five years, families living in slums or receiving assistance from charity, and Negro families in Southern cities.<sup>4</sup> The other investigations, made in various years since 1919, relate to specialized groups less comprehensive in character, but affording nevertheless a view of the expenditure patterns of varied types of workers living in different parts of the country.

In studying this chart attention is directed first to the general similarity in expenditures by the families in the various surveys. This similarity is an indication that the allocation of income shown is representative of the wage-earning and low salaried classes as a whole.

The variations in expenditures are such as would be expected from the character of the groups involved. In the \$2,700 class, for example, expenditures for food range from \$715 to \$932, and those for shelter and home maintenance from \$508 to \$871. In the low income class the range for food was from \$346 to \$382, and for the home from \$192 to \$412. The explanation of the low figure for shelter and home maintenance in the case of maintenance-of-way workers is that many of the lowest paid workers receive free quarters in box cars or shacks, evaluated at \$5.00 per month, and the great majority of the workers live in rural, or at least suburban, regions. The group with the highest expenditure

<sup>4</sup> Less important exclusions were families which had changed their localities within a year, families which had more than three lodgers, and families in which working children kept a part or all of their earnings and whose personal expenditures were not covered by the data.

for shelter and home maintenance consisted of urban families in North Central and Middle Atlantic states; moreover, this particular survey was made in 1930, and contains some families whose incomes had been reduced but who were still occupying living quarters contracted for when their earnings were higher.

Expenditures for attire at each income level show a relatively narrow range of variation. The families in the urban regions of the North Central and Middle Atlantic states show the lowest expenditures, probably because that survey was made in 1930, after the beginning of the depression, when such outlays would be the first to be curtailed; while the highest expenditures are shown by the 1918-19 survey, owing, presumably, to the relatively high prices of clothing as compared with the later years.

The greatest variations are shown in the "savings" item, which represents the difference between family income and consumptive expenditures. Not too much importance should be attached to the negative savings shown for some groups of families, for the figures are only approximately accurate. Moreover, the families with the largest average deficit, in the lowest income class, were those surveyed in 1930, during the early phase of the business depression, and included several families whose incomes had been sharply reduced on account of unemployment, but who had not made compensating adjustments in their expenditures.

Second, attention is directed to the relation between the amount of the family income and the expenditures for the major purposes. The amount spent for food, for example, increases from less than \$400 for families in the \$800 income class, to more than \$500 in the \$1,300 class, to an average of about \$650 in the \$1,800

group, and to nearly \$900 in the \$2,700 group. Families in the \$2,700 income class thus spend well over twice as much for food as families in the \$800 class.

Expenditures for shelter and home maintenance show similar increases, with the variation between the lowest and the highest income strata slightly greater than in the case of food. The average amount spent for attire by families in the \$2,700 class is about three times the amount spent by families in the \$800 class; while families in the latter class spend only about one-seventh as much as those in the former for "other living." There are no appreciable savings among the families with incomes about \$800 or about \$1,300. Even in the \$1,800 and \$2,700 income groups savings are not large—owing to the fact that expenditures for such items as shelter, transportation, health, education, and recreation expand materially.

## II. SKILLED WORKERS AND THE LOWER MIDDLE CLASS

The families to which we now turn our attention are the non-farm families whose incomes range from \$3,000 to \$6,000—numbering 4 millions in 1929, or 14 per cent of all families of two or more persons. Within these limits are several groups of wage-earning families, notably skilled mechanics, machinists, typographers, steel workers, hosiery mill operatives, and families in which there were two or more full-time workers. However, the majority of the families within this range of incomes are the families of men engaged in business or professional pursuits.

There is no clear line of demarcation in economic status or habits of living between the ranks of the skilled workmen and those of business and professional people. Because of this situation we utilized, in the chart opposite

page 72, surveys which relate to definite groups of skilled workers or professional families, and also those in which families of skilled workers, business men, and professional families are not segregated. The reader should bear in mind, however, that the families whose expenditures are shown in this chart are not representative of all the families within these income limits. Families of independent business men, salaried officials of business corporations, and independent professional men such as physicians, lawyers, and dentists are in most cases unrepresented. It is believed, however, in view of the similarity in patterns of expenditure among the groups included in the surveys, that the data are fairly representative of all families within the income range to which they relate.

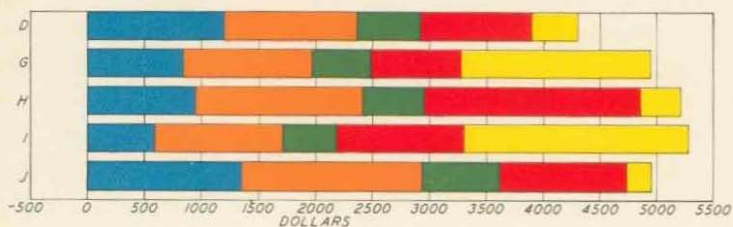
The six surveys on which this chart is based include three which were utilized in the preceding chart, and three additional ones. They are designated, by letters, as follows:

- B—Families of typographers in San Francisco in 1920 and 1921;
- D—Families of federal government employees in Baltimore, Boston, New York, Chicago, and New Orleans, 1927 and 1928;
- G—Families in cities of more than 10,000 population in five North Central and Middle Atlantic states, 1930;
- H—Families of instructors and professors at the University of California, 1922;
- I—Village and city families in Minnesota in 1926, 1927, and 1928;
- J—Residents of the Amalgamated Apartments, New York City, 1930.

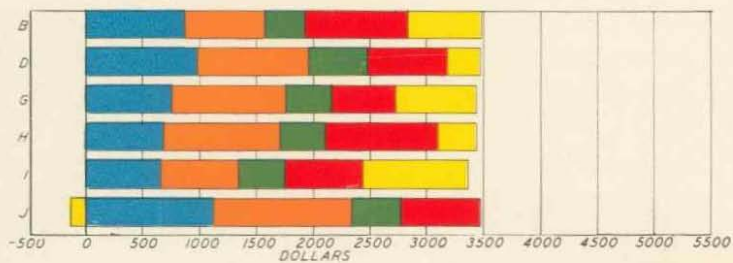
The same five categories of expenditures are used in this chart as in the preceding one; and, for purposes of comparison, the expenditures of families in the \$2,700 in-

## EXPENDITURES OF SKILLED-WORKERS' AND MIDDLE-CLASS FAMILIES<sup>a</sup>

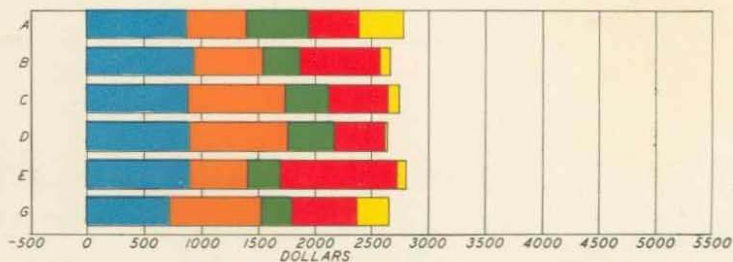
I FAMILIES WITH INCOMES ABOUT \$5000



II FAMILIES WITH INCOMES ABOUT \$3400



III FAMILIES WITH INCOMES ABOUT \$2700



<sup>a</sup> For data see Appendix B, Table 1, pp. 246-49.

come class are repeated. The groups listed as having incomes averaging \$3,400 cover a range, in the several surveys, from \$3,000 to \$4,000; while those listed as averaging \$5,000 include families with incomes ranging from \$3,600 to \$6,000.

There are substantial differences in the character of family expenditures as we move up from families in the \$2,700 level to those in the \$5,000 level. Expenditures on food, for example, increase only moderately, as compared with the increases for the other categories. In all of the groups shown on the preceding chart, the largest expenditures are for food. Beyond \$3,000, however, expenditures for shelter and home maintenance generally run higher than those for food. Expenditures on attire, which among families with incomes under \$1,000 are typically about a third as large as those for food, are usually more than half as great among families with incomes around \$5,000.

The most striking changes occur in the expenditures for "other living" and in the amount of savings. Whereas families with incomes around \$800 commonly spend about one-eighth of their incomes for purposes other than food, home, and attire, those at the \$5,000 level usually spend about one-fourth or one-third. In view of the importance of this category of expenditures, we present, in the table on page 74, a breakdown of the items, for four groups of families with incomes about \$5,000.

The most striking case of large expenditures for "other living" is that of families of the University of California faculty. Among these families, those with incomes averaging approximately \$3,400 spent almost \$1,000 for "other living," and those with incomes averaging \$5,200 spent as much as \$1,900, or more than

one-third of their incomes. These relatively large expenditures are to be explained in large part by professional and social requirements. The faculty families spent distinctly more for organizations, recreation and

EXPENDITURES FOR "OTHER LIVING" BY FAMILIES WITH INCOMES ABOUT \$5,000<sup>a</sup>

Item	University of California Faculty, 1922	Village and Urban Families in Minnesota, 1926-28	Federal Government Employees in Five Cities, 1927-28	Residents of Amalgamated Apartments, New York City, 1930
Range of income...	\$4,500-6,000	\$5,000-6,000	Over \$3,600	Over \$4,000
Average income...	5,219	5,282	4,320	4,955
<b>OTHER LIVING</b>	<b>1,905</b>	<b>1,119</b>	<b>986</b>	<b>1,123</b>
Transportation...	515	607	273	92
Medical care....	335	117	260	258
Education and reading matter	121	67	107	262
Organizations and professional expense....	265	19	17	41
Recreation and travel.....	274	69	126	258
Aid to dependents and gifts	237	80	84	b
Church and charity .....	85	103	60	95
Tobacco .....	21	27	31	30
Unclassified.....	52	30	28	87

<sup>a</sup> Excludes expenditures for food, shelter and home maintenance, and attire and adornment.

<sup>b</sup> Not separately reported.

travel, and for gifts and contributions, than families included in other surveys. On the other hand, expenditures of village and urban families in Minnesota were low for these items and also for medical care.

As would be expected, savings were much greater among families with incomes above \$3,000 than among

those in the lower income groups. There are, however, pronounced variations in the amounts saved. The highest savings shown, both for the class with incomes about \$3,400 and for that with incomes about \$5,000, are those of village and urban families in Minnesota and urban families in the North Central and Middle Atlantic states. For families with incomes around \$5,000, these savings amounted to more than a third of their incomes. At the other extreme families of the University of California faculty, with approximately the same income, saved only 7 per cent of their income, and residents of the Amalgamated Apartments, in 1930, only 4 per cent. The latter case is in part explained by the onset of the business depression, and the inability immediately to adjust living expenses to reduced incomes.

### III. FARM FAMILIES

Farm families in 1930 constituted 23 per cent of all families of two or more persons. With very few exceptions their incomes were less than \$6,000, and a large proportion of them had incomes of not more than \$1,500. Their incomes therefore cover about the same range as that of wage earners, skilled workers, and the business and professional families discussed in the preceding sections.

Conditions of living among farm families, however, differ greatly from those prevailing among the wage-earning and urban middle-class families. For the most part, residences are attached to the farm property, and large quantities of food are produced on the farm. The cash income of farmers is therefore spent in a way quite different from that prevailing among wage-earners' families. Much of this difference disappears, however,

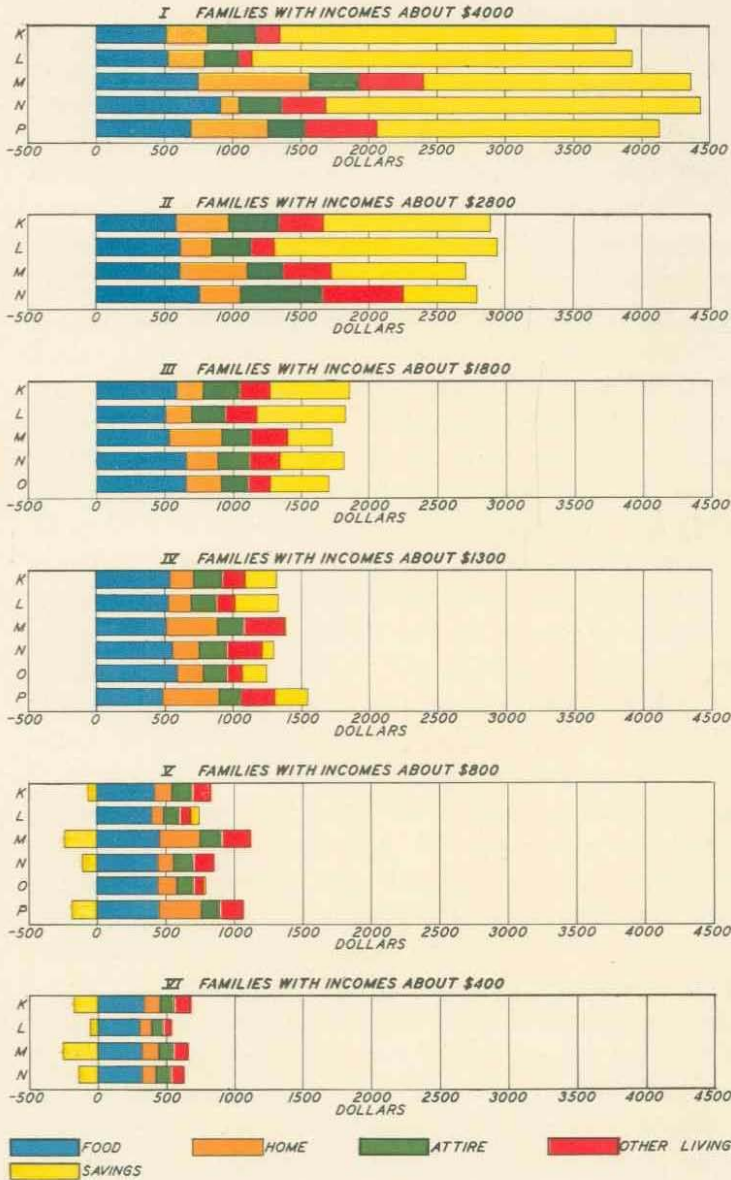


when the occupancy of homes and the food obtained from the farms are evaluated and included in the measurement of the income of farm families.

Our knowledge of what farm families do with their cash incomes and of the value of food, fuel, and house occupancy obtained from their farms is derived chiefly from surveys of farm management and family expenditures made by various state colleges of agriculture and experiment stations in co-operation with the United States Department of Agriculture. The surveys of this sort which are most valuable are those made in three counties of Ohio in 1926, two counties of Kentucky in 1928 and 1929, seven counties of Wisconsin in 1929, and two Appalachian Highland counties in 1930. Farm conditions in these regions vary greatly. In the Ohio counties farming is to a considerable extent a part-time occupation, and a substantial share of family income is obtained from work elsewhere—in mines, factories, on roads, and in other ways. The Kentucky counties are diversified farming regions, one in the Ohio Valley, the other in the foothills of the eastern part of the state. Varied types of farming are represented by the Wisconsin counties: dairying, cheese making, hog raising, potato growing and dairying, and subsistence farming in the northern cut-over area. The Appalachian counties, in eastern Kentucky and western Virginia, are predominantly devoted to subsistence farming.

The families embraced by these studies do not cover the general farming areas of New England and the Northeastern states, the cotton farming of the South, the grain farming and livestock raising of the western Mississippi plains and highlands, or the specialized fruit and vegetable farming of Florida, California, New Jersey, and other regions. The families covered by the

## EXPENDITURES OF FARM FAMILIES<sup>a</sup>



<sup>a</sup> For data see Appendix B, Table 2, pp. 250-51.

available studies do, however, represent quite varied sections of the farm population. When we find, therefore, that families with the same total incomes (cash incomes plus the value of living obtained from the farm) dispose of these incomes in approximately the same way in the various counties covered by the investigations, we may assume that this is fairly typical of families with the same incomes in other sections of the country.

The results of these investigations, supplemented by information drawn from surveys made in Arkansas and New York by other agencies, are shown in the accompanying chart. The locations of the six groups of farm families for which data are presented are as follows:

- K—Ohio (three counties), 1926;
- L—Kentucky (two counties), 1928-29;
- M—Wisconsin (seven counties), 1929;
- N—Appalachian (two counties), 1930;
- O—Arkansas (one county), 1924;
- P—New York (one county), 1927-28.

If this chart is compared with those relating to wage-earners' families, it will be noted that farm families in the \$800 income level spend slightly more for food, for attire, and for "other living," than families of wage earners. They spend somewhat less than wage earners for shelter and home maintenance, on account of the relatively low rental value of farm homes.

For incomes above \$1,500, however, farm families spend smaller amounts than urban families for each of the four categories of living expenses: food, shelter and home maintenance, attire, and "other living." While farm families, like non-farm families, increase their expenditures on each of these items as their incomes are increased, the rate of increase in expenditures is not as rapid as among the non-farm families. Thus when in-

comes of \$4,000 are reached, the farm families spend only about three-fourths as much for food and for attire as do non-farm families, and only about half as much for shelter and home maintenance and for "other living."

These differences in expenditures for living are, of course, reflected in differences in savings, the average savings of farm families with incomes from \$2,500 to \$6,000 being typically four or five times as great as the average savings of non-farm families. The savings of farmers, in these surveys, include income reinvested in their farm properties, and the net increase in their herds of livestock.

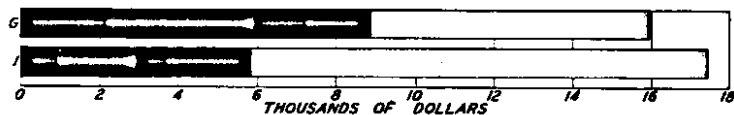
#### IV. BUSINESS AND PROFESSIONAL FAMILIES WITH INCOMES FROM \$6,000 TO \$25,000

Families with incomes above \$6,000, belonging for the most part to the ranks of business and professional men, constitute only 6 per cent of all families. They received, however, approximately 37 per cent of the income received by all families in 1929. Their expenditures are therefore fully as important in the national economy as the expenditures of the families discussed in preceding sections of this chapter.

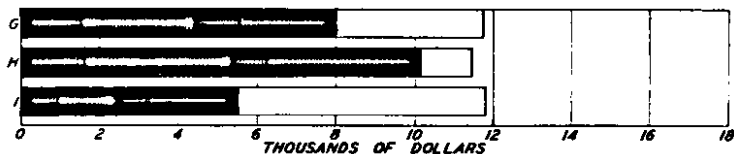
Only three surveys are available which show the use that is made of the entire income of families with incomes above \$6,000. All of these samples are small, and when the families are classified into appropriate income groups there are only a few in each group. Moreover, they constitute special groups which may not be typical of the entire business and professional class. We are, nevertheless, showing the expenditures of these families in the chart opposite page 79, and comparing them with the expenditures of families with incomes

# EXPENDITURES OF FAMILIES OF PROFESSIONAL AND BUSINESS MEN<sup>a</sup>

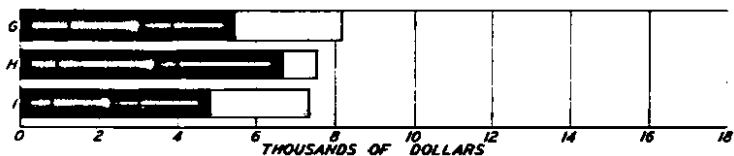
## I FAMILIES WITH INCOMES ABOUT \$16,000



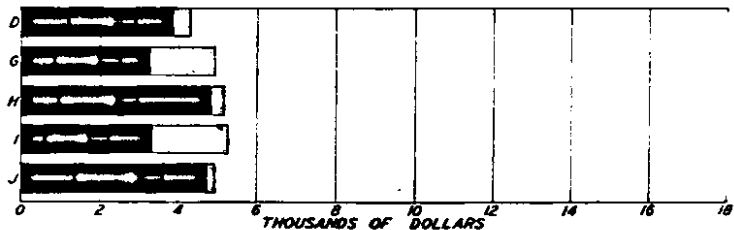
## II FAMILIES WITH INCOMES ABOUT \$11,000



## III FAMILIES WITH INCOMES ABOUT \$7,500



## IV FAMILIES WITH INCOMES ABOUT \$5,000



<sup>a</sup> For data see Appendix B, Table 1, pp. 248-49.

from \$4,000 to \$6,000. The three surveys from which these families are drawn are as follows:

- G—Families in cities of more than 10,000 population in five North Central and Middle Atlantic states in 1930;
- H—Families of the faculty of the University of California, 1922;
- I—Village and urban families in Minnesota in 1926, 1927, and 1928.

These samples show wide diversity in the use of income among families with more than \$6,000 a year. Village and urban families in Minnesota with incomes from \$10,000 to \$15,000, for example, spent about \$950 for food, \$1,450 for shelter and home maintenance, \$800 for attire, and \$2,300 for "other living." In contrast, members of the University of California faculty, with approximately the same income, averaged \$1,600 for food, \$3,700 for shelter and home maintenance, \$900 for attire, and \$3,900 for "other living."

For these two groups of families—the faculty of the University of California and village and urban families in Minnesota—further details regarding expenditures in the category of "other living" are given in the table on page 80.

If the expenditures of these families are compared with those of families in the same communities, but with smaller incomes (see the table on page 74), it will be seen that the amounts spent for transportation, medical care, education, organizations, and recreation all rise rapidly with increased incomes.

There are striking variations in regard to the amount of savings among the families in these surveys. Among families with incomes from \$10,000 to \$15,000, for example, families of the faculty of the University of California in 1922 saved about \$1,300, those in urban cities

in North Central and Middle Atlantic states (mostly in New York City) saved about \$3,700, while the village and urban families in Minnesota saved more than \$6,000.

EXPENDITURES FOR "OTHER LIVING" BY BUSINESS AND PROFESSIONAL FAMILIES WITH INCOMES FROM \$10,000 TO \$15,000

Item	University of California Faculty, 1922	Village and Urban Families in Minnesota, 1926-28
Average income .....	\$11,462	\$11,810
<b>OTHER LIVING</b>	<b>3,903</b>	<b>2,278</b>
Transportation .....	989	838
Medical care .....	610	208
Education and reading matter .....	412	334
Organizations and professional expense .....	449	69
Recreation and travel .....	846	246
Aid to dependents and gifts .....	375	268
Church and charity .....	80	181
Tobacco .....	57	67
Unclassified .....	85	67

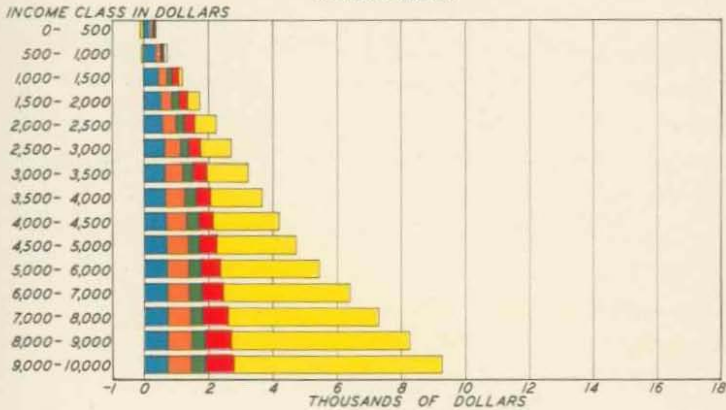
#### V. AVERAGE FAMILY EXPENDITURES

On the basis of the evidence afforded in the surveys which we have summarized above as to the disposition of family incomes we are now in a position to give a general picture of the character of the expenditures of American families in the various income groups. For this purpose it is necessary to reduce the various estimates shown in the preceding sections to an average that can be applied to the population as a whole.<sup>5</sup> In the chart on the accompanying page we present the results obtained, showing farm and non-farm families separately. The highest income group among the farm families is \$9,000 to \$10,000 and among the non-farm families \$15,000 to \$20,000.

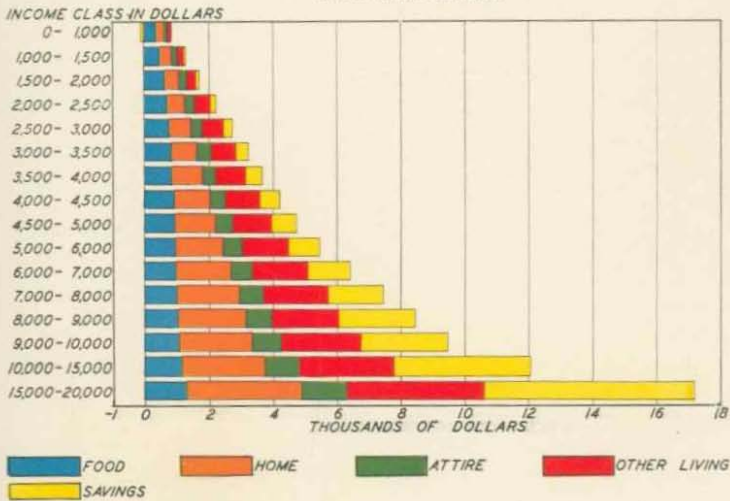
<sup>5</sup> For the method of deriving this average, see Appendix B, pp. 254-58.

## EXPENDITURES OF FAMILIES BY INCOME GROUPS<sup>a</sup>

### I FARM FAMILIES



### II NON-FARM FAMILIES



<sup>a</sup> For data see Appendix B, Table 4, p. 257.



*UTILIZATION OF FAMILY INCOME* 81

Detailed comments with reference to the expenditure distribution shown by this chart are unnecessary, for in the nature of the case they are a composite picture of what has already been revealed in the special surveys analyzed above. The figures derived will, however, be used in building up estimates of the aggregate consumptive expenditures and aggregate savings of all families in the various income groups. This will be the task of ensuing chapters.

## CHAPTER VII

### AGGREGATE CONSUMPTIVE EXPENDITURES

In the preceding chapter we presented data drawn from surveys of family expenditures, showing for what purposes typical American families utilize their incomes. On the basis of the pattern of expenditures there shown, we are now in a position to build up estimates of the aggregate consumptive expenditures of the American people, as a whole and by income groups. It is possible also to give a rough allocation of these expenditures among the major categories—food, shelter, attire and adornment, and “other living.” The savings made by the various classes are considered in the following chapter.

The analysis which follows is divided into three parts: the first shows the expenditures of families classified by income groups; the second considers the expenditures of unattached individuals; and the third indicates the expenditures of the population as a whole classified in broad economic groups.

#### I. DISPOSITION OF FAMILY INCOMES

Families of two or more persons comprise 91 per cent of the population. In consequence, their expenditures for food, shelter and home maintenance, attire and adornment, and “other living” constitute the bulk of the total national expenditures. The method of estimating aggregate family expenditures is the simple one of applying the average amount spent by families in the various income classes, as estimated in the preceding chapter, to

the number of families in each class, as estimated in Chapter V. In order to show as concretely and as adequately as possible the variations in expenditures in the different income groups, we classify the data in more than one way.

First, we show the aggregate consumptive expenditures of families by income groups in 1929.<sup>1</sup> These estimates are shown in the table on page 84. The reader should be informed that the consumptive expenditures given include philanthropic contributions and direct taxes. While the direct taxes may be utilized by the government to provide consumptive satisfactions to the population as a whole, and may thus be regarded as consumptive expenditures from a national point of view, in the groups which make such contributions to the general welfare they should be eliminated as personal consumption. They have been included only because it is impossible to eliminate them for each of the separate income classes. We estimate, however, that these items for the groups above \$5,000 aggregated approximately 1.2 billion dollars. In the chart opposite page 85 these items have been shown separately for the top 10 per cent of the population, which includes all incomes in excess of about \$4,600.<sup>2</sup>

<sup>1</sup> Families with incomes in excess of \$20,000 were not covered in the surveys shown in the preceding chapter. Consequently it was necessary to obtain information regarding the proportion of their incomes devoted to consumptive purposes from a representative group of such families. See Appendix B, pp. 254-55.

<sup>2</sup> This figure of 1.2 billion dollars is arrived at as follows: (1) Total federal income taxes for 1928 (paid in 1929) amounted to slightly less than 1.2 billion dollars. Families with incomes of less than \$5,000 paid only a few million dollars in income taxes, but, on the other hand, unattached individuals above and below the \$5,000 level paid very substantial sums. We estimate taxes of families above \$5,000 to amount to approximately 900 million dollars. (2) Gifts received by educational institutions during the school year 1929-30 amounted to 142 million

The consumptive expenditures of the 78 per cent of the families (21.5 millions) having incomes below \$3,000 aggregated 50 per cent of the total expenditures for all families. The expenditures of the 16.4 million families with incomes below \$2,000, comprising 60 per cent of the population, aggregated nearly one-third of

AGGREGATE CONSUMPTIVE EXPENDITURES OF FAMILIES  
BY INCOME GROUPS, 1929

Income Class (In dollars)	Number of Families (In thousands)	Aggregate Con- sumptive Expendi- tures (In millions of dol- lars)
Under \$1,000.....	5,899	5,038
1,000 to 2,000.....	10,455	14,563
2,000 to 3,000.....	5,192	11,096
3,000 to 4,000.....	2,440	7,069
4,000 to 5,000.....	1,232	4,480
5,000 to 10,000.....	1,625	8,271
10,000 to 20,000.....	412	3,519
20,000 to 100,000.....	195	4,304
100,000 and over.....	24	3,637
All classes.....	27,474	61,977

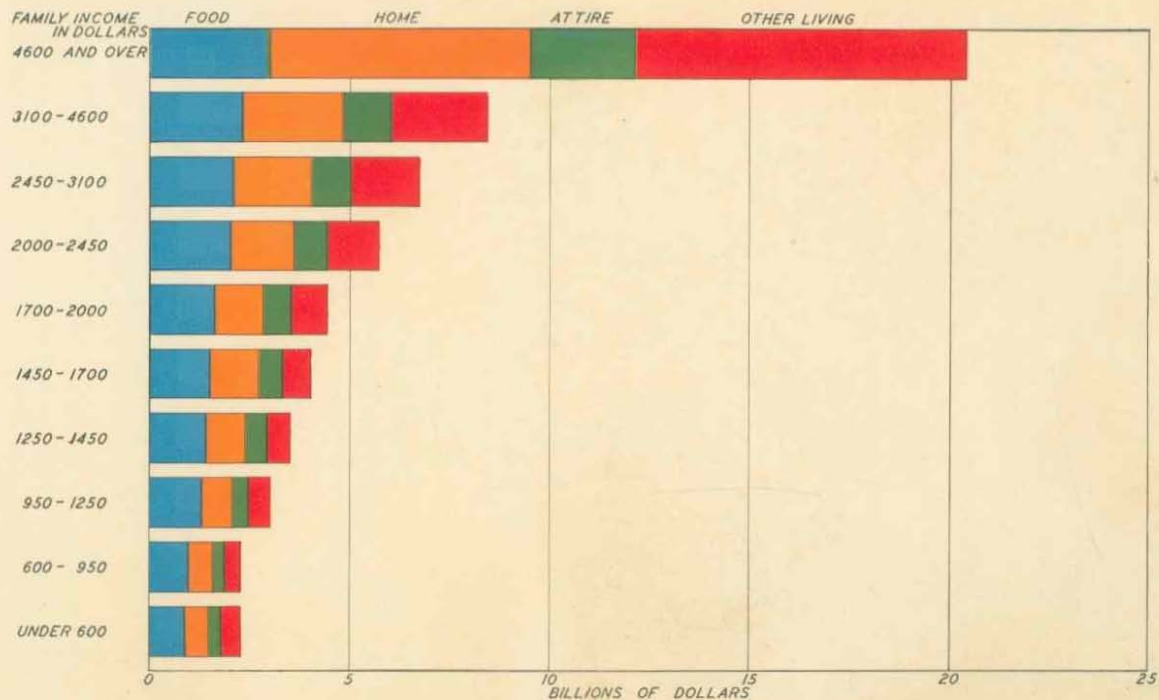
the total. Families with incomes above \$20,000, numbering 219,000 and comprising less than one per cent of the population, consumed in the aggregate (with allowance for direct taxes and philanthropic contributions) as much as the 5.8 million families in the \$1,000 to \$1,500 income class.

Next we divide the families of the nation into ten equal groups, each containing 2.75 million families. For these groups the chart facing page 85 shows the estimated annual expenditures for each of the four types of

dollars, the greater part of which undoubtedly came from families and single persons with incomes over \$5,000. Making allowance for other contributions, and for income taxes paid in a few states, we estimate that something like 1.2 billion dollars represents the amount of taxes and contributions combined for families above \$5,000.

CLASSIFIED CONSUMPTIVE EXPENDITURES OF AMERICAN  
FAMILIES IN 1929<sup>a</sup>

(Each bar represents 2,750,000 families)



<sup>a</sup> For detailed data see Appendix B, Table 7, p. 262.

consumptive expenses—food, home, attire, and “other living.” As already indicated, we have eliminated as far as possible direct taxes and philanthropic contributions. In the first group these items amount to approximately 1.2 billion dollars, and in the second group to less than 100 million dollars. (See note 2, page 83.)

The 10 per cent of the families at the top of the income scale reaches down as far as those with incomes of \$4,600. The consumptive outlays of these families equalled approximately one-third of the total. For the major classes of commodities the proportions were as follows: food, 17 per cent; shelter and home maintenance, 37 per cent; attire and adornment, 31 per cent; “other living,” 48 per cent.

An equal number of families at the bottom of the income scale, with incomes under \$600, consumed 4 per cent of the total, apportioned as follows: food, 5 per cent; shelter and home maintenance, 3 per cent; attire and adornment, 4 per cent; “other living,” 3 per cent.

Arranging the data in another way, we find that nearly half of the total expenditures for “other living” were made by the upper 10 per cent of the families; half of the total for attire and adornment by the upper 24 per cent; half of the total for shelter and home maintenance by the upper 20 per cent; and half of the total for food by the upper 36 per cent.

## II. DISPOSITION OF AGGREGATE INCOME OF UNATTACHED INDIVIDUALS

Individuals who are not members of families of two or more persons comprised in 1929 about 9 per cent of the total population, or approximately 11 million persons. Of these unattached individuals, 1.5 million are inmates of prisons and eleemosynary institutions. Since

their consumptive needs are met chiefly at public or institutional expense, they will not be included here. The remainder of the unattached individuals may be classified into six groups, as follows: 2.4 million one-person families, or single individuals who maintain separate places of residence; 900,000 lodgers in hotels and lodging houses; 5 million lodgers in private families; 800,000 resident servants; 275,000 persons employed at military and naval posts, as crews of vessels, and at labor camps; and 250,000 residents of boarding schools and other quasi-family groups. Some of these unattached individuals are supported by parents or relatives and what they spend has therefore been included among the expenditures of families. When these have been eliminated there remain about 9 million unattached individuals who are income recipients.

Among these unattached individuals there is the greatest variation in income and mode of living. Some are wealthy and spend lavishly; the great majority are people with moderate incomes; while at the bottom we find tramps and intermittent workers with no fixed place of abode. Surveys of household expenditures have usually been focussed on the family, and only a few studies have been made covering the expenditures of single persons. There is therefore relatively little statistical information available regarding the use of income by unattached individuals.

Despite the paucity of information, however, it has been found possible to make a rough estimate of the consumptive expenditures of these individuals for the year 1929.<sup>8</sup> The aggregate amount works out at a little over 13 billion dollars, apportioned as follows (in millions of dollars):

<sup>8</sup> The methods used and the assumptions involved in making the estimates are given in Appendix B, pp. 262-65.

Food .....	2,788
Shelter and home maintenance .....	3,530
Attire .....	2,690
Other living .....	4,183

While admittedly crude, these estimates afford a fair idea of the consumptive outlays of the 9 million unattached individuals who were income recipients in that year.

III. CONSUMPTIVE EXPENDITURES BY BROAD ECONOMIC CLASSES

In order to provide a general picture of the aggregate amounts spent for various purposes by all families and unattached individuals in the chief economic strata, we have grouped the population as a whole in six classes, more or less arbitrarily arranged. These classes, together with the number of families and unattached individuals in each, are given in the accompanying table.<sup>4</sup>

CLASSIFICATION OF FAMILIES AND UNATTACHED INDIVIDUALS INTO BROAD ECONOMIC GROUPS

Group	Income Range		Number		Percentage of Total Population
	Families	Unattached Individuals	Families	Unattached Individuals	
Wealthy.....	\$25,000 and over	\$15,000 and over	160,000	66,000	0.6
Well-to-do...	10,000 to 25,000	5,000 to 15,000	471,000	241,000	1.8
Comfortable.	5,000 to 10,000	2,500 to 5,000	1,625,000	632,000	5.9
Moderate circumstances	3,000 to 5,000	1,500 to 2,500	3,672,000	1,900,000	13.7
Minimum comfort...	1,500 to 3,000	750 to 1,500	9,893,000	3,649,000	35.7
Subsistence and poverty	Under \$1,500	Under \$750	11,653,000	2,500,000	42.3

<sup>4</sup>The classification ignores certain factors which are important in determining the actual scale of living of a family. Thus a family of two



The aggregate income of the families and individuals in each of these six classes and their consumptive expenditures are shown in the following table:

CONSUMPTIVE EXPENDITURES OF FAMILIES AND UNATTACHED INDIVIDUALS  
BY BROAD ECONOMIC GROUPS  
(In billions of dollars)

Group	Income	Expenditures				
		Food	Home	Attire	Other Living*	Total*
Wealthy.....	18.3	0.4	2.2	1.0	5.3	8.9
Well-to-do.....	8.7	0.7	1.8	0.8	2.3	5.6
Comfortable....	12.9	1.9	3.3	1.5	3.4	10.1
Moderate cir- cumstances...	17.5	3.8	4.4	2.3	4.3	14.8
Minimum com- fort.....	24.6	7.6	6.2	3.6	5.0	22.4
Subsistence and poverty.....	10.9	5.4	3.6	1.9	2.4	13.3
All groups..	92.9	19.8	21.5	11.1	22.7	75.1

\* Including direct taxes and philanthropic contributions.

The wealthy and well-to-do, including all families with incomes over \$10,000 and unattached individuals with incomes over \$5,000, constitute only 2.4 per cent of the population. Yet these two groups account for 6 per cent of the total spent by all families and unattached individuals for food, 19 per cent of the total for shelter and home maintenance, 16 per cent of the total for attire, and 33 per cent of the total for "other living." On the other hand, the subsistence and poverty group, including families with incomes under \$1,500 and unattached individuals with incomes under \$750, constitute 41 per cent of the population. Yet they account for only

persons with an income of \$2,900 is classified in the minimum comfort group, while a family of five with an income of \$3,100 is classified in the moderate circumstances group. The former family, however, would undoubtedly be on a higher level of living than the latter.

27 per cent of the total spent by all families and unattached individuals for food, 17 per cent of the total for shelter and home maintenance, 17 per cent of the total for attire, and 11 per cent of the total for "other living."

There are good reasons for believing that the value of consumptive goods and services used by the American people in 1929 was larger than the amount estimated in this chapter to have been devoted, out of their incomes, to consumption. First, the full amount of life insurance premiums paid by the policy holders has been included among savings rather than among consumptive expenditures. However, a considerable part of the receipts of insurance companies is paid out to beneficiaries of those who have died or to the owners of maturing policies. The amount thus returned to families and individuals for spending or for investment, according to the decision of the beneficiary, amounted in 1929 to approximately 2 billion dollars. Doubtless a substantial portion of this sum was expended for consumptive purposes.

Second, there were withdrawals from savings by families and individuals for purposes that were considered to be unusual, and hence not reported in surveys of family income and expenditures—such, for example, as a long vacation, a trip abroad, or exceptional educational or medical expense. It is impossible to estimate how large such withdrawals may have been.<sup>5</sup> Third, business corporations frequently make contributions to their employees and customers in the form of free food, shelter, medical service, tobacco, and beverages—outlays which are absorbed in operating costs.

<sup>5</sup> Deficits incurred by families whose incomes in 1929 happened to be below their customary amounts are not included in these withdrawals from savings, since such deficits were taken into consideration in the estimates given in the tables.

These consumptive expenditures by families and unattached individuals, not included in the foregoing tables, together with the value of consumptive goods and services paid for by business concerns and charged to business operating costs, may have amounted to several billion dollars.

The data given in this chapter do not afford a complete picture of the consumptive satisfactions enjoyed by the American people. This is because our analysis is confined to the consumptive expenditures made by families and individuals out of the incomes which they have personally received. The American people receive also certain goods and services which are rendered to them without personal cost. For example, governments provide a variety of services free of charge to individuals, including education, military and police protection, the use of streets and highways, and sanitation and health services. These are paid for chiefly out of taxes collected from the public.

CHAPTER VIII  
SAVINGS VERSUS CONSUMPTIVE  
EXPENDITURES

As indicated in the Foreword, one of the primary purposes of the larger investigation of which this volume is a part is to study the relationship of the distribution of the national income to the creation of capital. The question raised was whether there was a tendency for too small a proportion of the national income to flow into consumptive channels, with too large a proportion going for investment purposes—resulting in a disturbance of economic equilibrium. We shall be concerned in this and the following chapter, dealing with the trend in saving over the last two or three decades, with one phase of this problem only. That is to say, we shall consider how the monetary income is divided as between saving and spending, but we shall not here seek to trace the effects of such division upon the working of the economic system. We are concerned only with the setting aside of funds for investment by individuals and we do not trace the process of conversion or transmutation of these funds into actual capital goods. This problem is reserved for the third volume of this study.

To state the problem of the present chapter more concretely: We wish to show how the percentage of the aggregate income of individuals which is saved—that is, withheld from consumption and made available for investment—is affected by the relative amounts of income possessed by various classes of the population. How much do people on low incomes, moderate incomes, and

high incomes respectively save and how much do they spend for consumptive satisfactions? In aggregate terms, what percentage of our total savings is made by the classes, and what percentage by the masses? We shall present estimates of the aggregate savings of all the families in each income group and compare these aggregate savings with the aggregate consumptive expenditures of the same persons. In the second division of the chapter, we shall indicate the volume of savings effected directly by business corporations.

Before presenting our estimates of savings in relation to consumptive expenditures, it is necessary to say a word about the way in which we have handled certain items. Consumptive expenditures for commodities or services on which a tax is levied, such as imports, gasoline, and amusements, naturally include the taxes which go for the support of government in general. Direct taxes and contributions for charitable and philanthropic purposes, found chiefly in the higher income groups, we have endeavored to segregate from consumptive expenditures. They are shown separately in the table on page 96 and the chart on page 97.<sup>1</sup>

Purchases of such durable and semi-durable goods as furniture, other home equipment, and automobiles may from some points of view be considered savings. However, since they do not provide funds for the expansion of productive facilities or for later use in purchasing consumptive goods and services, they are here classified among consumptive expenditures. On the other hand, the purchase of a home is classified as an investment rather than as a consumptive expenditure.<sup>2</sup> All life and

<sup>1</sup> For method of estimating these items, see note 1, p. 83.

<sup>2</sup> In cases where homes are bought on installments, with the interest and amortization of principal combined into uniform payments, only a part of such payments is considered savings.

health insurance premiums, all income spent in purchasing securities and real estate, regardless of whether such purchases turned out to be good investments or total losses, and all increases in bank deposits, whether drawing interest or not, are considered savings.<sup>3</sup>

### I. SAVINGS OF FAMILIES AND INDIVIDUALS

We present first the estimated aggregate savings of families in the various income groups. These estimates, like those for aggregate consumptive expenditures, have been built up from the data assembled in Chapter VI.<sup>4</sup>

AGGREGATE SAVINGS OF FAMILIES, BY INCOME GROUPS, 1929

Income Class (In dollars)	Number of Families	Aggregate Savings	
		In Millions of Dollars	As a Percentage of Total
Under 0.....	120,000	-1,588	-10
0 to 1,000.....	5,779,000	-550	-5
1,000 to 2,000.....	10,455,000	801	5
2,000 to 3,000.....	5,192,000	1,490	10
3,000 to 4,000.....	2,440,000	1,319	9
4,000 to 5,000.....	1,232,000	998	7
5,000 to 10,000.....	1,625,000	2,549	17
10,000 to 20,000.....	412,000	2,003	13
20,000 to 50,000.....	156,000	1,836	12
50,000 to 100,000.....	39,000	1,165	8
100,000 and over.....	24,000	5,116	34
All classes.....	27,474,000	15,139	100

The small group with incomes under zero covers those families which in 1929 suffered losses in excess of their current incomes. These people are not those who are usually at the bottom of the scale; they would normally be found scattered through the various income groups. They may therefore be ignored except as they enter into

<sup>3</sup> In these figures of savings, pension funds set aside and invested by industries and governments for the purpose of providing annuities are not included in current savings. The total is, however, relatively small

<sup>4</sup> For details of method see Appendix B, pp. 258-61.

the total. Families with incomes from zero to \$1,000 also show in the aggregate negative savings, which means that this group as a whole was incurring indebtedness.

The following regrouping of families with respect to savings is of interest:

16.2 million families with incomes from zero to \$2,000 (59 per cent) show aggregate savings of about 250 million dollars.

8.9 million families (32 per cent) with incomes from \$2,000 to \$5,000 saved approximately 3.8 billion dollars.

2 million families (7 per cent) with incomes from \$5,000 to \$20,000 contributed about 4.5 billion dollars of the aggregate savings.

219,000 families with incomes above \$20,000 saved over 8 billion dollars.

About 2.3 per cent of all families—those with incomes in excess of \$10,000—contributed two-thirds of the entire savings of all families. At the bottom of the scale 59 per cent of the families contributed only about 1.6 per cent of the total savings. Approximately 60,000 families at the top of the income scale, with incomes of more than \$50,000 per year, saved almost as much as the 25 million families (91 per cent of the total) having incomes from zero to 5,000.

In the table on page 95 the aggregate savings, together with the percentage of income saved, are shown separately for farm and non-farm families in the various income groups.

Farm families, though representing 21 per cent of the total number of families, contributed less than 10 per cent of the total monetary savings. On the whole, the farm families in given income groups save more than non-farm families in the same groups.

## SAVING VERSUS SPENDING

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### SAVINGS OF FARM AND NON-FARM FAMILIES, 1929

Income Class (In dollars)	Number of Families (In thousands)	Aggregate Savings (In millions of dollars)	Percentage of Income Saved
<b>FARM FAMILIES</b> .....	<b>5,796</b>	<b>1,405</b>	<b>20</b>
Under 0.....	70	-84	
0 to 500.....	1,382	-117	-27
500 to 1,000.....	1,712	-35	-3
1,000 to 1,500.....	1,005	99	8
1,500 to 2,000.....	607	225	21
2,000 to 3,000.....	614	476	32
3,000 to 4,000.....	230	334	42
4,000 to 6,000.....	142	348	52
6,000 to 10,000.....	34	159	64
<b>NON-FARM FAMILIES</b> ....	<b>21,678</b>	<b>13,734</b>	<b>20</b>
Under 0.....	50	-1,504	
0 to 1,000.....	2,685	-398	-22
1,000 to 1,500.....	4,749	73	1
1,500 to 2,000.....	4,094	404	6
2,000 to 3,000.....	4,578	1,014	9
3,000 to 4,000.....	2,210	985	13
4,000 to 6,000.....	1,756	1,390	17
6,000 to 10,000.....	925	1,650	24
10,000 to 20,000.....	412	2,003	36
20,000 to 50,000.....	156	1,836	39
50,000 to 100,000.....	39	1,165	44
100,000 to 250,000.....	16	1,069	49
250,000 to 1,000,000.....	7	1,648	56
1,000,000 and over.....	1	2,399	66
<b>FARM AND NON-FARM FAMILIES</b> .....	<b>27,474</b>	<b>15,139</b>	<b>20</b>

Perhaps the most significant way of showing the effects of the distribution of income upon its allocation between saving and spending is by dividing the population as a whole into equal numerical groups of 2.75 million families each. In the table on page 96 we show the disposition of family income for ten numerically equal groups and indicate the percentage of income saved. The same data, except for the percentage figures, are graphically shown on page 97. Direct taxes and contributions



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for philanthropic and charitable purposes, estimated at about 1.3 billion dollars, are shown separately for the two top groups, where such payments and contributions chiefly occur.<sup>5</sup>

AGGREGATE SAVINGS AND CONSUMPTIVE EXPENDITURES OF FAMILIES  
BY INCOME GROUPS, 1929<sup>a</sup>

(Aggregates are in billions of dollars)

Income Class (In dollars)	Aggregate Income	Aggregate Consump- tive Ex- penditures	Direct Taxes and Philan- thropic Con- tributions	Aggregate Savings	Percentage of Income Saved
4,600 and over..	34.6	20.4	1.2	13.0	38
3,100 to 4,600..	10.3	8.4	0.1	1.8	17
2,450 to 3,100..	7.7	6.7	—	1.0	13
2,000 to 2,450..	6.4	5.7	—	0.7	11
1,700 to 2,000..	4.8	4.4	—	0.4	8
1,450 to 1,700..	4.2	4.0	—	0.2	5
1,250 to 1,450..	3.6	3.5	—	0.1	3
950 to 1,250..	3.0	3.0	—	0.0	0
600 to 950..	2.2	2.3	—	-0.1	-5
{ 0 to 600 <sup>b</sup> ..	0.9	1.3	—	-0.4	-44
{ Under 0 <sup>c</sup> ....	-0.6	1.0	—	-1.6	b
All classes..	77.1	60.7	1.3	15.1	20

<sup>a</sup> For method of estimate, see Appendix B, pp. 258-62.

<sup>b</sup> Negative income.

<sup>c</sup> The class under \$600 has been broken into two parts to show the families with negative incomes separately. Such families number 120,000 of the 2.75 million families with incomes under \$600.

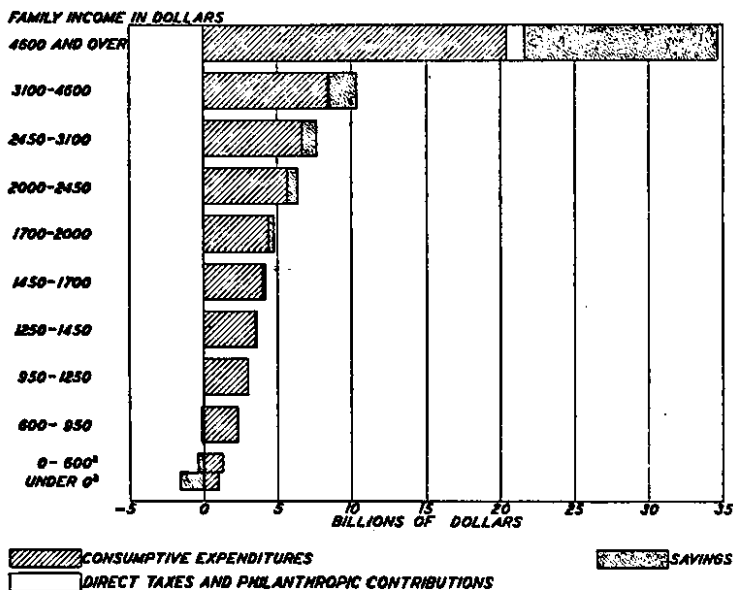
The upper 10 per cent of the families, including those with incomes above \$4,600, made about 86 per cent of the total savings. The second group, with incomes from \$3,100 to \$4,600, accounted for 12 per cent of the savings. The remainder, saved by 80 per cent of the population, amounted to only 2 per cent of the total.

With reference to the savings of unattached individuals we are not able to present any precise data. As was

<sup>5</sup> For method of estimating, see note 2, p. 83.

pointed out in Chapter VI, little information is available regarding either the consumptive expenditures or savings of these unattached individuals at the several income levels. It has been possible, however, to make a rough estimate of their aggregate savings, and this we place at approximately 2.6 billion dollars for the year 1929.<sup>6</sup>

SAVINGS AND CONSUMPTIVE EXPENDITURES IN 1929  
(Each bar represents 2,750,000 families)



<sup>a</sup> See note c to table on p. 96.

## II. CORPORATE SAVINGS

If we are to have a complete picture of the amount of income that is saved or set aside for investment purposes, we must also consider the savings directly effected by business corporations. Reference is made to the com-

<sup>6</sup> For method of estimating, see Appendix B, pp. 262-65.

mon practice of setting aside a portion of earnings as a surplus. A distinction needs to be made between the creation of surplus and the provision for depreciation or depletion. Business enterprises, as a matter of sound practice, must provide for the replacement of existing plant and equipment as it wears out. Since such funds, however, are merely for replacement, they should be excluded from any computation of aggregate savings.

The surplus represents funds available for paying dividends to stockholders but which are retained in the business for use in expanding productive facilities or investing in other ways. The decision as to whether such savings will be made rests with corporate managers, who are concerned primarily with the requirements and the potentialities of the business, rather than with the individual stockholders, who would presumably weigh the sacrifices in consumption against the gains from further savings. It is probable, therefore, that the volume of savings made is somewhat larger than would be the case were the entire income of corporations distributed to the individual stockholders.<sup>7</sup>

The amount of funds set aside as surplus by American corporations in 1929 aggregated about 2.2 billion dollars. Of this amount nearly one billion dollars represented surplus earned from the ordinary operations of business, while the balance represented profits from the sale of property in which surplus and other funds had been invested.<sup>8</sup>

In concluding this analysis, it should be pointed out that the amount of funds set aside as savings by families,

<sup>7</sup> Similar savings made by individual and business enterprises and partnerships are included in the individual incomes of the persons concerned, and hence need not be considered here.

<sup>8</sup> See Appendix A, note g, Table 5, p. 152.

unattached individuals, and corporations does not indicate the extent to which the actual capital equipment of the nation has been increased during the year in question. In the first place, these figures represent the *gross* amount of funds set aside for investment purposes. Thus, the full amount of life insurance premiums paid by policy holders has been included among the savings; and no allowance has been made for withdrawals from savings for unusual purposes.<sup>9</sup> Moreover, a not insignificant portion of the funds rendered available for investment may be absorbed in commissions and other charges, in the purchase of fraudulent securities, or in bidding up the prices of existing securities.<sup>10</sup> Finally, a substantial portion of the available investment money may not eventuate in actual capital goods during the year in which the monetary savings were made.

There may also occur a stoppage of the whole economic process whereby monetary savings are converted into capital equipment, resulting in transforming nominal savings into losses. Discussion of these aspects of the problem is however reserved for the third volume of the series.

<sup>9</sup> See Chap. VII, p. 89.

<sup>10</sup> This is especially true in years like 1928 and 1929 when family and individual incomes included large amounts of capital gains.

## CHAPTER IX

### THE TREND IN SAVINGS, 1900-29

We turn now from comparison of the volume of savings and consumptive expenditures in the single year 1929 to consideration of the relationship of savings to income over a period of years. Has the proportion of the aggregate income that is annually saved grown larger during the period of economic development since 1900, or have we tended to absorb increasingly larger proportions in consumptive expenditures? It is evident that the facts revealed by a study of the trend in this connection should throw much light on the fundamental problem with which our study as a whole is concerned.

As in the preceding chapter, we shall be concerned with individual savings, that is, the setting aside of funds for investment, rather than with actual additions to the capital supply from the national point of view. We shall, however, take account of the savings made by corporations in the form of surplus; for such funds, like those set aside by individuals, are diverted from consumption channels and rendered available for the creation of additional capital.

#### I. INDIVIDUAL SAVINGS

Data with which to show the trend in individual savings from 1900 to 1929 are far from satisfactory, particularly for the earlier years. It is possible, however, by means of certain pertinent evidence and by analysis, to establish with sufficient accuracy for the purposes of our inquiry what the general tendency has been.

Attention may be directed first to a factor in the situa-

tion which is applicable to the entire 30-year period. We showed in Chapter II that the produced income of the American people in per capita terms, adjusted for changes in prices, increased between 1900 and 1929,<sup>1</sup> by about 38 per cent. It is a self-evident proposition that, as people's incomes expand, they are in a position to save more. As a matter of fact, surveys of the disposition of family incomes given in Chapter VI show clearly that the amount of savings increases as incomes advance. Thus it is evident that the general increase in per capita income from 1900 to 1930 would—unless offset by other factors—have involved an increase in the proportion of the aggregate income saved.

More important from the standpoint of saving than the increase in the average income is the fact that the increase resulted in lifting a larger proportion of the population to higher income groups. Our studies of the disposition of family income show that a substantial increase in the income of the people below the \$1,500 or \$2,000 level means only a slight increase in savings, whereas an increase of like degree in the income of families in the upper brackets means a striking increase in the percentage and amount saved. In order to gain some idea of the importance of this factor, it will be necessary to consider the extent to which during these years individuals have been lifted from lower to higher income levels.

Data are not available covering the entire period, but since 1917 we have the evidence afforded by income tax returns. The table on page 102 shows the proportion of all income recipients who filed income tax returns of \$5,000 or over, in specified income groups, annually from 1917 to 1929 inclusive. It will be seen that, except

<sup>1</sup> See p. 17.

for the depression period of the early twenties, there was a general stepping up in the number of income recipients in each of the higher brackets almost from year to year, with the advances greatest in the higher income classes. The increase was most rapid after 1924.

NUMBER OF INCOME TAX RETURNS PER MILLION INCOME RECIPIENTS,  
1917-29<sup>a</sup>

Year	Number of In- come Recipients <sup>b</sup> (In thou- sands)	Income Class							
		Over \$5,000	Over \$10,000	Over \$25,000	Over \$50,000	Over \$100,000	Over \$300,000	Over \$500,000	Over \$1,000,000
1917	41,616	10,397	3,893	1,189	459	160	24	11	3.4
1918	42,526	11,263	3,753	1,012	341	106	15	6	1.6
1919	41,486	15,853	5,274	1,358	454	133	16	6	1.6
1920	42,294	16,115	5,346	1,284	372	86	9	4	0.8
1921	43,119	12,190	3,997	928	257	55	6	2	0.5
1922	43,878	13,542	4,623	1,174	365	92	12	5	1.5
1923	44,815	13,966	5,094	1,260	371	93	12	5	1.7
1924	45,621	15,281	5,695	1,504	472	125	17	7	1.6
1925	46,357	17,919	7,054	1,947	658	206	34	15	4.5
1926	47,096	19,001	7,099	1,860	639	204	34	15	4.9
1927	47,803	19,112	7,236	1,963	705	233	42	18	6.1
1928	48,441	20,868	7,888	2,296	892	330	67	31	10.5
1929	49,041	21,045	7,627	2,092	793	302	64	30	10.5

<sup>a</sup> Based on figures reported in *Statistics of Income*, U. S. Bureau of Internal Revenue. These figures include realized capital gains.

<sup>b</sup> Estimates as of the end of the year. Figures include recipients without gainful occupations.

The figures in the table are somewhat distorted by the fact that during this period there were great fluctuations in the prices of commodities. Since prices were, however, at approximately the same level for the two years 1918 and 1919 as in 1929, we may select these two periods for purposes of more direct comparison.<sup>2</sup>

Between 1919 and 1929 the number of income recipients increased about 18 per cent; but the number filing

<sup>2</sup> It will be observed that 1928 was very much like 1929. As a matter of fact, except for the \$5,000 to \$10,000 class, the proportion of returns in the higher income brackets was higher in 1928 than in 1929. Consequently, the comparison may well be applied to the two-year periods 1918-19 and 1928-29. Both periods were characterized by "economic prosperity."

income tax returns of \$5,000 or over increased about 32 per cent and the number filing returns of \$500,000 and above rose more than 58 per cent. In other words, while less than 1.6 per cent of the income recipients reported incomes of \$5,000 or over in 1919, the number in that class in 1929 was 2.1 per cent—a gain of nearly one-third. The proportion of incomes of \$500,000 or over increased five-fold, while the proportion of one million or over increased more than six times. The number of individuals who reported incomes in excess of a million dollars rose from 65 to 513. The proportion in the high income groups in 1929 was thus substantially above the high level established ten years earlier. There is good evidence to support the view that the increase in the proportion of income tax returns reflected a real increase in the number of such incomes. The degree of under-reporting and evasion does not seem to have changed materially during the period.

Assuming that on the average the percentages of income saved by individuals in the different income groups were the same in 1918-19 as in 1929, we may indicate the general magnitude of the additional savings that were made in the latter year by virtue of the fact that a larger percentage of the population had moved up to higher income brackets. While the data do not permit anything in the nature of a precise figure, we estimate that, as a result of the increased percentage of people with incomes of \$5,000 or more, the gross savings in 1929, as compared with 1918-19, were augmented to the extent of several billion dollars.\*

\* An estimate of 6 billion dollars was obtained by applying to the estimated gross savings in the income classes \$5,000 and over, the ratio of the estimated savings of individuals submitting income tax returns of \$5,000 and over in 1918-19 to the estimated savings of the corresponding income tax classes in 1929.



The income figures which we have been using, it will be observed, include profits from the sale of capital assets, which in the late 1920's amounted to substantial sums annually. When we were considering in Chapter II the growth of income over a period of years, such inflationary profits were eliminated as tending to distort the rate of increase in actual wealth production. We are here, however, concerned only with the *allocation* of the monetary income received in various years as between saving and consumptive expenditures. Accordingly, we should use in this connection the aggregate incomes received whether or not they were derived from productive operations. It was the realized monetary income, from whatever source derived, which was in fact utilized by individuals in their day-to-day saving and spending operations, and which determined the flow of funds into consumption and investment channels respectively.

In addition to the increase resulting from the general per capita increase in incomes another factor has contributed toward expanding the volume of individual savings. It appears also that the income was being distributed with increasing inequality, particularly in the later years of the period. While the proportion of high incomes was increasing, as shown in the preceding table, there is evidence that the incomes of those at the very top were increasing still more rapidly. That is to say, in the late twenties a larger percentage of the total income was received by the portion of the population having very high incomes than had been the case a decade earlier. This conclusion is based upon an analysis which we have made of income tax returns relative to total income for the years since 1918. The conclusion remains measurably true even when the income derived from capital gains, which tended to swell the aggregate in-

come figure in the later years, is eliminated from the computation.

What now may be said about the situation prior to 1918? Evidence of an increase in the proportion of high incomes since 1910 may be adduced from a comparison of our estimates of the distribution of income among families in 1929 with an estimate made by Willford I. King for 1910.<sup>4</sup> The two estimates are not entirely on the same basis; but they are reasonably satisfactory for the purpose of indicating the general trend.<sup>5</sup> From our estimate it appears that in 1929 there were relatively eight times as many family incomes of \$5,000 or more as there were in 1910, according to the King estimate. In view of the change in prices during the period an income in 1910 of \$5,000 was the equivalent of about \$8,000 in 1929. A comparison of the number above \$5,000 in 1910 with the number above \$8,000 in 1929 shows a more than three-fold increase in the proportion in the higher income groups.

By comparing an estimate of the distribution of income among individuals in 1918<sup>6</sup> with our estimate of the distribution among individuals in 1929, we find that the proportion of incomes above \$5,000, allowing for the change in the price level, increased practically two-fold. Since the increase from 1910 to 1929 was more than three-fold, it is evident that the change between 1910 and 1918 was about as great as between 1918 and 1929. While these data are rough estimates and not altogether comparable, and while we would not wish to

<sup>4</sup> *The Wealth and Income of the People of the United States*, pp. 224-26.

<sup>5</sup> The differences between the two distributions are large enough to permit ample allowances for technical discrepancies in the two sets of statements.

<sup>6</sup> See Appendix A, Table 26, p. 205.

make any claims to precision, they clearly point to the conclusion that since 1910 there has been a progressive increase, with occasional setbacks, in the proportion of individuals in the higher income groups.

All this is in conformity with the results of common observation. The period from 1900 to 1930 was an era of economic expansion, in which the number of wealthy people was rapidly growing. It was between 1900 and 1910, it may be recalled, that the elder Roosevelt directed attention to "swollen fortunes." In the next decade the war-time expansion resulted in very large profits which were not evenly disseminated among the population as a whole. The post-war period, as everybody knows, was one of large salaries, commissions, bonuses, and profits, both from ordinary business operations and speculative activities.

From the foregoing analysis it would appear that the proportion of individual incomes that was saved must have tended to increase materially over the 30-year period as a whole. Before accepting this conclusion as final, however, it must be considered that we have been assuming that the families in given income groups saved roughly the same percentage of their incomes in the earlier as in the later years. We must now inquire whether this assumption is a reasonable one.

The amount of savings that will be made by people at a given income level depends upon a number of factors. Analysis of studies of family expenditures has brought to light many of the factors which influence the proportion of a family income that will be devoted to savings and consumptive purposes respectively. Thus it is known that young families save less than old families, and large families less than small families, in the same income groups. Families of farmers and of independent

business men save more on the same incomes than families of wage earners and salaried men. Families living in the country or at a considerable distance from large towns are not tempted to spend as much as families living in or close to large cities. Families living on relatively secure incomes tend to save less than those whose incomes are uncertain; thus families employed by governments and by large firms with pension systems would save less than those employed by other business enterprises.

Among these various factors affecting the rate of savings in given income groups, some operated during the 30-year period from 1900 to 1930 to increase the percentage of the income saved, while others worked in the opposite direction. There was, for example, a decline in the proportion of farmers and independent business men among income recipients; and, owing to the automobile, there was a marked increase in the number of families having access to the expenditure attractions of urban communities. At the same time, the increasing ease of communication and the expansion of advertising perhaps subjected individuals to greater temptation to spend than was the case in earlier years. On the other hand, there was a reduction during this period in the average size of families. Mention may also be made of the efforts to increase savings by thrift campaigns, and by such devices as the acceptance of smaller deposit accounts, partial payment bond purchase plans, and the issue of bonds of small denominations.

The question whether people now save more or less than in former decades is of importance primarily in its relation to income groups up to, say, \$15,000 or \$20,000, where the pressure to satisfy unfulfilled wants and longings is most intense. Data are not available, however,

with which to judge whether the factors leading to increased savings among given income groups outweigh those leading to greater expenditure.

Nevertheless, any slight tendency among these groups to spend more would not weigh heavily against the effects of the general increase in the income level, and especially the great increase in incomes among the very high income groups. If, for example, the average family in the income groups below \$5,000 saved as much as 20 per cent less in 1929 than it would have saved in that year had saving habits been the same as they were in 1918-19, the aggregate reduction in individual savings would have amounted to only about 6 per cent of the total personal savings. If we assume that all those with incomes under \$20,000 saved 20 per cent less it would make a difference of another 6 per cent. The force which produces a really significant change in the proportion of income saved is the increase in incomes in the higher income groups where the larger part of the increased revenue gets saved more or less automatically. It takes a great heap of penny savings among the masses of the people to equal a single hundred thousand dollar saving of an individual in a high income group.

Our conclusion from this general analysis is that there has been a definite tendency for the percentage of the aggregate income which is saved to increase more or less continuously over the three decades, but particularly during the post-war years. While one would not be warranted from the available data in making any precise estimate of the extent of the increase, the general tendency is unmistakable. We believe, moreover, that the evidence afforded by surveys of the disposition of family incomes indicates that at any period when per capita income is rising and when the national income

is becoming more unequally distributed, the percentage that will be saved will increase. This may perhaps be regarded as an economic principle of general applicability.

II. CORPORATE SAVINGS

The supply of funds diverted from consumption and rendered available for investment is influenced materially by the corporation practice of accumulating surplus to which reference has been made in the preceding chapter. The amount of business savings or surplus set aside annually from 1909 to 1929 is shown by the following figures:<sup>7</sup>

Year	Corporate Surplus	Year	Corporate Surplus	Year	Corporate Surplus
1909	1,296	1916	4,939	1923	2,432
1910	1,151	1917	4,732	1924	1,463
1911	690	1918	1,986	1925	2,851
1912	1,246	1919	4,330	1926	2,223
1913	1,400	1920	1,397	1927	996
1914	585	1921	-2,685	1928	2,388
1915	2,117	1922	1,676	1929	2,238

It is apparent from these estimates that corporate savings tended to grow in volume over the period as a whole but that the amount fluctuated widely from time to time. The annual variations shown are of course directly related to fluctuations in business conditions. During the war period the huge profits earned and the prospective profits to be deprived from plant additions led corporations to "plough back" a substantial part of their earnings into the business. In the depression year 1921 corporate savings, in the aggregate, were a minus quantity. In making dividend payments in that year corporations drew upon previously accumulated surplus to the ex-

<sup>7</sup> Exclusive of life insurance companies. See Table 5, pp. 152-53.

tent of about 2.7 billion dollars. The effects of the moderate business recession of 1924 and 1927 are clearly evident; after 1929 corporations in the aggregate again drew upon past surpluses to meet dividend payments.

We find no apparent tendency for corporations to retain as surplus an increasing percentage of their earnings as the years pass. It remains true, however, as already indicated, that the aggregate savings of corporations have increased materially. This is largely a result of the increase in the volume of corporate business. It is not impossible, however, that as partnerships or individual business men have become absorbed in corporate enterprises, a larger percentage of the earnings have thenceforth been retained in the business. This is because corporate managers, as we indicated in the preceding chapter, are in the main deciding about the distribution of funds belonging to others and are not in any great degree sacrificing personal consumption when they set aside corporate funds as surplus.

On the other hand, there is no evidence to show that corporate savings constituted any larger percentage of the national income in 1929 than they did 20 years earlier. While the data are not entirely conclusive, the available evidence points rather in the opposite direction. On the whole, we conclude that there has been no significant change in the trend of corporate savings.

At any rate, corporations, especially those of large size, are in a position to affect materially the aggregate volume of savings. If funds are desired for expansion or reserves they can normally be procured by refraining from disbursing the full net earnings to stockholders. Discussion of the general significance of this fact must, however, be reserved for the ensuing volume dealing with the process of capital formation.

From the analysis and data in the foregoing pages, it appears that the economic developments during the first three decades of the present century have not only increased the ease with which national savings may be made, but have in general speeded up the rate of savings. In the case of individuals the increase in national productivity has manifested itself, with certain interruptions, in a dual tendency toward an increase in the volume of savings relative to consumptive expenditures: the rise of incomes in general has made it possible for the population as a whole to save a somewhat greater proportion of their income; while the fact that there has been a greater increase in incomes received by the upper than by the lower income classes has tended automatically to increase the aggregate volume of savings. The tendency has been especially marked during the last decade.<sup>a</sup>

Attention must here be directed to what may at first thought be considered an inconsistency between a major conclusion which was reached in the first volume and the findings of the present chapter. Our study of the produc-

<sup>a</sup> Comment on this chapter by Clark Warburton. The conclusion reached at the close of this chapter, in respect to the trend of savings over the three decades from 1900 to 1929, may be true, but it does not seem to me to be adequately supported by the data presented. Four considerations are involved in this opinion. (1) The increase in average per capita income, which is the only data presented for the first decade, is of little significance, since the effect which such an increase would have upon saving depends upon how the additional income is distributed. (2) The increase between 1910 and 1918 in the number of families with incomes over \$5,000, which is the only additional evidence cited for this period, is also of relatively little significance—since this may have been due to the raising of a considerable number of incomes from a little below to a little above \$5,000, which would have only a slight effect upon the total volume of savings. (3) Inadequate analysis has been made, for the period from 1918 to 1929, as to the net effect upon aggregate savings of changes in the distribution of individual and family income and changes in corporate savings. (4) There seems to me a greater probability than



tive capacity of the United States over the first three decades of the twentieth century showed no progressive or cumulative piling up of unutilized capacity. With the notable exception of transportation, explained by special conditions, the amount of "excess producing capacity" appears to have been no greater in the earlier than in the later years. How then can it be true that the proportion of the income that is annually saved has been increasing relatively to consumptive outlays?

This apparent contradiction may be explained only in part at this stage in our analysis. We have been concerned in this volume, as we have been at pains to emphasize, only with the *money* savings of individuals and of business corporations in the form of surplus funds. The transmutation of these funds into actual capital goods is another story. If it is true that money savings have increased faster than consumptive expenditures but also true that plant and equipment have not expanded faster than consumptive demand, then some force must be preventing the creation of plant and equipment—beyond a certain point—even though saved funds are currently available for the purpose. What becomes of "excess money savings" and what is involved in the process of transforming money savings into capital goods will be considered in the volume on capital formation.

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is implied in the text that there was a general decline during the three decades in the proportion of income saved by families at given income levels, especially in view of the migration of population from farms to urban regions and of the tendency for the independent business class to disappear and to be succeeded by a salaried middle class. Such a decline, together with the decline in the relative importance of corporate savings, may readily have offset (except for the last five years of the period, when capital gains were unusually great) whatever tendency toward increased savings resulted from a growing inequality in the distribution of income.

**PART III**  
**CONSUMPTION IN RELATION TO**  
**PRODUCTION**

## CHAPTER X

### HOW MUCH CAN WE CONSUME?

In the preceding divisions of this volume we have considered the consuming capacity of the American people as determined by the aggregate income available and the way in which it is distributed among the various classes of society, and as influenced by the habits of the American people with reference to saving. On the basis of the analysis which we have made in this volume and the preceding one, *America's Capacity to Produce*, we shall endeavor in this final section to contribute to a better understanding of the fundamental relations which exist between consumption and production. In the first of the two chapters which comprise the section we shall consider briefly the *potential* consuming power of the American people in contrast to *actual* consumptive demands as limited by the incomes available.

The opinion is frequently expressed that the primary explanation for the failure of our economic system to operate at maximum capacity is the inability of the population to consume the full quantity of commodities and services that might be produced. It is contended that if, in this great technological age, the economic machine were to turn out in continuous stream the volume of goods of which it is capable, there would be universal consumptive indigestion: commodities would accumulate in the warehouses of original producers or on the shelves of dealers—not for want of purchasing power but because of the outright satiation of human wants. Hence periods of restricted production are regarded as essential

to a proper adjustment of the rate of production to consumptive requirements.

A prominent banker late in 1930 gave expression to this view in the following words: "If there has been recession, is it not because the nation has achieved and produced on a scale so large that there has been thrust upon us the necessity of pausing? . . . It is a glorious thing to contemplate that as a nation we have too much, rather than too little."<sup>1</sup> More recently the author of *The New Dealers*, in describing the origin and character of the Administration's program, said: "The New Deal was necessary. . . . It was caused by one very simple fact: that we can produce more than enough for everybody in this country. This is something new in human history."<sup>2</sup> The same view is often expressed in the statement that the age of scarcity has been replaced by the era of abundance, an era in which the great problem is how to make effective use of the leisure time which the age of technology has thrust upon us.

Of more significance than the mere expression of this view by individual observers is the fact that it is being embodied, more or less consciously, in governmental policies. To some extent national policies relating to production are designed to bring about a better adjustment of one division of productive activity to another; but it is also true that a substantial shortening of the working day and a restriction of output are believed to be not only possible but essential. At the same time, it is assumed that standards of living can be maintained or even increased.

The widespread prevalence of this view and its cur-

<sup>1</sup> John D. Lonsdale, "The Period of Adjustment," *American Bankers Association Journal*, October 1930, p. 267.

<sup>2</sup> Pp. 4-5.

rent embodiment in governmental policy make this a particularly propitious time to subject the underlying assumption to careful examination. Were the consumptive wants of the people at the peak of prosperity in 1929 fully or reasonably well satisfied? The data which we have assembled in preceding chapters regarding the incomes and consumptive expenditures of American families at the various income levels furnish an adequate basis for such an examination. We can use these data to estimate what changes in actual demands for consumptive goods would occur if the lower and middle income groups were to receive increased incomes, of varying amounts. In the following analysis we shall consider several alternative possibilities.

**I. A SLIDING-SCALE INCREASE IN FAMILY INCOMES**

Let us ask the question: What would be the result upon consumer demand if, by some means, poverty could be completely eliminated and if there were very moderate increases of income among the families in the middle classes? In order to analyze the problem in specific terms, let us assume that the incomes of families were to be increased in accordance with the following scale:

Number of Families (In thousands)	Income in 1929 (In dollars)	Assumed Percent- age Increase in Income	Average Income after Increase
5,779 .....	0 to 1,000	75	\$1,139
5,754 .....	1,000 to 1,500	60	1,994
4,701 .....	1,500 to 2,000	50	2,608
5,192 .....	2,000 to 3,000	40	3,389
2,440 .....	3,000 to 4,000	30	4,468
1,232 .....	4,000 to 5,000	20	5,336
2,376 <sup>a</sup> .....	Over 5,000	0	—

We believe it is fair to assume that, if the 5.8 million

<sup>a</sup> Families with losses in excess of current income in 1929, a large proportion of whom normally have incomes in excess of \$5,000, have been included in this group.

families having incomes in 1929 of less than \$1,000 were to have those incomes increased from an average of \$650 to about \$1,150, their consumptive expenditures would assume a pattern similar to that prevailing among the 5 million odd families who were already in that general income class. Similarly, we believe it is a reasonable assumption that, if the income of each of these groups of families were stepped up to higher levels, their expenditures for consumptive goods would be similar in amount and general character to those already in the higher groups. If this assumption be correct, the expansion of consumptive demand resulting from the increase in incomes shown in the table on page 117 would be as indicated in the table which follows.

EFFECT OF INCREASED FAMILY INCOMES UPON CONSUMPTIVE EXPENDITURES

Family Income in 1929 (In dollars)	Aggregate Consumptive Expenditures (In millions of dollars)			Percentage Increase in Consumptive Expenditures
	Actual, 1929	With In- creased Incomes <sup>a</sup>	Additional Expenditures	
0 to 1,000...	4,065	6,634	2,569	63
1,000 to 1,500...	7,025	10,205	3,180	45
1,500 to 2,000...	7,538	10,823	3,285	44
2,000 to 3,000...	11,096	14,904	3,808	34
3,000 to 4,000...	7,069	8,913	1,844	26
4,000 to 5,000...	4,480	5,247	767	17
Over 5,000 <sup>b</sup> ...	20,704	20,704	—	—
All classes. . . .	61,977	77,430	15,453	25

<sup>a</sup> At rate indicated in the table on p. 117.

<sup>b</sup> See note 3, p. 117.

The reader will bear in mind that in this computation savings have been eliminated, the figures representing estimated outlays for current consumption. This moderate stepping up of family incomes would result in an

increase of consumptive expenditures amounting to about 15 billion dollars, or nearly 25 per cent above the 1929 level. If this were accompanied by corresponding changes in the incomes of unattached individuals the total increase in consumptive expenditures would amount to nearly 19 billion dollars.

It is also possible to show the effect of these assumed changes in family incomes upon family expenditures for major types of consumptive goods and services. The increases are, in round numbers, as follows: food and non-alcoholic beverages, 3.1 billion dollars, or 18 per cent; shelter and home maintenance, 4.7 billion, or 26 per cent; attire and adornment, 2.2 billion, or 27 per cent; and other consumers' goods and services, 5.4 billion, or 29 per cent.

## II. A MINIMUM FAMILY INCOME OF \$2,500

In 1929 about 70 per cent of the families of the nation had incomes in the range from zero to \$2,500. Under the scale of increases which we have used nearly half of all families (averaging four persons) would still have incomes below \$2,500, and approximately one-fourth would be below \$1,800. A family income of \$2,500 was in 1929, and despite the decline of prices still is, a very moderate one. It permits few of the luxuries of life, even for families of only two or three persons. Accordingly, it should be of interest to indicate the increases in the amount and character of expenditures that would result if all families could be raised to a minimum of \$2,500. We shall here assume no change in the incomes of those above this figure.

The increases in consumption among the 19.4 million families whose incomes would be raised from below \$2,500 to that level would be as follows: for food, from

about 10 to 14 billion dollars, or 40 per cent; for shelter and home maintenance, from about 7 to 11 billion dollars, or 65 per cent; for attire and adornment, from less than 4 to 6 billion dollars, or 65 per cent; for other consumers' goods and services, from less than 5 to nearly 10 billion dollars, or 115 per cent. In aggregate terms the increase in consumptive expenditure would be more than 16 billion dollars. Such an increase would raise the demand of families for major classes of goods as follows:

Item	Per Cent
Food and non-alcoholic beverages . . . . .	20
Shelter and home maintenance . . . . .	21
Attire and adornment . . . . .	22
Other consumers' goods and services . . . . .	23

We may make another very simple computation of possible increases in consumptive expenditures. Surveys of family expenditures clearly indicate that if all families in the United States with incomes of less than \$10,000 were to have a uniform increase of \$1,000 in income they would readily find ways of spending the additional amount. An increase of \$1,000 in the consumptive expenditures of all families under the \$10,000 level would amount to about 27 billion dollars, more than 40 per cent.

We found in the first volume of this study that the productive capacity of the nation in 1929 was not utilized to the fullest extent that was practically possible, and that the total output might, so far as any technical factors were concerned, have been increased by some 19 per cent, or about 15 billion dollars. It is apparent that if the increases in family incomes assumed in any of the three examples which we have given above could somehow be realized, an output that would exceed the productive capacity of the nation in 1929 would be required.



It would be a simple matter to compute vastly greater increases in consumptive demand than those shown in the foregoing illustrations. Such computations, however, would be tedious, and it is sufficient here to point out that the evidence afforded by surveys of family expenditures supports the conclusion that, were incomes available, human desires would translate themselves into effective market demands for vastly greater quantities of goods than have thus far ever been produced. There is not the slightest doubt that, did incomes permit, the demands of the American people for consumptive goods and services would be quickly and vastly increased. The truth is that the overwhelming majority of the people still have a very wide range of unfulfilled desires. ✓

III. MINIMUM REQUIREMENTS FOR A "REASONABLE STANDARD" OF LIVING ?

Another way of illustrating the possibilities of expanding consumption, even for the primary necessities of life, is by considering the requirements for a satisfactory minimum standard of living for the masses of the population. It is obvious that a variety of definitions may be given to the term "reasonable standard" of living. It is possible, however, to indicate the minimum requirements in a rough way by considering first what expenditures for food are regarded by dieticians as necessary to maintain an adequate diet for health and efficiency. We have made no independent investigation along this line; hence we use for the purpose the results of a recent investigation by the Bureau of Home Economics of the United States Department of Agriculture.\*

The bureau study has estimated the cost of four types

\* Hazel K. Stiebeling and Medora M. Ward, "Diets at Four Levels of Nutritive Content and Cost," *U. S. Department of Agriculture Circular No. 296.*

of diet: (1) a restricted diet for emergency use; (2) an adequate diet at minimum cost; (3) an adequate diet at moderate cost; and (4) a liberal diet. The restricted diet contains the irreducible minimum of protective and other foods, but is not considered adequate for use over an indefinite period. The adequate diet at minimum cost is regarded as sufficient to meet the physiological needs of the average family, if foods are chosen with exceedingly great care; but it provides little variety and very little margin of safety in respect to vitamins and minerals. The adequate diet at moderate cost provides for more variety and balance and a diet giving more attention to vitamins and minerals. The liberal diet provides for both greater variety and better quality of food. It is still assumed, however, that the food will all be prepared at home, no allowance being made for occasional meals at restaurants or for buying foods cooked or prepared in delicatessens.

The cost of the food necessary to supply these several diets, during the period from July 1931 through June 1932, ranged from \$22.85 to \$59.48 per month for a family consisting of two moderately active adults and three children aged three, five, and thirteen years.<sup>5</sup> When this cost is adjusted to the prices prevailing in 1929,<sup>6</sup> the cost per year for the four diets was, for the average family, approximately as follows:

Restricted diet for emergency use . . . . .	\$350
Adequate diet at minimum cost . . . . .	500
Adequate diet at moderate cost . . . . .	800
Liberal diet . . . . .	950

We may now compare these budgetary requirements with the actual food expenditures of families at various

<sup>5</sup> The same.

<sup>6</sup> Allowance is also made for slight variations in the composition of families as compared with that taken for the sample diet.

income levels in that year. Non-farm families with incomes from zero to \$1,000, numbering about 2.7 million in 1929, or about 12 per cent of all non-farm families, spent on the average approximately \$350 for food, or sufficient merely to purchase the restricted diet for emergency use. The 4.7 million non-farm families (22 per cent) with incomes from \$1,000 to \$1,500 on the average spent enough to obtain the adequate diet at minimum cost, that is, approximately \$500. It was not until an income of about \$3,000 was reached that families spent enough on food to obtain the adequate diet at moderate cost, namely, \$800; and it was only those with incomes in excess of \$5,000 who spent enough on the average to obtain the quantity and character of food required for a liberal diet. On the assumption that these estimates of food requirements and costs are reasonable, the following conclusions may be stated: of the non-farm families as a whole, 16 million, or 74 per cent, did not have sufficient income in 1929 to provide an adequate diet at moderate cost. Nineteen million families, or 90 per cent, were not in a position to enjoy a liberal diet. Farm families in the same income groups naturally fare somewhat better as to food because of the lower costs involved.

It should be made clear in connection with this analysis that if a family with an income of \$3,000 spent no more for shelter and home maintenance, or for attire and other living, than a family with \$1,000, it would be able to purchase a genuinely adequate diet. But as incomes increase, expenditures are increased for each of the other major purposes—this because “man liveth not by bread alone,” and other items are regarded as being equally as important as food. Since families will economize on food rather than dispense with other necessities, it is

regarded as reasonable to allow for increasing outlays for other purposes when estimating the incomes required to provide a genuinely adequate diet.

It would seem a reasonable minimum aim of our national economy to provide the entire population with a "liberal diet," which would furnish adequate nutrition, a substantial margin of safety in respect to vitamins and minerals, and a satisfying variety of foods; and at the same time to permit the purchase of such necessities and comforts as are ordinarily associated with a "liberal diet." To reach these standards would require an increase in the production of all kinds of consumers' goods and services by something like 70 or 80 per cent.

The fulfillment of this goal necessarily lies in the future. Even if no family with an income of \$5,000 in 1929 were to receive more than it then had, it would be necessary to increase the value of food production, at 1929 prices, by around 40 per cent. This would involve, of course, a considerable shifting in the character of food produced; for example, cereals would be reduced, and meat, dairy products, and fruits and vegetables would be increased. The value of shelter and home maintenance provided for sale to American families would have to be very nearly doubled, and that of attire and adornment and of other consumers' goods and services more than doubled. Such an increase in productive output is far beyond the capacity of our economic system today.

## CHAPTER XI

### SOME FUNDAMENTAL CONCLUSIONS

In the light of the information and analysis contained in this and the preceding volume, *America's Capacity to Produce*, we are in a position to draw certain significant conclusions. Our investigation as a whole is concerned with the question whether the existing distribution of income tends to promote or retard economic progress. While we have still to consider in the third volume, which will deal with the formation of capital under the conditions imposed by a highly complex pecuniary organization, certain very important aspects of the larger problem with which we are concerned, we may nevertheless safely set down here the conclusions to which our analysis has thus far led. In stating these conclusions we shall be relating the analysis of the present volume on income and consumption to the preceding volume, which was concerned with the productive side of the problem.

Our findings relate to certain very fundamental issues in which all classes of American people—business men, laborers, public officials, and professional students—are alike vitally interested. These issues are, moreover, deeply imbedded in the great problems with which every important government in the world is confronted in these troubled times. The analysis as a whole pertains to the very fundamentals of the economic organization of society.

In order that the basic conclusions which we have reached may be made as explicit as possible, we are drawing them up in the form of a series of succinct statements,

followed in each case by a brief explanation or amplification.

1. *During the so-called "new era" of the gay twenties the United States was not living beyond its means.* The view has been widely held that we were then living on an economically unwarranted plane and that we had to come down to earth before we could find economic salvation. While many individuals may have been living beyond their *individual* means, our findings show that the *nation as a whole* was not living beyond its capacity—as measured by what we could produce. The facts show that we actually produced more in 1929, for example, than was consumed, and that we might readily have produced, with the existing resources, plant and equipment, and labor supply, and without improvement in methods, approximately 20 per cent more than we did produce. We were not living on our capital, that is, using it up without replacement; on the contrary, we made, throughout the decade of the twenties, large annual additions to the capital supply.

2. *There has been a tendency, at least during the last decade or so, for the inequality in the distribution of income to be accentuated.* That is to say, while the incomes of the masses of the people were rising during this period, the incomes of those in the upper income levels increased with greater rapidity. Since the proportion of the income that is saved rather than expended for consumption purposes rises rapidly as higher incomes are realized, there has been a tendency for an increasing proportion of the aggregate income of families and individuals to be directed into investment channels.

3. *Vast potential demands alike for basic commodities and for conventional necessities exist in the unfulfilled wants of the masses of the people, both rural and urban.*

This is conclusively demonstrated by the evidence afforded by surveys of family expenditure. At each successive income level the expenditures of families and of unattached individuals do increase—for food, shelter, and clothing, as well as for the comforts and conveniences of life. One may conclude, therefore, that if by some means the incomes of those in each income group could be lifted to the next higher group their expenditures would be increased in line with the expenditures of those who were theretofore in such income groups. It would require but a moderate increase in the consumption of the millions whose standards of living even in 1929 were below the requirements for health and efficiency to absorb the full productive capacities of the nation.

The unfulfilled consumptive desires of the American people are large enough to absorb a productive output many times that achieved in the peak year 1929. Even in lines of basic necessities great wants among the masses of the people still go unsatisfied. The trouble is clearly not lack of desire but lack of purchasing power. ||

4. *The United States has not reached a stage of economic development in which it is possible to produce more than the American people as a whole would like to consume.* The truth of this proposition may best be made clear by a summary presentation of figures derived from our analysis.

*Actual* goods and services produced in 1929 had a value of about 81 billion dollars.

The *potential* production (with existing methods) equalled about 20 per cent more than actual production, or 97 billion.

Actual production of *consumption* goods in 1929 equalled approximately 70 billion,<sup>1</sup> and *potential* production of *consumption* goods equalled about 86 billion.

<sup>1</sup> This figure is approximate only. It is an estimate of the value of goods and services actually produced within the year and paid for by

Raising all family incomes below \$2,500 to \$2,500, with no changes above that level, would increase actual consumption by more than 16 billion.

Adding \$1,000 to every family income below \$10,000 would increase consumption by about 27 billion.

Either of these relatively minor increases—which make no allowance for increased consumption among some 9 million individuals not attached to families—would create a consumptive demand in excess of the potential productive capacity of the nation in 1929. In the light of this analysis it would seem to be evident that we have not as yet reached the age of abundance of which we all like to dream and that extensive leisure has not as yet been forced upon us as an alternative to a surfeit of goods and services.

5. *We cannot materially shorten the working day and still produce the quantity of goods and services which the American people aspire to consume.* The actual production of 1929 was accomplished on an industrial work week which averaged close to 50 hours. The potential 1929 production of 97 billion dollars (which assumed no unemployment, or slack employment) was also predicated on the assumption of an average working week of 50 hours. If we were to shorten the working week to 30 hours, as has frequently been suggested, with a view to absorbing all complete and partial unemployment, the production would be greatly reduced.

Assuming no change in man-hour efficiency, the reduction from the 1929 basis would be two-fifths, giving a production of 58 billion dollars, of which about 51 billion would be consumptive goods. If we assume that im-

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families and individuals out of their incomes. It does not include the net income from the use of previously produced homes (about 5 billions), or consumptive goods and services, the cost of which was not met from family and individual incomes. See Chap. VII, p. 89.



proved techniques and methods may have increased man-hour productivity since 1929 by as much as 25 per cent, the production of consumption goods on a 30-hour week basis (for the same population as in 1929) would be approximately 63 billion. Under these conditions, consumption would have to be reduced below the 1929 level by some 10 per cent, since consumption in 1929 was about 70 billion. On a 40-hour week, with a 25 per cent increase in efficiency, and the same level of employment as in 1929, production would be approximately the same as in 1929.

But has there been any significant increase in productive efficiency during the depression period? While we have made no thorough study of this problem, there does not appear to be much ground for believing that there has been a universal increase in efficiency approaching 25 per cent. It is true that in numerous instances new and better equipment has been installed—though this is far from general. It is also a well-known fact that the building of new plants almost entirely ceased during the depression and that expenditures on equipment have in many cases been confined to the making of indispensable repairs. One of the things that we are now relying upon to furnish employment is the making good of deferred maintenance on the railroads, in industrial establishments, and on highways, streets, and other public works. The drastic curtailment in production schedules during the depression in the so-called capital producing industries affords rather conclusive evidence that *in general* the productive capacity of our industrial establishment, so far as plant and machinery are determining factors, has not been increased materially since 1929.

On the side of operating efficiency there has been great improvement in many lines of manufacturing, but much

less in most other types of productive operations. Man-hour efficiency in manufacturing showed a marked increase during the early months of the recovery period, as compared with 1929, but this was attributable, in some measure, to the fact that the smaller number of employees on the payrolls represented a more highly selected labor personnel. As the less efficient workers are absorbed, the average unit cost will tend to increase.

To summarize: If we have a 30-hour working week, with complete utilization of our labor force and productive establishment, and then assume a universal increase in efficiency in agriculture, mining, manufacturing, transportation, marketing, and other branches of industry of as much as 25 per cent, we would still have a productive output considerably smaller than in 1929. Unless we can be sure of a vast increase in productive efficiency the working day cannot be appreciably shortened without a curtailment of production, and, in consequence, without reducing consumption standards below the level of 1929.

Looking forward one may, to be sure, paint a picture of productive potentialities that would seem to make the realization of vastly higher living standards easy of attainment. By assuming that all of our existing industrial plant and equipment, except the very latest models, could be summarily scrapped—without cost to anybody—and be replaced forthwith by the best that is known to science, one can conjure up—as some imaginative people have done—vast productive possibilities. But we are confronted unfortunately by stern practical realities: old plant and equipment cannot be scrapped without financial costs; nor can the latest improvements be installed instantaneously on a universal scale. The railroad industry affords perhaps one of the best examples of what

might be accomplished *theoretically*; but the realization of the productive economies there possible is held back alike by the immediate financial costs involved, by conflicting interests of the various railway groups, and—not least—by the opposition, incorporated in legislation, of railway laborers who fear the effects of such improvements upon the demand for their services.

In the light of such practical considerations as these the production dreams of engineers have to be liberally discounted. The most that can be hoped for is a gradual increase in productive output, as existing plant and equipment can be replaced by more efficient types and as new methods can be progressively introduced. It is helpful, in considering this problem, to recall again that during the great era of technological advancement between 1900 and 1929 per capita production in the United States increased by less than 40 per cent.

In due course we can expect a much larger production for the same expenditure of human energy than has yet been possible. But for the immediate future we cannot count on production taking care of itself if the working week is materially reduced. In any event, we are desirous of raising the standard of living substantially above the level hitherto realized—not merely restoring it to the unsatisfactory level then prevailing.

6. *In emphasizing the need of increasing consumption, we must not forget the necessity of simultaneously expanding production.* In focussing attention upon the importance of expanding consumption among the masses of the people as a means of providing markets for the output of our productive establishment, we must not lose sight of the inter-dependence of production and consumption. The prevalent notion that the problem of production has been completely solved has led many

people to conclude that *all* we need to do to remove our economic difficulties is to increase, by some means or other, the money income of the public—that nothing else is of any importance.

No matter how much we may increase wage rates with a view to expanding purchasing power, we will not find available in the market places the goods which minister to the satisfaction of human wants unless they are produced. Whether we live under a wage, price, and profit system or under a completely communistic method of economic organization, it will always be true that the level of consumption or the standard of living can be raised only through the production of food, clothing, shelter, comforts, and luxuries.

Our analysis has thus far not given a conclusive answer to the vital question raised for analysis in this series of volumes: What is the relation of the distribution of income to economic progress? As was shown in the general foreword to this series of volumes, the assumption of classical writers on economics has been that the initial compelling or pushing force is always increased savings—which result in increased capital equipment, greater efficiency, lower costs of production, and consequent lower prices, unaccompanied by declining money wages—thus automatically distributing increased incomes to the masses and providing the widespread purchasing power regarded as essential. The fact that the purchasing power of the great masses of the population is quite inadequate to absorb, at the prices prevailing, the output of our productive establishment clearly suggests that this automatic process of wealth diffusion is somehow impeded, with a resulting retardation of economic progress.

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We must rest our analysis for the time being at this point. Not until we have completed the analysis of Volume III, dealing further with the relation of consumption and saving and the factors which control and influence the formation of capital, will we be in a position to address ourselves to a consideration of the means which may possibly be devised for bringing about such a distribution of current annual income as will promote a more efficiently functioning and developing economic organization.

## STATISTICAL APPENDIXES

## APPENDIX A

### INCOME AND ITS DISTRIBUTION

The presentation of the material in this appendix has two purposes. Aside from serving as a basis for the analysis of America's capacity to consume, it aims to lay the foundation for a rational discussion of the central theme in the larger study of which this volume is a part, namely, the relationship between the distribution of income and economic progress. The special points of emphasis in the arrangement of the data are explained by these two objectives.

#### I. NATIONAL INCOME VS. INDIVIDUAL INCOME

In the course of the present study we had occasion to use income figures from the standpoint of the commonwealth as a whole and from the standpoint of individuals and families as spending units. As in many other connections in economics, the two views are not the same, and it is desirable to examine them briefly before we consider the statistical data.

#### A. NATIONAL INCOME AND ITS MEASUREMENT

From the national standpoint, production and income are what may be called simultaneous equivalents. Production generates income and, measured in terms of money, the two are exactly equal; the net value of the national product is made up of the parts distributed as wages, salaries, profits, rents, interest, dividends, and such undivided profits as are retained in corporate business. The national income may therefore be defined as the money equivalent of the goods and services<sup>1</sup> produced within a given period of time, or, stated another way, the goods and services equivalent of the purchasing power disbursed in the process of production.<sup>2</sup>

<sup>1</sup> Income from foreign investments and from property used in direct consumption does not fit precisely under this strict concept of national income unless it is regarded as representing goods and services produced within the income period. See pp. 9, 11, and 139-43.

<sup>2</sup> For purposes of our analysis we shall consider goods and services not in terms of psychic satisfactions or national well-being, but in terms

In accordance with the foregoing statement, the national income is conveniently measured by the amount of money, including an ascribed value to income in kind,<sup>8</sup> disbursed to or retained by producers and other claimants of the national product. This amount is, by definition, exactly equal to the purchase price of the product when considered as a whole. This identity of the total income generated in connection with production and the purchase price of the product is significant. But it should be remembered that for *individual* commodities and services the amount of income generated in their production has nothing to do with their market price. Some of the goods and services produced at a high cost, and hence accompanied by the distribution of a large amount of income in the form of wages and salaries, bring very little in the market. Some are even given away. A special case is the services, such as education and protection, furnished by governments. Although distributed free to consumers, these services are produced at a cost which appears in

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of values established in our market economy by the price system. Evidently, the two units of measurement may lead to different results. Some goods and services may be harmful and hence detract from national well-being; others, though originally commanding a price, may turn out to be sheer waste. However, this aspect of income, though of tremendous importance in the final analysis, is not within the scope of our immediate study.

<sup>8</sup> It is helpful to think of national income as composed of two parts: the goods and services which people produce for their own consumption and the goods and services produced for sale to others. As examples of direct-product income we may mention the produce consumed by farmers and others off their own farms and gardens, and the services of housewives and others in and about their own homes. The items to be included in this category reach out into a rather indefinite area where the gradation between income producing activities and non-income producing activities cannot be determined precisely and may be open to theoretical dispute. The area under dispute, however, is comparatively small and offers no practical difficulties. More serious is the fact that with respect to a large portion of the income which people produce for their own consumption, there is not sufficient basis for making evaluations. For instance, we are compelled to leave the services of housewives entirely out of consideration in the estimates of total income. This omission is particularly unfortunate because, owing to the rapid increase of the number of females in industry and to the transfer of certain production, such as canning, preserving, dressmaking, and the like, from the home to the factory, the annual totals of computed income exaggerate somewhat the growth in the total product.



the income stream in the form of wages and salaries paid to employees. At least part of this cost—certainly that part paid for by indirect taxes—is borne by the public in the form of higher prices for commodities entering the market.<sup>4</sup>

The foregoing analysis refers directly to income from the current productive activities of the people. Although this is the most significant source of national income, both in size and basic effect upon the economic system, it is not the only one. According to the usual way of calculation, the national income, in addition to income from current production, includes returns resulting from the use of accumulated stocks of durable consumption goods, from interest on non-business loans, and from foreign investments. The latter source is, of course, also principally a result of current production, though effected out-

<sup>4</sup>Because of a fundamental misconception of the relationship between money income and market values of individual commodities and services, it is sometimes contended that the free services of governments constitute additional income and that in computing the national total we should add to the money income distributed in connection with all productive activities an imputed value of the free goods and services. Obviously such procedure would result in double counting. The imputation of value to goods and services for which consumers make no direct payment is purely a cost accounting matter which does not affect total income. However, it is significant in a comparison of national expenditures by consumption categories. Consideration of the value of services supplied on a communal basis is also of significance in a detailed study of income distribution. Since the incidence of the cost of such services may not be identical with the incidence of the benefits, some individuals may by the arrangement derive additional income. Such additional income, however, represents merely a shift from one set of society to another, without affecting the total. As will be seen later, on account of the absence of basic data, the redistribution of income through governmental channels cannot be measured with any ease or precision, and is not included in the computations of personal income distributions made in this study.

"Free" services are not supplied by governments alone. Commercial concerns offer a great variety of goods and services for which consumers are not required to make direct payments. Should these services be given a value and added to the money income of the people? Concretely, let us take such a free good as the use of hotel lobbies by the general public. It is not an impossible task to estimate, by the process of cost allocation, the amount the public expends for this service and thus assign it a value; but, obviously, this valuation cannot be added to the amount paid by paying guests to compute the value of all hotel services; nor can it be added to the money income of the people in order to compute the total value of the goods and services received.

side the boundaries of the United States by the nationals of other countries.

There can be no question that the net returns from foreign investments are to be considered as part of the national income since they represent an addition to the flow of goods and services enjoyed by the people. That returns from the use of durable consumption goods and from interest on non-business loans should under all conditions be counted as national income is not so evident.<sup>5</sup> This question does not arise in connection with interest and rent payments pertaining to productive activities. There, interest and rent, like wages and profits, are merely distribution shares in the total product, without direct reference to the productive contributions of the claimants. Interest and rental payments arising in connection with consumption, however, might from some viewpoints be regarded as transfers of part of the national product from recipient to recipient. On this basis, the difference between interest and dividends in production and in consumption would be that in production they represent original shares in the primary distribution of the national product while in consumption they are shares in the secondary distribution, that is, they are claims to parts of the shares distributed among original claimants. So construed, non-business rent and interest payments would constitute income to individuals but not to the nation as a whole.

A justification for considering non-business rent as part of the national income may be found in the fact that such rent is a measure of the extent to which the nation utilizes its stock of durable consumption goods. Presumably the payment of rent indicates that an existing good, a residence, for instance, is occupied and renders a service. If the same house stands idle it renders no service and brings no rental. Non-business rents

<sup>5</sup> These returns refer not to the actual wear and tear of the durable goods but to the net rental value or interest on the valuation of these goods. Let us take, for example, the case of a residence. Taxes, maintenance and repairs, insurance, and even depreciation (in the form of new buildings) will show up elsewhere in the income stream as wages, salaries, and so on. The question is whether the differential, or *net* rent, which represents no tangible production or expenditure of human effort during the income period, but merely a payment for the privilege of using that which is already in existence, should be considered an addition to national income.

might therefore be considered as the income derived from the "salvaging," so to speak, of a past product, or the prevention of loss from non-use.<sup>6</sup>

This conception may be extended to the interest on residential and chattel mortgages on the assumption that unless the property is used and renders a service the owner will discontinue interest payments. But this is not necessarily true. Because of the relative rigidity of contractual arrangements, mortgage interest is not always a reflection of the value of the services rendered currently by mortgaged property. In many cases interest payments by consumers represent purely transfers of product from one set of individuals to another, without attendant increase in the national income either in the form of new product or in the utilization of old products.

A reason for including rent of durable consumption goods and interest on non-business loans in the computation of the total national income may perhaps be found in the theoretical explanation of interest and rent which asserts that a durable good when produced is potentially worth more than its cost, the cost being merely the discounted value of the service the good will render during its life-time. This latent service presumably comes into fruition currently, and by itself, with no further effort on anybody's part. Some economists would say that this automatic giving off of service is production. This way of thinking is tied up with the "waiting" theory of interest. Whatever philosophical content this theory may have with respect to the explanation of the phenomenon of interest, it is much to be doubted if the "service of waiting," though under some conditions it may involve individual sacrifice worthy of compensation, in itself constitutes a contribution to the national product.

A practical argument for treating rent for the use of durable consumers' goods and interest on loans to consumers as part of the national income is that it is difficult to distinguish investment in consumption goods from investment in production goods. Under existing arrangements both command a return. Moreover, the line between a consumer's good and a producer's

<sup>6</sup> But this line of reasoning applies with even greater force to the portion of gross rent set aside for depreciation. A house depreciates whether it is used or not, and occupancy means the enjoyment of a service which otherwise would be lost.

good is hard to draw. Consequently we have in this study adhered to the general practice and considered income from property not used in production as part of the national income. For certain purposes in our analysis, however, national income in the more restricted sense, which it will be recalled covers only income from current productive activities, has afforded a more accurate unit of measurement.

In summary, for the purposes of the present study, we have divided the "national income" into two categories: (1) income resulting from current production of goods and services; and (2) income from the use of property in consumption. In the first category belong all wages, salaries, dividends and business profits, and all interest and rent derived from business and industrial enterprises and governments. Net returns on foreign investments may or may not be included, depending upon the purpose. Part of our analysis, for instance, deals with the income produced by the individuals engaged in production. It is obvious that in this type of inquiry returns on foreign investments should not be included. On the other hand, when it is desired to measure the active flow of goods and services, such income should be added to that generated in domestic production.<sup>7</sup>

The second category includes net residential rent, net interest on installment buying of consumers' goods, net interest on other consumers' goods, imputed net rent on owned homes, and finally imputed interest on other durable goods in the hands of consumers. This last item is in exactly the same class as the imputed income from owned homes. There is no more reason for giving a value to the service rendered by an owned home than for giving a value to the service rendered by other durable goods in the hands of consumers, such as furniture, automobiles,

<sup>7</sup>The line between the two classes is indistinct. It is not feasible to determine with any degree of definiteness whether an activity or service should be classified as productive or consumptive. It is difficult in many cases to tell where production ends and where consumption begins, and, likewise, it is almost impossible in many cases to determine whether a good is a production good or a consumption good. It is, for instance, clear that a private residence is a consumption good. However, some will dispute whether or not an apartment house is one. It may well be argued that an apartment house is as much a business enterprise as a manufacturing establishment.

clothing, and the like. However, the imputed income from these goods has not been included in the aggregate income distributed by states and income classes.<sup>8</sup>

#### B. THE INCOME OF INDIVIDUALS

The distinction between what is generally referred to as *national income* and *personal* or *individual income* set forth in Chapter I requires some amplification. As there stated, the aggregate of personal incomes does not necessarily coincide with the total *national* income. While national income, as we have seen, is primarily a production concept, individual income is largely a distribution concept. In primitive society the two are identical: the national income is merely the aggregate of individual incomes. In our own society there is still a considerable portion of the national income which is an exact counterpart of individual incomes: for instance, the product consumed by farmers off their own farms.

The bulk of production in modern society, however, is carried on by individuals not for themselves but for others. Most producers surrender their product and receive in exchange generalized claims in terms of money entitling them to shares in the goods and services of society at large. Their own product finds its way into a common reservoir containing the results of immediate production as well as the accumulations from the past. They may redeem their claims as they see fit in whatever goods or services are contained in the imaginary reservoir.<sup>9</sup>

<sup>8</sup> The reason for this omission is the absence of any basic indicator of the variability of this source of income. See pp. 168-69.

<sup>9</sup> A very important distinction between personal income and national income lies in the concept of saving. Individuals can save their income in the form of claims upon the future product of society. Instead of consuming their share of the product within the income period they can have others do the consuming or "spending," reserving for themselves the right to claim an equivalent product at some future time. As a group, however, in the usual sense, we can only save things—unless it be claims upon another group. The possible volume of such savings is evidently limited. Since things deteriorate and become obsolete, group saving of this sort soon becomes extremely wasteful. The only other form of "saving" open to a group is of an intangible kind and that is the building up of the skill, intelligence, and resourcefulness of the people, so as to make them more productive in the future; and the perfection of its institutions, so as to assure the continuance and efficiency of the productive process.

Ideally, there should be a balance between the number of units of product added to the reservoir and the number of money units issued within the income period. This, however, is not always the case. It is of great significance that in some periods more money tokens are issued to individuals than the value of new goods and services placed on the market. The source of this extra purchasing power is credit expansion, and the transactions giving rise to it are the transfers of property which had risen in value during the period. The rise in the value of existing property cannot be considered as national income; it represents no actual addition to the wealth of the nation. But to the individual, if he realizes on it by sale, in many respects it represents income on a par with his receipts from production.<sup>10</sup>

It may be argued that in the sale of property the gain made by one individual comes out of the income of another; the fact remains, however, that the buyer of the property is willing and eager to pay the agreed price irrespective of what the property cost the seller. In paying the higher price the buyer invests his income but does not necessarily impair it, especially when viewed in the light of conditions at the time of the transaction. Because of our credit system he need not even contract his regular expenditures on account of his investment. On the other hand, the seller getting the profit acquires additional income which he may dispose of at will either in the purchase of con-

It is this type of group saving that in the final analysis is the foundation also of individual savings. Claims upon future product derive their value only from the assurance that the productive machinery of society will continue to function. Realization upon the savings can only be effected if there is a sufficient flow of goods and services to afford a margin over the immediate needs of the people. The wider this margin and the more prosperous the community, the more valuable are the claims representing the past savings. In other words, fundamentally we can save only in terms of future efficiency of the economic system, and only to a limited extent in tangible things. Moreover, even the tangible things, that is property, derive their value from the income flow.

<sup>10</sup> It should be stated that the effect of credit expansion upon purchasing power theoretically extends to the entire rise in the value of property and is not confined to the portion which has changed hands. Thus the owner of property may realize purchasing power on the added value by borrowing from a bank. The extent to which unrealized capital gains affect the psychology of spending and saving cannot be measured.

sumption or capital goods already in existence or commodities and services to be produced within the income period.

The spurious nature of much of this income, even in so far as individuals are concerned, is well recognized. In many cases the proceeds received from the sale of property were reinvested in property which presumably had also gone up in value so that the investor was perhaps no better off than if he had kept his original investment. However, a large proportion of the profits were received by individuals acting as traders, who within a specified income period managed to acquire title to a greater share of the wealth and income of the nation than they had at the beginning of the period. To this extent there was an actual redistribution of wealth and income. It would of course be desirable to separate the realized profits of investors from those of traders, but this is impossible.

It is clear that theoretically there are arguments both for and against considering profits from the sale of property as individual income. As a general proposition, if a choice were possible, we would be inclined to leave capital gains out of consideration. In the present instance, however, practical considerations have made it necessary to adopt the opposite course. One of the major requirements of our estimated distribution of income among all the families of the United States was that it could be used effectively in connection with existing budgetary studies containing needed information with respect to the disposition of income by families in different income groups. Therefore, it was essential that in making our distribution we follow as closely as possible the concept of income used in the sample budgets. Although this concept undoubtedly varied somewhat from sample to sample, it was on the whole that of the man in the street. In general it included all the obvious income receipts of the individual, regardless of source; and—owing to the custom established by the American income tax requirements—in most cases it undoubtedly included profits from the sale of property. It was necessary therefore that capital gains be included in our concept of individual income.

We must now consider other features of this practical concept of individual income. It is believed that usually the individual does not deduct contributions and taxes (except business taxes)

when he thinks of his income any more than he subtracts losses through robbery, fraud, gambling, and so on. On the other hand, undoubtedly most of the recipients of income from these sources consider such receipts as income. Thus a given increment of income appears in more than one individual account. Obviously, therefore, the aggregate of individual incomes covered by the concept adopted includes, in addition to capital gains, certain duplications. In this respect it is different from a total of national income.

Another discrepancy between the aggregate of individual incomes and the total national income results from the difficulty of imputing corporate surplus to individual owners. Though this is merely a technical difficulty which may be overcome with the development of additional information with respect to stock ownership, it introduces a lack of agreement between the estimate of the total national product and the aggregate of the estimated realized incomes of individuals. In some years individuals receive from industry a larger volume of purchasing power than is represented by the total value of the product of industry. In other years, a considerable portion of the industrial income is retained as corporate surplus and does not find its way to individuals.



## II. INCOME OF THE AMERICAN PEOPLE, 1900-29

So far as possible throughout this study existing estimates of "total" national income have been used. Any modifications made in the basic estimates have been introduced in order to facilitate the special analysis here undertaken rather than to correct or change the basic figures in any way.

## A. NATIONAL INCOME, 1900-29

The only continuous series of national income for the years prior to 1930 is that developed by Willford I. King.<sup>11</sup> This series, which ends for the most part with the year 1925, has been carried forward to include the years 1926-29.<sup>12</sup> In so far as possible King's assumptions and classifications have been followed so as to make the additional estimates part of the series. No attempt at refinement has been made.

The data in this section of Appendix A are for the most part self-explanatory. The growth in income of the American people shown in Table 1, page 148, is based upon the data presented in Table 5, page 152. It is perhaps superfluous to say that the separation of production income from other realized income is very crude. Although the figures do not include profits from the sale of property by individuals, it was impossible to make allowance for profits from the sale of property by corporations. Since there is reason to believe that in the late twenties such profits were proportionately higher than in earlier years, their inclusion in our figures perhaps slightly exaggerates the trend.

The estimates given in current dollars in Table 1 are corrected for changes in the price level in Table 2. The correction is made on two different bases and from different angles: (1) from the standpoint of consumption, and (2) from the standpoint of production. The totals representing income from all sources, including rent and interest paid by consumers, have been deflated by means of an index representing prices of goods and services purchased by consumers,<sup>13</sup> while the totals of income

<sup>11</sup> *The National Income and Its Purchasing Power.*

<sup>12</sup> See Table 5, pp. 152-53.

<sup>13</sup> King's index was used for the purpose. See *The National Income and Its Purchasing Power*, pp. 68-69, and *News Bulletin of the National Bureau of Economic Research* for Sept. 10, 1928. For 1928 and 1929

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1. THE GROWTH IN INCOME OF THE AMERICAN PEOPLE, 1900-29<sup>a</sup>  
(In current dollars)

Year	All Income		Income from Current Production <sup>b</sup>		Other Income <sup>c</sup>	
	Total (In millions)	Per Capita	Total (In millions)	Per Capita	Total (In millions)	Per Capita
1900.....	19,100	251	17,035	224	2,065	27
1909.....	30,900	341	27,726	306	3,174	35
1910.....	32,580	353	29,175	316	3,405	37
1911.....	32,547	347	29,066	310	3,481	37
1912.....	35,223	370	31,604	332	3,619	38
1913.....	37,122	382	33,309	343	3,813	39
1914.....	36,232	366	32,254	326	3,978	40
1915.....	39,322	391	35,200	350	4,122	41
1916.....	48,227	473	43,823	430	4,404	43
1917.....	56,061	542	51,307	496	4,754	46
1918.....	62,394	597	56,770	543	5,624	54
1919.....	70,281	668	63,880	607	6,401	61
1920.....	75,397	707	67,325	631	8,072	76
1921.....	60,685	558	52,745	485	7,940	73
1922.....	67,601	613	59,602	541	7,999	72
1923.....	76,770	685	68,381	610	8,389	75
1924.....	78,600	688	69,924	612	8,676	76
1925.....	84,768	731	75,918	655	8,850	76
1926.....	86,395	735	77,177	657	9,218	78
1927.....	86,333	725	77,003	647	9,330	78
1928.....	89,335	741	79,679	661	9,656	80
1929.....	91,988	755	81,940	673	10,048	82

<sup>a</sup> Exclusive of profits from the sale of property. See Table 5, pp. 152-53, for sources.

<sup>b</sup> Exclusive of income from foreign investments.

<sup>c</sup> Chiefly returns on property used in direct consumption. Includes also net income from foreign investments.

from current production have been reduced to dollars of the same purchasing power by means of an index intended to represent values of goods and services produced.<sup>14</sup>

the National Industrial Conference Board index was spliced on to King's index.

<sup>14</sup> A composite index was obtained by combining the Bureau of Labor Statistics index of wholesale prices, Carl Snyder's index of general prices,

## INCOME AND ITS DISTRIBUTION

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### 2. THE GROWTH IN REAL INCOME OF THE AMERICAN PEOPLE, 1900-29<sup>a</sup> (In dollars of 1913 purchasing power)

Year	All Income Including Business Savings <sup>b</sup>		All Income, Excluding Business Savings <sup>b</sup>		Income from Current Production Only <sup>a</sup>	
	Total (In millions)	Per Capita	Total (In millions)	Per Capita	Total (In millions)	Per Capita
1900.....	24,331	320	23,694	311	22,009	289
1909.....	32,424	358	31,064	343	29,371	325
1910.....	33,381	362	32,202	349	29,801	323
1911.....	33,554	358	32,842	350	30,823	329
1912.....	35,905	377	34,635	363	32,053	336
1913.....	37,122	382	35,722	368	33,309	343
1914.....	35,944	363	35,364	357	32,449	327
1915.....	39,049	388	36,946	367	34,510	343
1916.....	44,204	433	39,677	389	37,044	363
1917.....	43,593	421	39,914	386	33,911	328
1918.....	41,130	393	39,821	381	32,720	313
1919.....	40,001	380	37,536	357	33,943	323
1920.....	38,079	357	37,374	350	31,285	293
1921.....	35,845	330	37,431	344	32,458	299
1922.....	42,704	387	41,646	378	37,604	341
1923.....	48,041	429	46,519	415	41,468	370
1924.....	49,064	429	48,150	421	42,404	371
1925.....	51,312	443	49,587	428	44,605	385
1926.....	51,983	442	50,645	431	45,775	390
1927.....	52,008	437	51,408	432	46,387	389
1928.....	55,800	463	54,308	450	47,231	392
1929.....	57,673	473	56,270	462	48,543	398

<sup>a</sup> Exclusive of profits from the sale of property. Based on Table 5, p. 152.

<sup>b</sup> Deflated by index representing prices of goods and services purchased by consumers. (Based on King's data in *The National Income and Its Purchasing Power*.) This does not strictly apply to the portion of the income retained as savings in business enterprises. However, the proportion of this type of income is so small and the difference between the price index of capital goods and that of consumers' goods is so slight for the most part that it was not deemed essential to compute a new index.

<sup>c</sup> Deflated by an index intended to represent values of goods and services produced. See pp. 147-48 and 151.

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3. RELATIVE GROWTH OF REAL INCOME OF THE AMERICAN PEOPLE, 1900-29  
(1900 = 100)

Year	Income <sup>a</sup>				Proportion of Population 16 Years and Over Gainfully Employed <sup>d</sup>	Standard Number of Hours Worked per Week <sup>e</sup>
	Realized From All Sources <sup>b</sup>		From Current Production Only <sup>c</sup>			
	Total	Per Capita	Total	Per Capita		
1900.....	100.0	100.0	100.0	100.0	100.0	100.0
1909.....	131.1	110.3	133.4	112.5	...	95.8
1910.....	135.9	112.2	135.4	111.8	104.1	95.3
1911.....	138.6	112.5	140.0	113.8	...	94.9
1912.....	146.2	116.7	145.6	116.3	...	94.6
1913.....	150.8	118.3	151.3	118.7	...	93.9
1914.....	149.3	114.8	147.4	113.1	...	93.4
1915.....	155.9	118.0	156.8	118.7	...	93.4
1916.....	167.5	125.1	168.3	125.6	...	93.0
1917.....	168.5	124.1	154.1	113.5	...	92.5
1918.....	168.1	122.5	148.7	108.3	...	91.1
1919.....	158.4	114.8	154.2	111.8	...	89.5
1920.....	157.7	112.5	142.1	101.4	103.5	88.0
1921.....	158.0	110.6	147.5	103.5	...	87.8
1922.....	175.8	121.5	170.9	118.0	...	88.1
1923.....	196.3	133.4	188.4	128.0	...	88.0
1924.....	203.2	135.4	192.7	128.4	...	87.3
1925.....	209.3	137.6	202.7	133.2	...	87.1
1926.....	213.7	138.6	208.0	134.9	...	87.8
1927.....	217.0	138.9	210.8	134.6	...	87.4
1928.....	229.2	144.7	214.6	135.6	...	87.4
1929.....	237.5	148.6	220.6	137.7	100.9	87.1

<sup>a</sup> Adjusted for changes in purchasing power of the dollar. Based on Table 2, p. 149. Excludes profits from the sale of property.

<sup>b</sup> Excludes business savings.

<sup>c</sup> Includes business savings.

<sup>d</sup> Based on census data. The 1929 figure is as of Apr. 1, 1930. See Table 4, p. 151.

<sup>e</sup> Based on Paul H. Douglas, *Real Wages in the United States, 1890-1926*, p. 208 for the period 1900-25; Paul H. Douglas and Florence Tye Jennison, *The Movement of Money and Real Earnings in the United States, 1926-28* for 1926-28. The 1929 figure was estimated directly from U. S. Bureau of Labor Statistics data. See *Statistical Abstract of the United States, 1931*, pp. 348-53.

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The effect of the deflators is best seen in Table 3, page 150, where estimates of real income are given in terms of relatives, with 1900 as the base year. The two trends represent somewhat different concepts of real income. The first presumably measures the growth of consumers' purchasing power, while the second approaches being a measurement of physical volume of production of goods and services. Yet there appears to be no good reason

### 4. PROPORTION OF THE POPULATION IN GAINFUL OCCUPATIONS CENSUS YEARS, 1900-30<sup>a</sup>

Census Year	Persons 16 Years of Age and Over						Children under 16	
	Absolute Ratio			Relative Ratio (1900=100)			Absolute Ratio	Relative Ratio (1900=100)
	Both Sexes	Males	Females	Both Sexes	Males	Females		
1900 . . .	0.565	0.905	0.206	100.0	100.0	100.0	0.182	100.0
1910 . . .	0.588	0.910	0.239	104.1	100.6	116.0	0.141	77.5
1920 . . .	0.585	0.911	0.241	103.5	100.7	117.0	0.087	47.8
1930 . . .	0.570	0.880	0.253	100.9	97.2	122.8	0.047	25.8

<sup>a</sup> Based on adjusted census data. See Edwin G. Nourse and Associates, *America's Capacity to Produce*, p. 496.

for any great divergence between the two. Except for the slight differences in the trend of the volume of accumulated durable goods, and in the relative amount of income set aside as corporate

and an index of wages per hour outside of agriculture. The weights assigned to the three indices are 5, 3, and 2 respectively. The composite index undoubtedly falls short of an ideal measure of changes in the value of the product resulting from changes in the value of money, yet it is perhaps as good an index as can be devised with existing data. Using different weights would not materially affect the results. The merits and deficiencies of the index may be indicated by the following statement of the items entering into its composition. Since Snyder's index, which is given a weight of 3, is already a composite containing wholesale prices and wages, our final index gives a greater weight to wholesale prices and wages than is indicated by the original weights. On the basis of the weights used by Snyder it would appear that the final weights in our own index are: wholesale prices, 5.6; wages, 2.45; and all other items—such as retail food prices, rents, security prices, machinery—1.95. It may perhaps be assumed that the retail prices and also the security and realty prices introduced by Snyder's index will reflect to some extent changes in prices of professional and other services, thus re-enforcing the labor portion of our index. The weakest point in the index is the wage series, which fails to represent adequately the changes in the value of services rendered by salaried workers and entrepreneurs in trade and in the professions.

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S. INCOME OF THE PEOPLE OF  
(In millions)

Year	Totals			Realized Income from Production of					
	All Income	Production Income <sup>b</sup>	Realized Income <sup>c</sup>	Total	Agricultural	Mining	Manufacturing	Construction	Transportation and Communication <sup>d</sup>
1900 <sup>e</sup>	19,100	17,035	18,600	16,535	...	...	...	...	...
1909.	30,900	27,726	29,604	26,430	4,988	833	5,481	1,692	2,569
1910.	32,580	29,175	31,429	28,024	5,218	917	6,204	1,580	2,795
1911.	32,547	29,066	31,857	28,376	4,815	910	6,251	1,607	2,902
1912.	35,223	31,604	33,977	30,358	5,294	1,006	6,838	1,742	3,051
1913.	37,122	33,309	35,722	31,909	5,133	1,153	7,332	1,527	3,213
1914.	36,232	32,254	35,647	31,669	5,081	971	6,914	1,412	3,186
1915.	39,322	35,200	37,205	33,083	5,488	983	7,362	1,394	3,252
1916.	48,227	43,823	43,288	38,884	6,631	1,457	10,260	1,516	3,574
1917.	56,061	51,307	51,329	46,575	9,188	1,810	12,477	1,206	4,067
1918.	62,394	56,770	60,408	54,784	11,205	2,034	14,794	1,207	5,156
1919.	70,281	63,880	65,951	59,550	12,182	1,875	16,090	1,846	5,798
1920.	75,397	67,325	74,000	65,928	11,057	2,355	19,531	1,895	7,214
1921.	60,685	52,745	63,370	55,430	6,967	1,843	13,274	1,740	6,090
1922.	67,601	59,602	65,925	57,926	7,300	1,725	13,957	2,198	5,862
1923.	76,770	68,381	74,338	65,949	8,026	2,396	16,835	2,465	6,503
1924.	78,600	69,924	77,137	68,461	8,325	2,038	16,276	2,974	6,531
1925.	84,768	75,918	81,917	73,067	9,089	2,169	16,866	3,458	6,729
1926.	86,395	77,177	84,172	74,954	8,214	2,454	17,619	3,655	6,966
1927.	86,333	77,003	85,337	76,007	8,371	2,244	17,475	3,630	7,098
1928.	89,335	79,679	86,947	77,291	8,109	2,058	17,966	3,810	7,070
1929.	91,988	81,940	89,750	79,702	8,254	2,136	19,097	3,305	7,367

<sup>a</sup> Unless otherwise noted, the data for 1909-25 are from King, *The National Income and Its Purchasing Power*, and for 1926-29, from unpublished estimates of the National Bureau of Economic Research continuing King's series. In making the additional estimates referred to in other footnotes to this table we have sought consistency with the original series rather than greater refinement of data.

<sup>b</sup> "Realized Income from Production of Goods and Services" plus "Business Savings."

<sup>c</sup> "Realized Income from Production" plus "Other Realized Income."

<sup>d</sup> Including private electric light and power. Does not include highway transportation.

<sup>e</sup> Includes income from non-farm gardens, cows, and chickens. Non-business interest payments have been deducted from King's original estimates.

The estimated interest on mortgages on owned homes in 1929 has been projected back on basis of rental value of owned non-farm homes and estimated interest on small loans, installment credit, etc., has been projected back on basis of total income.

<sup>f</sup> Corporate savings, exclusive of those of life insurance companies. (The savings of such companies have been regarded as though they were savings by the policy holders.) It has not been possible to deduct profits from the sale of real estate, stocks, bonds, etc., from the income of corporations. In 1929 this item amounted to 1.3 billion dollars. On the other hand, the

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THE UNITED STATES, 1900-29<sup>a</sup>  
of dollars)

Goods and Services				Other Realized Income						Business Savings <sup>g</sup>
Trade	Banking	Government	Unclassified <sup>e</sup>	Total	Net Interest and Dividends from Foreign Investments	Residential Rent	Non-Business Interest <sup>f</sup>	Imputed income		
								Owned Non-Farm Homes	Durable Consumption Goods Other Than Homes	
...	...	...	...	2,065	...	...	...	...	...	500
3,685	337	1,554	5,291	3,174	-74	963	549	886	850	1,296
3,735	389	1,678	5,508	3,405	-78	1,035	581	935	932	1,151
4,034	409	1,767	5,681	3,481	-82	1,064	587	946	966	690
4,041	429	1,862	6,095	3,619	-86	1,110	606	971	1,018	1,246
4,488	453	1,981	6,629	3,813	-90	1,180	636	1,017	1,070	1,400
4,753	454	2,093	6,805	3,978	-85	1,241	654	1,052	1,116	585
4,839	463	2,192	7,110	4,122	-68	1,275	664	1,064	1,187	2,117
5,323	480	2,297	7,346	4,404	-46	1,328	696	1,092	1,334	4,939
6,342	509	3,044	7,932	4,754	-51	1,358	722	1,100	1,625	4,732
6,830	572	6,278	6,708	5,624	-26	1,433	771	1,144	2,302	1,986
8,019	646	6,136	6,958	6,401	-17	1,588	841	1,249	2,740	4,330
8,726	775	5,311	9,064	8,072	-8	1,919	979	1,465	3,717	1,397
8,440	848	5,629	10,599	7,940	-7	2,216	1,053	1,663	3,015	-2,685
8,680	930	5,792	11,482	7,999	354	2,289	1,073	1,687	2,596	1,676
10,772	997	5,783	12,172	8,389	369	2,364	1,109	1,713	2,834	2,432
11,050	1,029	5,896	14,342	8,676	390	2,467	1,139	1,757	2,923	1,463
11,996	1,089	6,130	15,541	8,850	419	2,517	1,154	1,760	3,000	2,851
12,442	1,155	6,355 <sup>h</sup>	16,094	9,218	467 <sup>j</sup>	2,572	1,245	1,768	3,166 <sup>k</sup>	2,223
12,754	1,186	6,520 <sup>l</sup>	16,729	9,330	519 <sup>l</sup>	2,587	1,264	1,746	3,214 <sup>k</sup>	996
13,137	1,230	6,535 <sup>l</sup>	17,376	9,656	534 <sup>l</sup>	2,728 <sup>l</sup>	1,292	1,835 <sup>l</sup>	3,267 <sup>k</sup>	2,388
13,454 <sup>m</sup>	1,394	6,717 <sup>l</sup>	17,978	10,048	565 <sup>j</sup>	2,825 <sup>l</sup>	1,350	1,900 <sup>l</sup>	3,408 <sup>k</sup>	2,238

realized income of individual entrepreneurs included in the columns under the heading "Realized Income from Production of Goods and Services" presumably represents withdrawals only and does not include business savings. To some extent the two items offset each other, and the figures given in this column may be taken as rough estimates of business savings, both corporate and individual.

<sup>a</sup> Based on Willford I. King, *Wealth and Income of the People of the United States*.

<sup>b</sup> Personnel payments estimated on basis of change in number of employees. Interest payments are preliminary estimates of the National Bureau of Economic Research.

<sup>c</sup> Amos E. Taylor, "The Balance of International Payments of the United States in 1932," *U. S. Department of Commerce Trade Information Bulletin No. 814*, p. 35.

<sup>d</sup> Based on ratio to total realized income from production of goods and services for 1923-25.

<sup>e</sup> Based on ratio to total realized income from production of goods and services exclusive of agriculture, 1923-27.

<sup>f</sup> Entrepreneurial and property income computed on basis of index of department store sales and ratio of profits to sales of mercantile corporations for 1928 and 1929; wages and salaries on basis of change in average wages and salaries and growth in number of employees in trade.

6. RELATIVE IMPORTANCE OF DIFFERENT SOURCES OF INDIVIDUAL INCOME, 1909-29<sup>a</sup>  
Income from Various Sources Expressed as Percentages of Income from Production of Goods and Services

Year	Production of Goods and Services										Other Sources				Grand Total
	Total	Agricultural	Mining	Manufacturing	Construction	Transportation and Communication	Trade	Banking	Government	Unclassified	Total	Foreign Investments	Durable Consumers' Goods		
													Money Returns <sup>b</sup>	Imputed Returns <sup>c</sup>	
1909...	100	18.9	3.3	20.7	6.4	9.7	13.9	1.3	3.9	20.0	12.0	-0.3	5.7	6.6	112.0
1910...	100	18.6	3.3	22.1	5.6	10.0	13.3	1.4	6.0	19.7	12.2	-0.3	5.8	6.7	112.2
1911...	100	17.0	3.2	22.1	5.7	10.2	14.2	1.4	6.2	20.0	12.3	-0.3	5.8	6.8	112.3
1912...	100	17.4	3.3	22.6	5.7	10.1	13.3	1.4	6.1	20.1	11.9	-0.3	5.6	6.6	111.0
1913...	100	16.1	3.6	23.0	4.8	10.1	14.0	1.4	6.2	20.8	11.9	-0.3	5.7	6.5	111.0
1914...	100	16.0	3.1	21.8	4.5	10.1	15.0	1.4	6.6	21.5	12.6	-0.3	6.0	6.9	112.6
1915...	100	16.6	3.0	22.3	4.2	9.8	14.6	1.4	6.6	21.5	12.5	-0.2	5.9	6.8	112.5
1916...	100	17.1	3.7	26.4	3.9	9.2	13.7	1.2	5.9	18.9	11.3	-0.1	5.2	6.2	111.3
1917...	100	19.7	3.9	26.8	2.6	8.7	13.6	1.1	6.5	17.1	10.2	-0.1	4.3	5.8	110.2
1918...	100	20.8	3.7	27.0	2.2	9.4	12.5	1.0	11.5	12.2	10.3	d	4.0	6.3	110.3
1919...	100	20.8	3.1	27.0	3.1	9.7	13.5	1.1	10.3	11.7	10.8	d	4.1	6.7	110.8
1920...	100	16.8	3.6	29.6	2.9	10.9	13.2	1.2	8.1	15.7	12.2	d	4.4	7.8	112.2
1921...	100	12.6	3.3	24.0	3.1	11.0	15.2	1.3	10.2	19.1	14.3	d	5.9	8.4	114.3
1922...	100	12.6	3.0	24.1	3.8	10.1	15.0	1.6	10.0	19.8	13.8	0.6	5.8	7.4	113.8
1923...	100	12.2	3.6	25.5	3.7	9.9	16.3	1.5	8.8	18.5	12.7	0.6	5.2	6.9	112.7
1924...	100	12.2	3.0	23.8	4.3	9.5	16.1	1.5	8.6	21.0	12.7	0.6	5.3	6.8	112.7
1925...	100	12.4	3.0	23.1	4.7	9.2	16.4	1.5	8.4	21.3	12.1	0.6	5.0	6.5	112.1
1926...	100	10.9	3.3	23.5	4.9	9.3	16.6	1.5	8.5	21.5	12.3	0.6	5.1	6.6	112.3
1927...	100	11.0	3.0	23.0	4.8	9.3	16.7	1.6	8.6	22.0	12.3	0.7	5.1	6.5	112.3
1928...	100	10.5	2.7	23.2	4.9	9.1	17.0	1.6	8.5	22.5	12.5	0.7	5.2	6.6	112.5
1929...	100	10.4	2.7	24.0	4.2	9.2	16.8	1.7	8.4	22.6	12.6	0.7	5.2	6.7	112.6

Based on Table 5, p. 152. In computing percentages no account has been taken of business savings because this item could not be allocated with any degree of accuracy among the different industries. Attention is called to the fact that all percentages are in terms of the realized income from productive enterprises and services. "Other Sources" are treated as additions; hence the totals add to more than 100 per cent.

<sup>b</sup> Residential rent and non-business interest.

<sup>c</sup> Imputed income on owned homes and other durable goods in hands of consumers.

<sup>d</sup> A negative percentage of less than 0.05.



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## 7. COMPENSATION OF EMPLOYEES, 1900-29 (In millions of dollars)

Year	Total <sup>a</sup>	Wages <sup>a</sup>	Pensions and Workmen's Compensation <sup>a</sup>	Salaries <sup>a</sup>	Compensation of Corpora- tion Officers <sup>b</sup>
1900....	9,650 <sup>a</sup>	...	...	...	...
1909....	15,090	10,529	246	4,316	...
1910....	16,266	11,330	254	4,682	...
1911....	16,498	11,325	256	4,918	...
1912....	17,587	12,112	273	5,203	...
1913....	18,822	13,017	302	5,503	...
1914....	18,516	12,396	311	5,809	...
1915....	19,361	13,117	317	5,926	...
1916....	22,470	15,660	434	6,376	...
1917....	25,802	17,741	396	7,665	1,375
1918....	32,324	20,414	678	11,232	2,226
1919....	35,399	23,029	794	11,576	1,993
1920....	42,283	29,540	1,016	11,727	2,437
1921....	36,214	23,353	1,006	11,855	2,259
1922....	37,700	24,553	1,097	12,050	2,410
1923....	42,893	28,691	1,046	13,156	2,576
1924....	44,493	29,051	1,243	14,200	2,636
1925....	46,855	30,762	1,085	15,008	2,785
1926....	49,245	32,256	1,173	15,816	2,875
1927....	49,724	31,813	1,229	16,682	2,975
1928....	50,617	31,911	1,065	17,641	3,199
1929....	53,350	34,485	1,100 <sup>d</sup>	17,765	3,337

<sup>a</sup> Figures taken or projected from King, *The National Income and Its Purchasing Power*. Beginning with 1926 use was made of preliminary estimates of the National Bureau of Economic Research, continuing King's series.

<sup>b</sup> Included in "Salaries." From *Statistics of Income*, United States Bureau of Internal Revenue, for the various years.

<sup>c</sup> Based on King's estimates in *Wealth and Income of the People of the United States* and *The National Income and Its Purchasing Power*.

<sup>d</sup> Estimated to have been practically the same as in 1928. The statistics for federal pensions indicate but a slight increase between the two years. Attention is called to the wide discrepancy between this figure and the recent estimate of the Department of Commerce given in Table 12, p. 162. The present estimate, however, is in line with King's series.

savings, there should be no difference between the physical volume of the goods and services consumers may purchase with their income and the physical volume of the goods produced. The only other factor of real difference between the two series is the net income from foreign investments; but although this item

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**8. REALIZED INCOME FROM INDIVIDUAL ENTERPRISE AND HOLDING  
OF PROPERTY, 1900-29<sup>a</sup>**  
(In millions of dollars)

Year	Total	Individual Enterprise			Holding of Property			Foreign Investments <sup>d</sup>
		Total	Non-Agricultural	Agricultural	Total	Used in Production <sup>b</sup>	Used in Direct Consumption <sup>c</sup>	
1900.....	8,950	...	...	...	...	...	...	...
1909.....	14,514	7,263	3,782	3,481	7,251	4,077	3,248	-74
1910.....	15,163	7,274	3,611	3,663	7,899	4,484	3,483	-78
1911.....	15,359	7,217	4,050	3,167	8,142	4,661	3,563	-82
1912.....	16,390	7,950	4,294	3,656	8,440	4,821	3,705	-86
1913.....	16,900	7,926	4,482	3,444	8,974	5,161	3,903	-90
1914.....	17,131	8,067	4,676	3,391	9,064	5,066	4,063	-85
1915.....	17,844	8,489	4,737	3,752	9,355	5,233	4,190	-68
1916.....	20,818	10,471	5,756	4,715	10,347	5,943	4,450	-46
1917.....	25,527	13,922	7,000	6,922	11,605	6,851	4,805	-51
1918.....	28,084	15,560	6,891	8,669	12,524	6,900	5,650	-26
1919.....	30,552	16,302	7,169	9,133	14,250	7,849	6,418	-17
1920.....	31,717	15,335	7,525	7,810	16,382	8,310	8,080	-8
1921.....	27,156	11,270	7,239	4,031	15,886	7,946	7,947	-7
1922.....	28,225	12,093	7,422	4,671	16,132	8,133	7,645	354
1923.....	31,445	14,185	8,828	5,357	17,260	8,871	8,020	369
1924.....	32,644	14,745	9,096	5,649	17,899	9,223	8,286	390
1925.....	35,062	15,960	9,605	6,355	19,102	10,252	8,431	419
1926.....	34,927	14,857	9,379	5,478	20,070	10,852	8,751	467
1927.....	35,613	15,164	9,445	5,719	20,449	11,119	8,811	519
1928.....	36,330	15,078	9,614	5,464	21,252	11,596	9,122	534
1929.....	36,400	14,188	8,631	5,557	22,212	12,164	9,483	563

<sup>a</sup> Does not include undistributed income retained in business or profits from the sale of property. The figures are based primarily on King's estimates.

<sup>b</sup> Interest, dividends, and rent.

<sup>c</sup> Residential rent and imputed rent on owned homes, non-business interest payments, and imputed income from durable consumption goods in hands of consumers. See Table 5, p. 152.

<sup>d</sup> Net interest and dividends. See Table 5, p. 152.

has a very distinct upward trend, the amounts changing from negatives to positives during the period, the item itself is relatively not very large. Were it not, therefore, for the inaccuracies in the index numbers used as deflators the two trends would undoubtedly be closer together than they are. There is no basis for judging which of the two indices was the more accurate with respect to the purpose for which it was employed, and consequently our estimates must both be considered as being only rough approximations. The divergence between the two series representing real income becomes significant in the years following the World War. In 1929 the spread between the two trends was nearly 11 points in terms of 1900 as 100, that representing the purchasing power of all realized income standing at about

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### 9. INCOME FROM PRODUCTIVE ENTERPRISE AND SERVICE BY TYPE OF CLAIMANT, 1900-29<sup>a</sup>

(In millions of dollars)

Year	Total	Employ- ees	Individual Enter- prisers	Investors and Other Property Holders	Business Savings
1900.....	17,035	9,650	b	b	500
1909.....	27,726	15,090	7,263	4,077	1,296
1910.....	29,175	16,266	7,274	4,484	1,151
1911.....	29,066	16,498	7,217	4,661	690
1912.....	31,604	17,587	7,950	4,821	1,246
1913.....	33,309	18,822	7,926	5,161	1,400
1914.....	32,254	18,516	8,067	5,086	585
1915.....	35,200	19,361	8,489	5,233	2,117
1916.....	43,823	22,470	10,471	5,943	4,939
1917.....	51,307	25,802	13,922	6,851	4,732
1918.....	56,770	32,324	15,560	6,900	1,986
1919.....	63,880	35,399	16,302	7,849	4,330
1920.....	67,325	42,283	15,335	8,310	1,397
1921.....	52,745	36,214	11,270	7,946	-2,685
1922.....	59,602	37,700	12,093	8,133	1,676
1923.....	68,381	42,893	14,185	8,871	2,432
1924.....	69,924	44,493	14,745	9,223	1,463
1925.....	75,918	46,855	15,960	10,252	2,851
1926.....	77,177	49,245	14,857	10,852	2,223
1927.....	77,003	49,724	15,164	11,119	996
1928.....	79,679	50,617	15,078	11,596	2,388
1929.....	81,940	53,350	14,188	12,164	2,238

<sup>a</sup> For component parts of the totals given in the last four columns of this table see Table 7, p. 155, Table 8, p. 156, and Table 5, pp. 152-53.

<sup>b</sup> Not available separately; sum of the two items is 6,885 million dollars.

149, and that showing physical volume of product being about 138.

It should be noted that in Table 8, page 156, the income from individual enterprise includes returns to capital invested by entrepreneurs in their business as well as compensation for their labor and management. These capital returns are not included under investment income as given in the table.

Tables 9 and 10, pages 157-58, based on the tables just preceding, present an analysis of the division of income by major

## 10. RELATIVE SHARES OF MAJOR CLAIMANTS IN INCOME FROM CURRENT PRODUCTION OF GOODS AND SERVICES, 1900-29

(As percentages of total income produced)

Year	Employees <sup>a</sup>			Individual Enterprisers <sup>b</sup>			Investors and Property Holders <sup>c</sup>	Business Savings <sup>d</sup>	Total Value of Product (In millions of dollars) <sup>e</sup>
	Total	Wages	Salaries	Total	Agricultural	Non-Agricultural			
1900..	53.2	...	...	...	...	...	...	...	17,035
1909..	51.4	38.0	15.6	26.2	12.6	13.6	14.7	4.7	27,726
1910..	55.8	38.8	16.0	24.9	12.6	12.3	15.4	3.9	29,175
1911..	56.8	39.0	16.9	24.8	10.9	13.9	16.0	2.4	29,066
1912..	55.6	38.3	16.5	25.2	11.6	13.6	15.3	3.9	31,604
1913..	56.5	39.1	16.5	23.8	10.3	13.5	15.5	4.2	33,309
1914..	57.4	38.4	18.0	25.0	10.5	14.5	15.8	1.8	32,254
1915..	55.0	37.3	16.8	24.1	10.7	13.4	14.9	6.0	35,200
1916..	51.3	35.7	14.5	23.9	10.8	13.1	13.6	11.2	43,823
1917..	50.3	34.6	14.9	27.1	13.5	13.6	13.4	9.2	51,307
1918..	56.9	36.0	19.8	27.4	15.3	12.1	12.2	3.5	56,770
1919..	55.4	36.1	18.1	25.5	14.3	11.2	12.3	6.8	63,880
1920..	62.8	43.9	17.4	22.8	11.6	11.2	12.3	2.1	67,325
1921..	68.7	44.3	22.5	21.3	7.6	13.7	15.1	-5.1	52,745
1922..	63.3	41.2	20.2	20.3	7.8	12.5	13.6	2.8	59,602
1923..	62.7	42.0	19.2	20.7	7.8	12.9	13.0	3.6	68,381
1924..	63.6	41.5	20.3	21.1	8.1	13.0	13.2	2.1	69,924
1925..	61.7	40.5	19.8	21.0	8.4	12.6	13.5	3.8	75,918
1926..	65.8	41.8	20.5	19.2	7.1	12.1	14.1	2.9	77,177
1927..	64.6	41.3	21.7	19.7	7.4	12.3	14.4	1.3	77,003
1928..	63.5	40.0	22.1	18.9	6.8	12.1	14.6	3.0	79,679
1929..	65.1	42.1	21.7	17.3	6.8	10.5	14.9	2.7	81,940

<sup>a</sup> Includes pensions, workmen's compensation, etc. Based on Table 7, p. 155.<sup>b</sup> Includes return on owned capital as well as "labor income" of entrepreneurs. Based on Table 8, p. 156.<sup>c</sup> Interest, dividends, rents, and royalties. This is the share realized. Obviously the portion retained in business as corporate surplus also accrues to the investor. Based on Table 8, p. 156. Since this table covers only productive enterprises and services, rent and interest paid directly by consumers are not here included.<sup>d</sup> Based on Table 5, pp. 152-53. See especially note *g* of that table.<sup>e</sup> See the second column of Table 5, p. 152.

groups of claimants. Table 11 goes a step further and recombinates some of the data so as to show the approximate share distributed to individuals as a result of their occupational pursuits as distinct from investment or property income. Table 11 also differs from Tables 9 and 10 in that it covers the entire computed income, including returns on investments in property not used in production.

According to Table 10, the employees' relative share in the "production income" has increased materially since the turn of the century, the share of individual enterprisers has decreased—particularly in agriculture—and the relative share of investors has remained practically stationary. From Table 11, moreover

**11. INCOME FROM OCCUPATIONS COMPARED WITH REALIZED INCOME FROM PROPERTY, 1909-29<sup>a</sup>**

Year	Total Realized Income	In Millions of Dollars			As a Percentage of Total Realized Income		
		Occupational Income <sup>b</sup>	Returns on Investment and Property in Production	Returns on Other Property	Occupational Income <sup>b</sup>	Returns on Investment and Property in Production	Returns on Other Property
1909.....	29,604	22,353	4,077	3,174	75.5	13.8	10.7
1910.....	31,429	23,540	4,484	3,405	74.9	14.3	10.8
1911.....	31,857	23,715	4,661	3,481	74.5	14.6	10.9
1912.....	33,977	25,537	4,821	3,619	75.1	14.2	10.7
1913.....	35,722	26,748	5,161	3,813	74.9	14.4	10.7
1914.....	35,647	26,583	5,086	3,978	74.6	14.3	11.1
1915.....	37,205	27,850	5,233	4,122	74.8	14.1	11.1
1916.....	43,288	32,941	5,943	4,404	76.1	13.7	10.2
1917.....	51,329	39,724	6,851	4,754	77.4	13.3	9.3
1918.....	60,408	47,884	6,900	5,624	79.3	11.4	9.3
1919.....	65,951	51,701	7,849	6,401	78.4	11.9	9.7
1920.....	74,000	57,618	8,310	8,072	77.9	11.2	10.9
1921.....	63,370	47,484	7,946	7,940	75.0	12.5	12.5
1922.....	65,925	49,793	8,133	7,999	75.6	12.3	12.1
1923.....	74,338	57,078	8,871	8,389	76.8	11.9	11.3
1924.....	77,137	59,238	9,223	8,676	76.8	12.0	11.2
1925.....	81,917	62,815	10,252	8,850	76.7	12.5	10.8
1926.....	84,172	64,102	10,852	9,218	76.1	12.9	11.0
1927.....	85,337	64,888	11,119	9,330	76.1	13.0	10.9
1928.....	86,947	65,695	11,596	9,656	75.6	13.3	11.1
1929.....	89,750	67,538	12,164	10,048	75.2	13.6	11.2

<sup>a</sup> Includes income from durable consumers' goods, but does not include gains from sale of property.

<sup>b</sup> Includes wages, salaries, and returns to individual enterprisers; also includes pensions paid to employees. It may be questioned whether the latter should be classed as occupational income since it is not a payment for a current service.

it would appear that the change in the division as between employees and individual enterprisers was due principally to the shift of personnel from the small enterpriser to the employee class. The percentage of the total received in the form of occupational income has apparently not undergone any noticeable change, although it has fluctuated from year to year. On the basis of the larger total, including returns on property not used in production, occupational income has constituted about 76 per cent of the national income. In terms of the more restricted total representing "production income" only, the occupational share has tended to equal about 84-85 per cent. It should be observed in this connection that "occupational" income is somewhat higher than "labor" income. The former includes the income accruing to individual enterprisers from their own capital invested in the business.

## B. INCOME DURING THE YEAR 1929

Except where otherwise noted, in our analysis pertaining to the single year 1929 we have relied upon an estimate of national income prepared by the Department of Commerce and published in its report, *National Income, 1929-32* (73 Cong., S. doc. 124). Although this estimate differs in detail from that incorporated in the King series, the final results of the two computations are in fairly close agreement. The internal differences are to some extent explained by the fact that different categories were used in the respective studies.

In order to meet the requirements of our analysis the Department of Commerce figure has been modified to yield an estimate of the amount of national income derived from current production of goods and services<sup>15</sup> and an approximation of the total which would be obtained from a summation of the personal incomes of all individuals in the United States. The second estimate was desired to serve as a check upon the distribution of income by income classes which is presented in Section V of this appendix.

To make the first adjustment we subtracted from the total of 83,032 million dollars given in the department's report a rough estimate of that portion which did not arise from production, and added an allowance for miscellaneous income from production not included in the total. The computation, in millions of dollars, is as follows:

National income as estimated by Department of Commerce <sup>16</sup> .....	83,032
Mortgage interest on owned non-farm homes <sup>17</sup> .....	1,000

<sup>15</sup> The Department of Commerce treatment of income derived from the use of durable consumption goods is not quite suitable for our purpose. In its study residential rent is included as part of the national income. The rental value of owners' homes, however, is not included, except in so far as it is reflected in interest on residential mortgages. Similarly the value of the services of other durable goods in the hands of consumers is not counted as income, except that portion which is reflected in the interest paid on installment buying. On the other hand, interest on consumers' loans other than those mentioned above is carried as national income, although it represents no added service in a national sense. In part our adjustments were made to avoid these inconsistencies.

<sup>16</sup> 73 Cong., *National Income, 1929-32*, S. doc. 124, p. 10.

<sup>17</sup> The median value of the 10.7 million owned non-farm homes is given by the 1930 Census as \$4,778 (*Abstract of the Fifteenth Census of*

Rent on rented homes <sup>18</sup> .....	2,000	
Rent or interest on farm homes <sup>19</sup> .....	100	
Interest on installment buying <sup>20</sup> .....	150	
Interest on small loans <sup>21</sup> .....	100	3,350
National income from production, exclusive of miscellaneous items .....		79,682
Miscellaneous production income not included in Department of Commerce estimate <sup>22</sup> .....		1,200
Estimated national income from production .....		80,882

On the basis of the foregoing computation we place the total national income from current production of goods and services

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*the United States, 1930, p. 422*). Consequently the aggregate value of these homes may be estimated as roughly 50 billion dollars. On the assumption that about 40 per cent of the value was mortgaged and that the average rate of interest, exclusive of such items as service charges, was 5 per cent, the total mortgage interest amounted to approximately one billion dollars. (It is doubtful if any greater accuracy would have been obtained in this case and in that following if arithmetic means instead of medians had been used.)

<sup>18</sup> The 1930 Census reports that the median monthly rental of the 12.5 million rented homes was \$27.15 (same citation as in note 17). By assuming the value of residential property to be ten times the annual rental, it was estimated that the total value of the rented homes was in excess of 40 billion dollars. At an estimated net rate of 5 per cent the total rent for this property was roughly a billion dollars.

<sup>19</sup> The value of farm dwellings is reported by the 1930 Census of Agriculture as 7,084 million dollars (the same, p. 529). The allowance of 100 million as mortgage interest is conservative, especially since the total given by the census is for an incomplete farm count. The total value may perhaps be raised to 7,600 million dollars.

<sup>20</sup> E. R. A. Seligman estimated for 1925 a total of 2,067 million dollars as the "average of instalment paper outstanding" (*The Economics of Instalment Selling*, Vol. I, p. 118). By 1929 the total must have exceeded the sum of 2,500 million dollars. At an average *net* interest rate of 6 per cent, this sum would represent total interest payments of 150 million dollars.

<sup>21</sup> Leon Henderson of the Russell Sage Foundation estimated that prior to the depression the annual volume of business of small-loan companies was about 2.6 billion dollars and that the interest cost was 612 million (*Business Week*, Jan. 22, 1930, p. 29). Since most of this interest represented costs of rendering service, we have assumed that only one-sixth, or about 100 million dollars, constituted net interest.

<sup>22</sup> Income from odd jobs of otherwise employed persons, 700 million dollars; income from urban cows, poultry, and gardens, 250 million; and net income from roomers and boarders in private families, 250 million.

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12. NATIONAL INCOME FROM CURRENT PRODUCTION  
BY TYPE OF RECEIPTS, 1929<sup>a</sup>  
(In millions of dollars)

Item	National In- come, Including Non-Business Interest and Rent <sup>b</sup>	Adjust- ment Items	Net Income from Current Production
Salaries.....	18,484 <sup>c</sup>	...	18,484
Wages.....	33,449 <sup>c</sup>	+ 700 <sup>d</sup>	34,149
Employees' pensions and com- pensation for injury.....	860	...	860
Dividends.....	5,964	...	5,964
Interest, domestic.....	5,677	-1,350 <sup>e</sup>	4,327
Net interest and dividends on foreign investments.....	565	...	565
Rents and royalties.....	4,116	-2,000 <sup>f</sup>	2,116
Entrepreneurial income.....	13,010 <sup>g</sup>	+ 500 <sup>h</sup>	13,510
Corporate surplus.....	907	...	907
<b>Total.....</b>	<b>83,032</b>	<b>-2,150</b>	<b>80,882</b>

<sup>a</sup> Includes net interest and dividends on foreign investments.

<sup>b</sup> Based on Department of Commerce report, 73 Cong., *National Income, 1929-32*, S. doc. 124.

<sup>c</sup> Estimated. The Department of Commerce report (p. 14) segregates wages from salaries only for a selected group of industries. For these industries wages constituted 75 per cent of the total. For the other industries King's estimates for 1927 were employed as a basis of making the division between the two types of compensation. The proportions in this case are: wages, 56 per cent; salaries, 44 per cent. For the industries for which the Department of Commerce gives separate figures there is practically no disagreement between King's proportions for 1927 and those of the department for 1929.

<sup>d</sup> Estimated income from odd jobs of otherwise employed persons.

<sup>e</sup> Mortgage interest on owned homes and interest on installment purchases and small loans.

<sup>f</sup> Estimated net rent on rented homes.

<sup>g</sup> "Withdrawals" reported in Table 2, p. 14, of Department of Commerce report, 12,020 million dollars, plus business savings of individuals, 990 million.

<sup>h</sup> Income from urban cows, gardens, and poultry, 250 million dollars, and net income from roomers and boarders, 250 million.



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## 13. AGGREGATE INCOME OF INDIVIDUALS, 1929<sup>a</sup> (In millions of dollars)

Item	Total	Regular Occupation	Invest- ments and Property	Miscel- laneous
<b>INCOME FROM PRODUCTION OF GOODS AND SERVICES</b>				
Wages, salaries, pensions, etc.....	52,793	52,793		
Entrepreneurial returns .....	12,451	12,451 <sup>b</sup>		
Interest and dividends .....	10,478		10,478	
Rents and royalties .....	2,488		2,488	
Odd jobs of otherwise employed persons.....	700			700
Non-farm cows, gardens, and chickens; and roomers and boarders in private families .....	500			500
<b>OTHER SERVICE INCOME</b>				
Net return on foreign investments	565		565	
Non-business interest and rent....	3,350		3,350	
Imputed income from owned homes.	1,860		1,860 <sup>c</sup>	
Imputed income from other durable consumption goods in hands of consumers.....	3,400		3,400 <sup>d</sup>	
<b>SPECULATION</b>				
Profits from sale of real estate, stocks, bonds, etc.....	6,200			6,200
<b>TOTAL</b> .....	<b>94,785</b>	<b>65,244</b>	<b>22,141</b>	<b>7,400</b>

<sup>a</sup> Except as noted in the following footnotes, all items are taken from Table 12, p. 162.

<sup>b</sup> The discrepancy between this total and that given in Table 12 is due to the transfer of 559 million dollars of inter-farmer payments to interest and rent below. See notes *e*, *f*, and *g*, Table 14, p. 165.

<sup>c</sup> Three per cent of the approximate value of owned urban homes (see note 17, pp. 160-61) and difference between 5 per cent of estimated value of farm homes and the allowance of 100 million dollars for mortgage interest (see note 19, p. 161). The figure given includes an adjustment item of 70 million dollars, which raises somewhat the percentages indicated. The figure is still conservative.

<sup>d</sup> See Table 5, p. 152.

at 80,882 million dollars.<sup>23</sup> The breakdown of this estimate by type of receipts is shown in Table 12, page 162.

<sup>23</sup> This total includes 565 million dollars of income from foreign investments. Whenever in the course of our discussion we are interested in the production of goods and services of our domestic plant, this item is excluded.

All of this income, however, was not realized by individuals during 1929. From the figures of the Department of Commerce it appears that about 907 million dollars were retained by corporations as surpluses. Consequently the amount of income realized by the people from current production (including returns from foreign investments) was 79,975 million dollars, or in round numbers 80 billion dollars.

It should be observed that in this estimate we depart somewhat from the practice followed by the Department of Commerce and consider the business savings of individual entrepreneurs as realized income. It would seem that for most purposes the savings which individual entrepreneurs put back into their businesses are not any different from the savings which they invest in property or securities in general. In other words, if an entrepreneur has a total income of \$5,000, of which \$1,000 is left in the business, \$1,000 is saved by the purchase of a government bond, and \$3,000 is spent for living, there is no reason to record his income as \$4,000 rather than \$5,000. Presumably he had control over his entire net income. This case is entirely different from that of investors in a corporate enterprise which earned a million dollars, disbursed \$750,000 in interest and dividends, and retained \$250,000 as corporate surplus. Although theoretically the entire million dollars accrued to the investors they had direct control as individuals over only \$750,000.

As stated on page 160, our second modification of the Department of Commerce estimate was for the purpose of obtaining an estimate of the sum of individual incomes during 1929. The items composing this estimate are set forth in Table 13, page 163. It will be seen that, in addition to the realized income from current production of goods and services, this table contains actual and imputed income from owned homes and other durable consumption goods, as well as profits from the sale of property. The inclusion of these additional items brings the aggregate income of individuals to 94,785 million dollars.

The breakdown of this table shows that approximately 65,244 million dollars were derived from occupational pursuits, about 22,141 million from investments and property, and about 7,400 million from miscellaneous sources.

The occupational income covers wages, salaries, pensions,

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## 14. NATIONAL INCOME FROM CURRENT PRODUCTION<sup>a</sup> BY MAJOR GROUPS OF CLAIMANTS, 1929

Claimant and Type of Income	In Millions of Dollars <sup>b</sup>	As a Percentage of Total
<b>TOTAL</b> .....	<b>80,882</b>	<b>100.0</b>
<b>EMPLOYEES</b> .....	<b>53,493</b>	<b>66.1</b>
Wages.....	34,149 <sup>a</sup>	42.2
Pensions, compensation, etc.....	860	1.1
Salaries of corporation officials.....	3,337 <sup>d</sup>	4.1
Salaries of other employees.....	15,147	18.7
<b>INDIVIDUAL ENTERPRISES</b> .....	<b>12,951</b>	<b>16.0</b>
Professional.....	2,035	2.5
Agricultural.....	5,137 <sup>a</sup>	6.4
Non-agricultural.....	5,279	6.5
Miscellaneous.....	500	0.6
<b>INVESTORS</b> .....	<b>14,438</b>	<b>17.9</b>
Interest, domestic.....	4,514 <sup>f</sup>	5.6
Dividends, domestic.....	5,964	7.4
Interest and dividends, foreign.....	565	0.7
Rents and royalties.....	2,488 <sup>g</sup>	3.1
Corporate savings.....	907	1.1

<sup>a</sup> Includes net interest and dividends on foreign investments.

<sup>b</sup> Unless otherwise noted figures are from Department of Commerce report previously cited. See pp. 160-61 for adjustment items.

<sup>c</sup> Includes estimate of 700 million dollars as income from odd jobs of otherwise employed persons.

<sup>d</sup> *Statistics of Income for 1929*, U. S. Bureau of Internal Revenue, p. 267.

<sup>e</sup> The income of farm operators as a group was 5,696 million dollars. However, about 559 million consisted of inter-farmer payments of interest and rent which have been transferred to items below.

<sup>f</sup> Includes 187 million dollars of inter-farmer interest payments.

<sup>g</sup> Includes 372 million dollars of inter-farmer rent payments.

and entrepreneurial returns. There is, of course, some question whether pensions should be included under occupational income. Although they are the result of occupational pursuits they can hardly be said to be returns for services rendered currently. It perhaps would be just as well to consider them as a type of investment or property income. In some respects a pension is a property right similar to a royalty. It may also be regarded as a result of the investment of a portion of the compensation withheld during the active period of the worker. The amount, however, is not large enough to interfere with the general implications of this broad classification. Entrepreneurial returns, as

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previously stated, are a mixed category, since they are composed of compensation for services and returns on property. If in the total entrepreneurial income (12,451 million dollars) labor income were separated from property income on the basis of the relationship between payments to employees and returns to property in corporate enterprises, the labor income would be approximately 10 billion dollars and the capital income 2.5

## 15. PRODUCTION SOURCES OF NATIONAL INCOME, 1929

Source	Income	
	In Millions of Dollars <sup>a</sup>	As a Percentage of Total
Agriculture.....	8,254	10.4
Mines and quarries.....	2,136	2.7
Manufacturing.....	18,682 <sup>b</sup>	23.4
Construction.....	3,305	4.2
Transportation and communication.....	7,367	9.2
Trade.....	13,454	16.9
Banking.....	1,394	1.7
Insurance.....	1,420 <sup>c</sup>	1.8
Government.....	6,717	8.4
Professional services.....	3,268 <sup>c</sup>	4.1
Personal and domestic services.....	3,775 <sup>c</sup>	4.7
Other services.....	1,434 <sup>c</sup>	1.8
Unclassified.....	8,496	10.7
Total.....	79,702	100.0

<sup>a</sup> Unless otherwise stated, the figures are from Table 5, p. 152.

<sup>b</sup> The amount of 415 million dollars has been subtracted from the original estimate, which included power laundries and cleaning and dyeing establishments. In this table the figure is included in "Personal and Domestic Services."

<sup>c</sup> Taken from or based upon 73 Cong., *National Income, 1929-32*, S. doc. 124, pp. 122-23 and 147-53.

billion. We might then state that the total labor income was something less than 63 billion dollars.

The investment and property income shown in Table 13 includes income from services from durable goods and from interest on non-business loans. The investment income derived from domestic production alone amounted to nearly 13 billion dollars.

The main item under "Miscellaneous" is profits from the sale of real estate, stocks, bonds, and the like, which are given as

6,200 million dollars. This figure is only a rough estimate based on the income tax data published by the United States Bureau of Internal Revenue in *Statistics of Income*. It was obtained in the following manner: The amount of net profits from the sale of property on tax returns for incomes of \$5,000 and over was raised by 65 per cent to allow for under-reporting.<sup>24</sup> To the amount thus obtained was added an estimate of profits from the sale of property received by individuals having incomes of less than \$5,000.<sup>25</sup> The total was corrected by subtracting capital losses, which were taken as reported on income tax returns on the assumption that the under-reporting of losses was negligible.

Tables 14 and 15 contain the supporting data for the charts on pages 32 and 20. Table 15 is based primarily on Table 5, page 152. The additional categories, "Insurance," "Professional Services," "Personal and Domestic Services," and "Other Services" represent a breakdown of the unclassified group in that table. This breakdown is based on the Department of Commerce figures in *National Income, 1929-32*. Although we substantially accepted the Department of Commerce totals in our 1929 computations, it was not feasible to use the department's breakdown for the purpose of showing the industrial derivation of income. In that analysis income from rent, irrespective of its industrial origin, is treated under "Real Estate" rather than as payments from individual industries, thus understating the contributions of the latter. Agriculture and trade are particularly affected. In agriculture, for instance, rent paid to non-operators alone amounted to 1,110 million dollars in 1929. The figures in this table are therefore at variance with the estimates of the Department of Commerce.

<sup>24</sup> In Macaulay's distribution of incomes for 1918 (*Incomes in the United States*, Vol. I, National Bureau of Economic Research) the aggregate of incomes \$5,000 and over is about 1.65 of the aggregate reported on the income tax returns. In the study of dentists and physicians (Maurice Leven, *The Incomes of Physicians*, 1929) it was also found that under-reporting within these income brackets amounted to 65 per cent.

<sup>25</sup> Estimated by applying ratios of profits from the sale of property to total income in income classes 0-\$5,000 (in intervals of \$500). The ratios were obtained by extrapolation from curve of ratios for incomes of \$5,000 and over. The latter ratios were based on income tax returns and our estimate of the distribution of personal incomes shown later.

## III. GEOGRAPHIC DISTRIBUTION OF INCOME

The distributions of income by states and larger geographic divisions shown in the five tables in this section are approximations computed on the basis of broad indices and are not the result of a detailed study by industries. The indices employed are based primarily upon the data of the *Fifteenth Census of the United States*, the Bureau of Internal Revenue, and the Department of Agriculture.

The aggregate income distributed among the various states is 91,385 million dollars.<sup>26</sup> This total refers to *individual income* in contradistinction to what we have termed as *national income*. In addition to income disbursed in the process of the production of goods and services, that is, wages, salaries, interest, dividends, rents, and entrepreneurial profits, the figure includes imputed income on owned homes and profits from the sale of real estate, stocks, bonds, etc. It does not include corporate surpluses because they do not find their way into the hands of individuals and there is consequently no accurate way of allocating them to the population of the different states. Nor does the figure include imputed income from durable consumption goods, other than homes, in the hands of consumers. Although this source of income is as important as any of the others, it is not included in the distribution because it cannot be evaluated geographically with any degree of accuracy. At best, its distribution by states could be accomplished only by assuming that it is proportional to the income from all other sources, which would merely add

<sup>26</sup> This estimate was obtained by the following computation (in millions of dollars):

Department of Commerce estimate of total national income (see p. 160) .....	83,032
Corporate surplus included above .....	907
Realized income on basis of Department of Commerce estimate .....	82,125
Miscellaneous income (see Table 13, p. 163) .....	1,200
Imputed income from owned homes (see Table 13, p. 163) .....	1,860
<b>Total</b> .....	<b>85,185</b>
Estimated profits from the sale of property (see Table 13, p. 163, and text discussion of it, pp. 164-67) ....	6,200
<b>Aggregate including profits from the sale of property ...</b>	<b>91,385</b>

a constant percentage. The estimated total of this item for the United States is 3.4 billion dollars. The omission of this amount accounts for the difference between the aggregate given here and that shown in Table 13, page 163.<sup>27</sup>

The aggregate income of the entire nation has been distributed by states in two major groups: the non-farm population, numbering at the middle of 1929 about 91,588,000 people, and the farm population, then aggregating about 30,244,000 people. The respective shares of the two groups in the 1929 aggregate of individual incomes as set up on the preceding page were approximately 83,000 million and 8,300 million dollars. Exclusive of profits from the sale of property, the shares were about 77,000 million and 8,300 million dollars respectively.

The geographic index for the distribution of non-farm income is made possible by the exceptionally high coverage of the *Fifteenth Census of the United States*. For no previous census year is there such an abundance of data pertaining to earnings of wage earners and salaried workers as for 1929. The Censuses of Manufactures, Retail and Wholesale Distribution, Construction, and Mines and Quarries cover 17,350,000 employees with an aggregate payroll exceeding 26 billion dollars. The total number of gainful workers in 1929, outside of agriculture, approximated 38 millions, and the occupational income of these individuals was about 60 billion dollars. The census data thus account not only for the principal industries but for nearly one-half of the gainfully employed, and should in themselves serve as a fair picture of conditions in different sections of the country. However, since earnings of employees reflect only moderately the higher income groups, they have been strengthened in our index by the information derived from federal income tax returns.

The index has been constructed by multiplying the average earnings for each state in the industries covered by the census by the total number of gainfully employed persons exclusive of those in agriculture, as reported in the occupation statistics. To these totals have been added the state totals of net income on

<sup>27</sup> Attention is called to the fact that the aggregate distributed geographically also differs from the aggregate obtained by summing the estimates of income by income classes. The discrepancy is explained in Section V of this appendix.

the individual tax returns for incomes of \$5,000 and over, raised by 50 per cent to make a rough allowance for under-reporting.

The relative weight of the two series in the index may be indicated by their respective aggregates for the United States. The aggregate derived by multiplying the average earnings by the number of gainful workers is 57.8 billion dollars (which is remarkably close to the total estimated occupational income exclusive of farmers of 60 billion dollars), while the total of the series derived from the income tax returns is 24.5 billion dollars. The two series combined add to 82.3 billion dollars. It will be observed that the total income distributed by means of this index is slightly more than 83 billion dollars.

The geographic distribution of the occupational income of the non-farm population has been made in accordance with the products obtained by multiplying the average earnings of employees in the industries covered by the census by the total number of gainfully occupied persons. As has already been stated, the base of the index of earnings is so broad that it can be taken to represent all occupational income. It has been found in connection with other studies that there is a strong tendency towards geographic conformity in the basic incomes of individuals. The incomes of physicians and merchants, for instance, are likely to be high where other incomes are high and low where other incomes are deficient.

The estimated total income from the sale of real estate, stocks, bonds, etc., has been made in accordance with net income from these sources reported on the federal income tax returns from the various states. It will be observed that in distributing this income the assumption was made that most of it went to the non-farm population, an assumption which on the whole appears to be correct.

The geographic index used in distributing the income of the farm population is somewhat less satisfactory than that employed in distributing the non-farm income. The gross agricultural income from farm production, computed by states by the United States Department of Agriculture,<sup>28</sup> constitutes the basic series in this index. The conversion of the gross income into

<sup>28</sup> *Farm Value, Gross Income, and Cash Income from Farm Production, 1929-1932*, U. S. Department of Agriculture (mimeographed), April 1933, p. 10.



net income (including farm wages) has been made on the basis of the ratios of net to gross obtained in the different states in 1920.<sup>29</sup> This step relies upon the assumption that the character of agriculture in the different parts of the country did not change enough between 1920 and 1929 to affect materially the position of each state with respect to the ratio of net to gross farm income. In other words, it is implied that such changes in the ratios as have taken place in the period have been proportional. Of course, this is not strictly true, and to the extent that this is incorrect, the estimates given here are in error.

The use of the index implies another assumption, namely, that on a geographic basis the total income of farmers and paid agricultural laborers is proportional to the farm income.

As will be shown on page 234 it is estimated that about 465,000 income recipients forming part of the farm population derived their income from non-agricultural pursuits. These were the sons and daughters of farmers, living at home, who worked off the farm, as school teachers, clerks, factory hands, and so on. It is obvious that the income of these individuals has no relationship to farm income. The number of such workers, except perhaps that of rural school teachers, depends not so much upon the agricultural position of a state as upon its urbanization and industrial make-up. With existing data, no accurate estimate can be made of the geographic distribution of these individuals. Their income has been allocated among the different states in accordance with estimates of the number of all supplementary earners in farm families. The latter series was obtained by subtracting the unpaid family workers from estimates of the total number of supplementary workers in farm families. The basic figures by states are from the Census of Occupations and the Census of Agriculture.

<sup>29</sup> Based on data of the National Bureau of Economic Research. See Maurice Leven, *Income in the Various States*, pp. 198-215.

16. G 1929 PERCENTAGE DISTRIBUTION OF THE AGGREGATE PERSONAL INCOME OF THE FARM AND NON-FARM POPULATION, 1929<sup>a</sup>

Geographic Divisions and States	Income of Entire Population		Income of Non-Farm Population		Income of Farm Population <sup>b</sup>	
	In Millions of Dollars	As Percentage of Total	In Millions of Dollars	As Percentage of Total	In Millions of Dollars	As Percentage of Total
<b>CONTINENTAL UNITED STATES</b> .....	<b>91,385</b>	<b>100.00</b>	<b>83,125</b>	<b>100.00</b>	<b>8,260</b>	<b>100.00</b>
<b>NEW ENGLAND</b> .....	<b>7,377</b>	<b>8.07</b>	<b>7,108</b>	<b>8.55</b>	<b>269</b>	<b>3.26</b>
Maine.....	514	0.56	437	0.53	77	0.93
New Hampshire.....	303	0.33	282	0.34	21	0.25
Vermont.....	228	0.25	188	0.23	40	0.49
Massachusetts.....	4,124	4.51	4,053	4.87	71	0.86
Rhode Island.....	602	0.66	593	0.71	9	0.11
Connecticut.....	1,606	1.76	1,555	1.87	51	0.62
<b>MIDDLE ATLANTIC</b> .....	<b>28,817</b>	<b>31.54</b>	<b>28,120</b>	<b>33.83</b>	<b>697</b>	<b>8.44</b>
New York.....	17,003	18.61	16,652	20.03	351	4.25
New Jersey.....	3,996	4.37	3,910	4.71	86	1.04
Pennsylvania.....	7,818	8.56	7,558	9.09	260	3.15
<b>EAST NORTH CENTRAL</b> .....	<b>20,831</b>	<b>22.79</b>	<b>19,531</b>	<b>23.50</b>	<b>1,300</b>	<b>15.74</b>
Ohio.....	5,246	5.74	4,987	6.00	259	3.13
Indiana.....	1,981	2.17	1,801	2.17	180	2.18
Illinois.....	7,468	8.17	7,169	8.62	299	3.62
Michigan.....	4,142	4.53	3,921	4.72	221	2.68
Wisconsin.....	1,994	2.18	1,653	1.99	341	4.13
<b>WEST NORTH CENTRAL</b> .....	<b>7,464</b>	<b>8.17</b>	<b>6,174</b>	<b>7.43</b>	<b>1,290</b>	<b>15.62</b>
Minnesota.....	1,559	1.71	1,339	1.61	220	2.66
Iowa.....	1,199	1.31	993	1.19	206	2.49
Missouri.....	2,344	2.57	2,133	2.57	211	2.56
North Dakota.....	287	0.31	167	0.20	120	1.45
South Dakota.....	290	0.32	186	0.22	104	1.26
Nebraska.....	717	0.78	553	0.67	164	1.99
Kansas.....	1,068	1.17	803	0.97	265	3.21
<b>SOUTH ATLANTIC</b> .....	<b>7,314</b>	<b>8.00</b>	<b>6,263</b>	<b>7.53</b>	<b>1,051</b>	<b>12.72</b>
Delaware.....	313	0.34	296	0.36	17	0.21
Maryland.....	1,295	1.42	1,218	1.46	77	0.93
District of Columbia.....	598	0.65	598	0.72	...	...
Virginia.....	1,044	1.14	869	1.04	175	2.12
West Virginia.....	831	0.91	760	0.91	71	0.86
North Carolina.....	994	1.09	729	0.88	265	3.21
South Carolina.....	454	0.50	335	0.40	119	1.44
Georgia.....	999	1.09	788	0.95	211	2.55
Florida.....	786	0.86	670	0.81	116	1.40
<b>EAST SOUTH CENTRAL</b> .....	<b>3,383</b>	<b>3.70</b>	<b>2,618</b>	<b>3.15</b>	<b>765</b>	<b>9.26</b>
Kentucky.....	1,037	1.13	861	1.04	176	2.13
Tennessee.....	900	0.99	733	0.88	167	2.02
Alabama.....	872	0.95	683	0.82	189	2.29
Mississippi.....	574	0.63	341	0.41	233	2.82
<b>WEST SOUTH CENTRAL</b> .....	<b>5,738</b>	<b>6.28</b>	<b>4,433</b>	<b>5.33</b>	<b>1,305</b>	<b>15.80</b>
Arkansas.....	575	0.63	368	0.44	207	2.51
Louisiana.....	914	1.00	761	0.92	153	1.85
Oklahoma.....	1,195	1.31	947	1.14	248	3.00
Texas.....	3,054	3.34	2,357	2.83	697	8.44
<b>MOUNTAIN</b> .....	<b>2,444</b>	<b>2.68</b>	<b>1,893</b>	<b>2.28</b>	<b>551</b>	<b>6.67</b>
Montana.....	376	0.41	286	0.35	90	1.09
Idaho.....	271	0.30	167	0.20	104	1.26
Wyoming.....	174	0.19	127	0.15	47	0.57
Colorado.....	711	0.78	580	0.70	131	1.58
New Mexico.....	200	0.22	144	0.17	56	0.68
Arizona.....	319	0.35	263	0.32	56	0.68
Utah.....	303	0.33	249	0.30	54	0.65
Nevada.....	90	0.10	77	0.09	13	0.16
<b>PACIFIC</b> .....	<b>8,017</b>	<b>8.77</b>	<b>6,985</b>	<b>8.40</b>	<b>1,032</b>	<b>12.49</b>
Washington.....	1,305	1.43	1,111	1.34	194	2.35
Oregon.....	715	0.78	591	0.71	124	1.50
California.....	5,997	6.56	5,283	6.35	714	8.64

<sup>a</sup> Includes income from profits from the sale of property and imputed rent on owned homes. Excludes imputed income from durable consumption goods other than homes. For figures exclusive of profits from sale of property, see Table 18, p. 174.

<sup>b</sup> Includes income from non-agricultural sources.

**17. PER CAPITA PERSONAL INCOME, BY GEOGRAPHIC DIVISIONS  
AND STATES, 1929\***

Geographic Divisions and States	Entire Population		Non-Farm Popu- lation		Farm Population	
	Popu- lation July 1 (In thou- sands)	Per Capita Income	Popu- lation July 1 (In thou- sands)	Per Capita Income	Popu- lation July 1 (In thou- sands)	Per Capita Income
<b>CONTINENTAL UNITED STATES</b>	<b>121,832</b>	<b>\$750</b>	<b>91,588</b>	<b>908</b>	<b>30,244</b>	<b>\$273</b>
<b>NEW ENGLAND</b> .....	<b>8,130</b>	<b>907</b>	<b>7,628</b>	<b>932</b>	<b>502</b>	<b>535</b>
Maine.....	797	645	634	689	163	474
New Hampshire.....	465	652	409	689	56	379
Vermont.....	360	633	247	761	113	351
Massachusetts.....	4,231	975	4,152	976	79	898
Rhode Island.....	683	881	673	881	10	859
Connecticut.....	1,594	1,008	1,513	1,028	81	630
<b>MIDDLE ATLANTIC</b> .....	<b>26,037</b>	<b>1,107</b>	<b>24,350</b>	<b>1,155</b>	<b>1,687</b>	<b>413</b>
New York.....	12,457	1,365	11,745	1,417	712	493
New Jersey.....	3,988	1,002	3,866	1,011	122	704
Pennsylvania.....	9,592	815	8,739	865	853	305
<b>EAST NORTH CENTRAL</b> .....	<b>25,082</b>	<b>831</b>	<b>20,597</b>	<b>948</b>	<b>4,485</b>	<b>290</b>
Ohio.....	6,598	795	5,584	893	1,014	255
Indiana.....	3,224	614	2,408	748	816	221
Illinois.....	7,568	987	6,569	1,091	999	299
Michigan.....	4,768	869	3,988	983	780	283
Wisconsin.....	2,924	682	2,048	807	876	389
<b>WEST NORTH CENTRAL</b> .....	<b>13,274</b>	<b>562</b>	<b>8,231</b>	<b>750</b>	<b>5,043</b>	<b>256</b>
Minnesota.....	2,557	610	1,669	802	888	248
Iowa.....	2,473	485	1,507	659	966	214
Missouri.....	3,621	675	2,505	851	1,116	180
North Dakota.....	680	422	284	588	396	302
South Dakota.....	690	420	303	614	387	268
Nebraska.....	1,375	521	792	698	583	281
Kansas.....	1,878	569	1,171	686	707	376
<b>SOUTH ATLANTIC</b> .....	<b>15,700</b>	<b>466</b>	<b>9,784</b>	<b>640</b>	<b>5,916</b>	<b>178</b>
Delaware.....	238	1,315	191	1,550	47	368
Maryland.....	1,621	799	1,382	881	239	323
District of Columbia.....	485	1,233	485	1,233	...	...
Virginia.....	2,420	431	1,463	594	957	182
West Virginia.....	1,714	485	1,264	602	450	157
North Carolina.....	3,134	317	1,544	472	1,590	167
South Carolina.....	1,739	261	814	412	925	129
Georgia.....	2,914	343	1,481	532	1,433	147
Florida.....	1,435	548	1,160	577	275	419
<b>EAST SOUTH CENTRAL</b> .....	<b>9,838</b>	<b>344</b>	<b>4,747</b>	<b>552</b>	<b>5,091</b>	<b>150</b>
Kentucky.....	2,607	398	1,423	605	1,184	148
Tennessee.....	2,602	346	1,385	529	1,217	137
Alabama.....	2,631	331	1,295	527	1,336	141
Mississippi.....	1,998	287	644	530	1,354	173
<b>WEST SOUTH CENTRAL</b> .....	<b>12,065</b>	<b>476</b>	<b>6,764</b>	<b>655</b>	<b>5,301</b>	<b>246</b>
Arkansas.....	1,851	311	732	503	1,119	185
Louisiana.....	2,086	438	1,262	603	824	186
Oklahoma.....	2,375	503	1,354	699	1,021	243
Texas.....	5,753	531	3,416	690	2,337	298
<b>MOUNTAIN</b> .....	<b>3,683</b>	<b>664</b>	<b>2,557</b>	<b>740</b>	<b>1,126</b>	<b>499</b>
Montana.....	539	698	334	856	205	435
Idaho.....	445	609	258	647	187	559
Wyoming.....	224	777	151	841	73	648
Colorado.....	1,031	690	751	772	280	470
New Mexico.....	420	476	262	549	158	354
Arizona.....	429	744	331	795	98	567
Utah.....	505	600	396	629	109	496
Nevada.....	90	1,000	74	1,041	16	811
<b>PACIFIC</b> .....	<b>8,023</b>	<b>999</b>	<b>6,930</b>	<b>1,008</b>	<b>1,093</b>	<b>945</b>
Washington.....	1,552	841	1,253	887	299	651
Oregon.....	944	757	723	817	221	563
California.....	5,527	1,085	4,954	1,066	573	1,246

\* Includes income from profits from the sale of property and imputed rent on owned homes. Excludes imputed income from durable consumption goods other than homes. For figures exclusive of profits from sale of property, see Table 18, p. 174.

**18. GEOGRAPHIC DISTRIBUTION OF INCOME EXCLUSIVE OF PROFITS  
FROM SALE OF PROPERTY, 1929<sup>a</sup>**

Geographic Divisions and States	Entire Population			Non-Farm Population <sup>b</sup>		
	Aggregate Income		Per Capita Income	Aggregate Income		Per Capita Income
	In Mil- lions of Dollars	As Per- centage of Total		In Mil- lions of Dollars	As Per- centage of Total	
<b>CONTINENTAL UNITED STATES.</b>	<b>85,185</b>	<b>100.00</b>	<b>\$699</b>	<b>76,925</b>	<b>100.00</b>	<b>\$840</b>
<b>NEW ENGLAND.....</b>	<b>6,646</b>	<b>7.80</b>	<b>817</b>	<b>6,377</b>	<b>8.29</b>	<b>836</b>
Maine.....	485	0.57	609	408	0.53	645
New Hampshire.....	287	0.34	617	266	0.35	650
Vermont.....	218	0.25	606	178	0.23	725
Massachusetts.....	3,695	4.34	873	3,624	4.71	872
Rhode Island.....	553	0.65	810	544	0.71	808
Connecticut.....	1,408	1.65	883	1,357	1.76	896
<b>MIDDLE ATLANTIC.....</b>	<b>25,978</b>	<b>30.50</b>	<b>998</b>	<b>25,281</b>	<b>32.87</b>	<b>1,038</b>
New York.....	15,048	17.67	1,208	14,697	19.11	1,251
New Jersey.....	3,715	4.36	932	3,629	4.72	938
Pennsylvania.....	7,215	8.47	752	6,955	9.04	796
<b>EAST NORTH CENTRAL.....</b>	<b>19,628</b>	<b>23.04</b>	<b>783</b>	<b>18,328</b>	<b>23.82</b>	<b>890</b>
Ohio.....	4,937	5.80	748	4,678	6.08	837
Indiana.....	1,928	2.26	598	1,748	2.27	726
Illinois.....	6,978	8.19	922	6,679	8.68	1,017
Michigan.....	3,867	4.54	811	3,646	4.74	914
Wisconsin.....	1,918	2.25	656	1,577	2.05	770
<b>WEST NORTH CENTRAL.....</b>	<b>7,208</b>	<b>8.46</b>	<b>543</b>	<b>5,918</b>	<b>7.69</b>	<b>719</b>
Minnesota.....	1,490	1.75	583	1,270	1.65	761
Iowa.....	1,171	1.38	474	965	1.25	640
Missouri.....	2,233	2.62	617	2,022	2.63	807
North Dakota.....	286	0.34	421	166	0.22	581
South Dakota.....	284	0.33	412	180	0.23	597
Nebraska.....	702	0.82	511	538	0.70	678
Kansas.....	1,042	1.22	555	777	1.01	664
<b>SOUTH ATLANTIC.....</b>	<b>6,947</b>	<b>8.16</b>	<b>442</b>	<b>5,896</b>	<b>7.66</b>	<b>602</b>
Delaware.....	213	0.25	895	196	0.26	1,021
Maryland.....	1,185	1.39	731	1,108	1.44	802
District of Columbia.....	557	0.66	1,148	557	0.72	1,148
Virginia.....	1,022	1.20	422	847	1.10	579
West Virginia.....	810	0.95	473	739	0.96	585
North Carolina.....	982	1.15	313	717	0.93	464
South Carolina.....	448	0.53	258	329	0.43	405
Georgia.....	981	1.15	337	770	1.00	520
Florida.....	749	0.88	522	633	0.82	546
<b>EAST SOUTH CENTRAL.....</b>	<b>3,285</b>	<b>3.86</b>	<b>334</b>	<b>2,520</b>	<b>3.28</b>	<b>531</b>
Kentucky.....	986	1.16	378	810	1.05	570
Tennessee.....	871	1.02	335	704	0.92	510
Alabama.....	856	1.01	325	667	0.87	515
Mississippi.....	572	0.67	286	339	0.44	525
<b>WEST SOUTH CENTRAL.....</b>	<b>5,537</b>	<b>6.50</b>	<b>459</b>	<b>4,232</b>	<b>5.50</b>	<b>625</b>
Arkansas.....	570	0.67	308	363	0.47	496
Louisiana.....	893	1.05	428	740	0.96	586
Oklahoma.....	1,147	1.35	483	899	1.17	664
Texas.....	2,927	3.43	509	2,230	2.90	653
<b>MOUNTAIN.....</b>	<b>2,379</b>	<b>2.79</b>	<b>646</b>	<b>1,828</b>	<b>2.38</b>	<b>715</b>
Montana.....	367	0.43	681	277	0.36	833
Idaho.....	270	0.32	607	166	0.22	639
Wyoming.....	173	0.20	772	126	0.16	828
Colorado.....	687	0.81	666	556	0.72	740
New Mexico.....	196	0.23	467	140	0.18	538
Arizona.....	305	0.36	711	249	0.33	754
Utah.....	294	0.34	532	240	0.31	606
Nevada.....	87	0.10	967	74	0.10	1,000
<b>PACIFIC.....</b>	<b>7,577</b>	<b>8.89</b>	<b>944</b>	<b>6,545</b>	<b>8.51</b>	<b>944</b>
Washington.....	1,243	1.46	801	1,049	1.36	836
Oregon.....	701	0.82	743	577	0.75	799
California.....	5,633	6.61	1,019	4,919	6.40	993

<sup>a</sup> Excludes also imputed income from durable goods (other than homes) in hands of consumers.

Income for farm population same as in Tables 16 and 17, pp. 172-73.

**19. GEOGRAPHIC DISTRIBUTION OF THE AGGREGATE PERSONAL INCOME  
OF THE NON-FARM POPULATION, BY TYPES OF INCOME, 1929**

Geographic Divisions and States	I. In Millions of Dollars				II. As a Percentage of Total			
	Total In- come	In- come from Occu- pation <sup>a</sup>	Re- turns from Prop- erty <sup>b</sup>	Profits from Sale of Prop- erty	Total In- come	In- come from Occu- pation <sup>a</sup>	Re- turns from Prop- erty <sup>b</sup>	Profits from Sale of Prop- erty
<b>CONTINENTAL UNITED STATES.....</b>	<b>83,125</b>	<b>59,797</b>	<b>17,128</b>	<b>6,200</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>
<b>NEW ENGLAND.....</b>	<b>7,108</b>	<b>4,796</b>	<b>1,581</b>	<b>731</b>	<b>8.55</b>	<b>8.02</b>	<b>9.23</b>	<b>11.79</b>
Maine.....	437	326	83	28	0.53	0.55	0.48	0.45
New Hampshire.....	282	217	49	16	0.34	0.36	0.29	0.26
Vermont.....	188	145	34	9	0.23	0.24	0.20	0.14
Massachusetts.....	4,053	2,709	914	430	4.87	4.53	5.33	6.94
Rhode Island.....	593	404	140	49	0.71	0.68	0.82	0.79
Connecticut.....	1,555	995	361	199	1.87	1.66	2.11	3.21
<b>MIDDLE ATLANTIC.....</b>	<b>28,120</b>	<b>18,139</b>	<b>7,142</b>	<b>2,839</b>	<b>33.83</b>	<b>30.34</b>	<b>41.70</b>	<b>45.79</b>
New York.....	16,652	9,906	4,792	1,954	20.03	16.57	27.98	31.51
New Jersey.....	3,910	2,752	876	282	4.71	4.60	5.11	4.55
Pennsylvania.....	7,558	5,481	1,474	603	9.09	9.17	8.61	9.73
<b>EAST NORTH CENTRAL.....</b>	<b>19,531</b>	<b>14,700</b>	<b>3,628</b>	<b>1,203</b>	<b>23.50</b>	<b>24.58</b>	<b>21.18</b>	<b>19.40</b>
Ohio.....	4,987	3,855	823	309	6.00	6.45	4.80	4.98
Indiana.....	1,801	1,512	236	53	2.17	2.53	1.38	0.85
Illinois.....	7,169	5,024	1,655	490	8.62	8.40	9.66	7.90
Michigan.....	3,921	3,000	646	275	4.72	5.01	3.77	4.44
Wisconsin.....	1,653	1,309	268	76	1.99	2.19	1.57	1.23
<b>WEST NORTH CENTRAL.....</b>	<b>6,174</b>	<b>4,886</b>	<b>1,032</b>	<b>256</b>	<b>7.43</b>	<b>8.17</b>	<b>6.02</b>	<b>4.13</b>
Minnesota.....	1,339	1,032	238	69	1.61	1.72	1.39	1.12
Iowa.....	993	819	146	28	1.19	1.37	0.85	0.45
Missouri.....	2,133	1,614	408	111	2.57	2.70	2.38	1.79
North Dakota.....	167	153	12	2	0.20	0.26	0.07	0.03
South Dakota.....	186	161	20	5	0.22	0.27	0.12	0.08
Nebraska.....	553	449	89	15	0.67	0.75	0.52	0.24
Kansas.....	893	658	119	26	0.97	1.10	0.69	0.42
<b>SOUTH ATLANTIC.....</b>	<b>6,263</b>	<b>4,826</b>	<b>1,070</b>	<b>367</b>	<b>7.53</b>	<b>8.07</b>	<b>6.25</b>	<b>5.92</b>
Delaware.....	296	122	73	101	0.36	0.20	0.43	1.63
Maryland.....	1,218	800	309	109	1.46	1.34	1.80	1.76
District of Columbia.....	598	400	157	41	0.72	0.67	0.92	0.66
Virginia.....	869	733	114	22	1.04	1.23	0.66	0.35
West Virginia.....	760	657	82	21	0.91	1.10	0.48	0.34
North Carolina.....	729	632	84	13	0.88	1.06	0.49	0.21
South Carolina.....	335	300	29	6	0.40	0.50	0.17	0.10
Georgia.....	788	654	116	18	0.95	1.09	0.68	0.29
Florida.....	670	528	106	36	0.81	0.88	0.62	0.58
<b>EAST SOUTH CENTRAL.....</b>	<b>2,618</b>	<b>2,254</b>	<b>267</b>	<b>97</b>	<b>3.15</b>	<b>3.77</b>	<b>1.56</b>	<b>1.56</b>
Kentucky.....	861	689	122	50	1.04	1.15	0.71	0.80
Tennessee.....	733	676	29	28	0.88	1.13	0.18	0.45
Alabama.....	683	589	78	16	0.82	0.99	0.45	0.26
Mississippi.....	341	300	38	3	0.41	0.50	0.22	0.05
<b>WEST SOUTH CENTRAL.....</b>	<b>4,433</b>	<b>3,545</b>	<b>686</b>	<b>202</b>	<b>5.33</b>	<b>5.93</b>	<b>4.01</b>	<b>3.26</b>
Arkansas.....	368	320	42	6	0.44	0.54	0.25	0.10
Louisiana.....	761	622	118	21	0.92	1.04	0.69	0.34
Oklahoma.....	947	748	151	48	1.14	1.25	0.88	0.77
Texas.....	2,357	1,855	375	127	2.83	3.10	2.19	2.05
<b>ROCKY MOUNTAIN.....</b>	<b>1,893</b>	<b>1,530</b>	<b>298</b>	<b>65</b>	<b>2.28</b>	<b>2.56</b>	<b>1.74</b>	<b>1.05</b>
Montana.....	286	237	41	8	0.35	0.40	0.24	0.13
Idaho.....	167	147	18	2	0.20	0.25	0.10	0.03
Wyoming.....	127	108	17	2	0.15	0.18	0.10	0.03
Colorado.....	580	445	111	24	0.70	0.74	0.65	0.39
New Mexico.....	144	120	21	3	0.17	0.20	0.12	0.05
Arizona.....	263	209	40	14	0.32	0.35	0.23	0.23
Utah.....	249	203	37	9	0.30	0.34	0.22	0.14
Nevada.....	77	61	13	3	0.09	0.10	0.08	0.05
<b>PACIFIC COAST.....</b>	<b>6,985</b>	<b>5,121</b>	<b>1,424</b>	<b>440</b>	<b>8.40</b>	<b>8.56</b>	<b>8.31</b>	<b>7.10</b>
Washington.....	1,111	891	157	63	1.34	1.49	0.92	1.02
Oregon.....	591	492	86	13	0.71	0.82	0.50	0.21
California.....	5,283	3,738	1,181	364	6.35	6.25	6.89	5.87

<sup>a</sup> Wages, salaries, and business profits in regular occupations. Does not include income from odd jobs of otherwise employed persons or income from roomers or boarders in private families.

<sup>b</sup> Chiefly investment income, including imputed rent on owned homes.<sup>c</sup> Also includes income from odd jobs of otherwise employed individuals, from roomers and boarders in private families, and from gardens, cows, chickens, etc. Does not include imputed income from durable consumption goods other than homes.

**20. PER CAPITA PERSONAL INCOME OF THE NON-FARM POPULATION,  
BY STATES AND TYPE OF INCOME, 1929**

Geographic Divisions and States	Total Income	Income from Occu- pation <sup>a</sup>	Returns from Prop- erty <sup>b</sup>	Profits from Sale of Property
<b>CONTINENTAL UNITED STATES.....</b>	<b>\$ 908</b>	<b>\$653</b>	<b>\$187</b>	<b>\$ 68</b>
<b>NEW ENGLAND.....</b>	<b>932</b>	<b>629</b>	<b>207</b>	<b>96</b>
Maine.....	689	514	131	44
New Hampshire.....	689	530	120	39
Vermont.....	761	587	138	36
Massachusetts.....	976	652	220	104
Rhode Island.....	881	600	208	73
Connecticut.....	1,028	658	239	132
<b>MIDDLE ATLANTIC.....</b>	<b>1,155</b>	<b>745</b>	<b>293</b>	<b>117</b>
New York.....	1,417	843	408	166
New Jersey.....	1,011	712	226	73
Pennsylvania.....	865	627	169	69
<b>EAST NORTH CENTRAL.....</b>	<b>948</b>	<b>714</b>	<b>176</b>	<b>58</b>
Ohio.....	893	690	147	56
Indiana.....	748	628	98	22
Illinois.....	1,091	765	252	74
Michigan.....	983	752	162	69
Wisconsin.....	807	639	131	37
<b>WEST NORTH CENTRAL.....</b>	<b>750</b>	<b>594</b>	<b>125</b>	<b>31</b>
Minnesota.....	802	618	143	41
Iowa.....	659	543	97	19
Missouri.....	851	644	163	44
North Dakota.....	588	539	42	7
South Dakota.....	614	531	66	17
Nebraska.....	698	566	112	20
Kansas.....	686	562	102	22
<b>SOUTH ATLANTIC.....</b>	<b>640</b>	<b>493</b>	<b>109</b>	<b>38</b>
Delaware.....	1,550	639	382	529
Maryland.....	881	578	224	79
District of Columbia.....	1,233	825	324	85
Virginia.....	594	501	78	15
West Virginia.....	602	520	65	17
North Carolina.....	472	409	55	8
South Carolina.....	412	369	36	7
Georgia.....	532	442	78	12
Florida.....	577	455	91	31
<b>EAST SOUTH CENTRAL.....</b>	<b>552</b>	<b>475</b>	<b>56</b>	<b>21</b>
Kentucky.....	605	484	86	35
Tennessee.....	529	488	22	19
Alabama.....	527	455	61	12
Mississippi.....	530	466	59	5
<b>WEST SOUTH CENTRAL.....</b>	<b>655</b>	<b>524</b>	<b>101</b>	<b>30</b>
Arkansas.....	503	437	59	7
Louisiana.....	603	493	93	17
Oklahoma.....	699	552	112	35
Texas.....	690	543	110	37
<b>ROCKY MOUNTAIN.....</b>	<b>740</b>	<b>598</b>	<b>117</b>	<b>25</b>
Montana.....	856	710	123	23
Idaho.....	647	570	70	8
Wyoming.....	841	715	113	13
Colorado.....	772	592	148	32
New Mexico.....	549	458	80	11
Arizona.....	795	633	121	41
Utah.....	629	513	93	23
Nevada.....	1,041	824	176	41
<b>PACIFIC COAST.....</b>	<b>1,008</b>	<b>739</b>	<b>205</b>	<b>64</b>
Washington.....	887	711	125	51
Oregon.....	817	680	119	18
California.....	1,066	755	238	73

<sup>a</sup> Wages, salaries, and business profits in regular occupations. Does not include income from odd jobs of otherwise employed persons or income from roomers or boarders in private families.

<sup>b</sup> Chiefly investment income, including imputed rent on owned homes. Also includes income from odd jobs of otherwise employed individuals, from roomers and boarders in private families, and from gardens, cows, chickens, etc. Does not include imputed income on durable consumption goods other than homes.

## IV. ESTIMATING THE DISTRIBUTION OF PERSONAL INCOMES

Various attempts have been made to estimate the distribution of income by income classes. In practically every case the investigator came to the conclusion that such an estimate could be made only on an empirical basis. The distribution of income apparently does not fall along a definite mathematical curve which applies to all countries and to all years. The final estimates reached in the present study are based upon an analysis and synthesis of sample data relating to the distribution of wage rates and earnings of different occupational groups and upon the income tax statistics of the United States Bureau of Internal Revenue. The sample distributions were used to build up a composite frequency curve reflecting the distribution of the income in the lower brackets, while the income tax statistics served as a basis for estimating the distribution in the income classes of \$5,000 and above. Before being employed in this study the income tax data were examined and tested in the light of available sample distributions covering the entire range of incomes.

Three estimates were made of the distribution of personal incomes in 1929. First, a completely independent compilation utilizing all the available material as described above; second, an extension of an estimate made by Frederick R. Macaulay for 1918 to apply to 1929; and third, an extension of an estimate for 1921 made by W. I. King. The three estimates are compared in Table 26, page 205. We shall first indicate briefly the methods used in correcting the estimates of Macaulay and King.

## A. THE 1929 DISTRIBUTION BASED ON MACAULAY'S ESTIMATE FOR 1918

Macaulay's estimate for 1918, which was made after a careful and thorough analysis of the data then existing, may be accepted as the best approximation that could be made for that year. However, Macaulay's curve is based on the number of gainful workers as reported in the Census of Occupations. Moreover, it represents the number of such gainful workers as of the middle of the year. It must, therefore, be adjusted to include (1) the income recipients who were not gainfully employed and (2) the additional workers who were gainfully employed during the second part of the year and who were not fully represented

in the mid-year average. Instead of about 40 million income recipients postulated in his analysis there were approximately 42.5 million individuals among whom the 1918 income was distributed.<sup>30</sup>

In order to convert Macaulay's distribution for 1918 into a distribution representing 1929 the income tax returns for the two years were subjected to the following analysis. The number of returns in the income classes of \$5,000 and over was in each case divided by the estimated total number of income recipients. This gave us approximations for each year of the percentages of the income recipients reporting incomes of various amounts in the upper brackets. The lower limit of \$5,000 was selected on account of the various exemptions in 1929 which render the income tax returns below \$5,000 for that year non-comparable with those for 1918. It was assumed that the income returns above \$5,000 were subject to the same forces of evasion and under-reporting and to an equal extent in both years. When the distributions above \$5,000 for each year were plotted in cumulative form (from upper to lower incomes) on double log paper it was found that the points arranged themselves along practically straight lines in accordance with "Pareto's Law."<sup>31</sup> These lines, however, were not parallel. The downward slope of the 1918 line was steeper than the downward slope of the line for 1929.

<sup>30</sup> Macaulay uses 40,069,060 as the total number of income recipients in 1918. More recent and more accurate estimates indicate that this figure is too low. King's estimates of the number of gainfully occupied persons in 1918 given in *The National Income and Its Purchasing Power* (p. 47) are: Jan. 1, 39,916,000; July 1, 40,383,000; and Dec. 31, 40,816,000. It is obvious that Macaulay's figure of 40,069,060 was meant to represent the middle of the year, though on this assumption too his figure is an under-estimate. Theoretically it is questionable whether in an income distribution we should use the number of income recipients at the middle of the year. The year-end figure is more appropriate since it includes those who received incomes for the second as well as the first part of the year. Even this figure is deficient, of course, since those who died during the year are not included.

In addition to the deficiency in the estimate of the number of incomes from gainful occupations, Macaulay's figure, as has already been indicated, is too low because it does not include the incomes of those without occupations. It is estimated that at the end of 1918 there were 1,710,000 such income recipients in the United States. (See Table 21, p. 181.)

<sup>31</sup> For a statement and discussion of Pareto's Law see *Income in the United States*, National Bureau of Economic Research, pp. 344.



The income readings taken on the 1929 line opposite specific readings on the 1918 line constituted equivalents for corresponding positions in the arrays of the incomes for the two years. It was thus found that the same position occupied in the 1918 array by an income of \$5,000 was in 1929 occupied by an income of \$7,500; that an income of \$100,000 in 1918 was represented on the 1929 curve by an income of \$180,000, and that an income of one million dollars was represented by an income of somewhat more than 2 million dollars. To put it in more concrete terms it was, for instance, found that the 99th percentile, that is the highest income of 99 per cent of the income recipients, was approximately \$5,400 in the 1918 distribution and about \$8,300 in the 1929 distribution.

Were it not for the fact that farmers' incomes in 1929 were considerably lower than in 1918, it would perhaps be valid to project the line expressing the relationship between 1918 and 1929 incomes obtained for the upper portion of the distribution curves down to the lower incomes. This would result in a replacement of an income of \$1,500 on the 1918 distribution by an income 140 per cent as great, that is \$2,100, in 1929, and an income of \$1,000 in 1918 by an income of about \$1,350 in 1929. These figures do not appear unreasonable in the light of existing data concerning earnings of urban workers.

Wage rates in the state of Ohio based on a coverage of more than one million employees in 1929 increased about 27 per cent between 1918 and 1929. Approximately the same increase apparently took place throughout the frequency distribution, that is the rates of earnings of the lower paid employees increased relatively to the same extent as those for the higher paid employees. Thus, comparing the distribution of rates in 1918 and 1929 for Ohio, we obtain the following results expressed as ratios of 1929 to 1918.

1st decile	1.29
2d decile	1.26
3d decile	1.25
4th decile	1.25
median	1.27
6th decile	1.28
7th decile	1.27
8th decile	1.27

The reason that the ratios of the first and second deciles are higher than those of the subsequent measures of the distribution is that in the 1929 distribution there is a larger number of women whose earnings between 1918 and 1929 increased more than those of males. (The rates of wages and salaries received by women increased about 40 per cent, while those of males increased only about 25 per cent.)

That the Ohio statistics represent a fair measure of the change in earnings of urban employees between 1918 and 1929 is evidenced by the fact that average earnings of wage earners in manufacturing and transportation in general increased about 31 per cent. The average earnings of all wage earners increased from \$940 to \$1,240 or 32 per cent.<sup>22</sup> However, as has already been indicated, the income of farmers was about 30 per cent lower in 1929 than it was in 1918. Hence, the change from 1918 to 1929 in all incomes in the lower portion of the curve, where most farmers are located, must have been smaller than that shown for non-farm incomes alone.

It may be assumed that most farmers in 1918 had incomes below \$2,000. In this income range there were about 37 million income recipients, of whom approximately one-sixth were farmers. Roughly, therefore, we can weight the changes in the incomes of farmers and non-farmers between 1918 and 1929 in the ratio of 1 to 5. If we assume that non-farm incomes in this group increased 30 per cent and farm incomes decreased 30 per cent we have a weighted average increase of approximately 20 per cent for the entire lower fraction of the income recipients. The average income of this group, that is of those under \$2,000, was about \$900 in 1918. Roughly, therefore, we may estimate that a \$900 income in 1918 became about \$1,080 in 1929.

The line showing the relationship between 1918 and 1929 incomes based on the upper portion of the income distributions was adjusted in accordance with the foregoing considerations, that is the point at \$900 on the 1918 income scale was incorporated in the line based on the income tax returns. The equivalents read from the adjusted line of relationship for dif-

<sup>22</sup> The 1918 average is taken from King, *The National Income and Its Purchasing Power*, p. 146. For the basis of the 1929 estimate see p. 184.

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**21. ESTIMATED PERCENTAGE DISTRIBUTION OF PERSONAL INCOMES IN 1929 BASED ON MACAULAY'S DISTRIBUTION FOR 1918**

Income Class <sup>a</sup> (In dollars)	Macauly's Cumulative Distribution for 1918		1929 Equiv- alents of Upper Class Limits in 1918 Dis- tribution <sup>d</sup>	Estimated Distribu- tion for 1929	
	As Re- ported <sup>b</sup>	Adjusted for Number of Income Re- cipients <sup>c</sup>		Cumula- tive <sup>e</sup>	Simple <sup>f</sup>
Under 0...	0.53	0.499	\$ ---	0.36	0.36
0 to 400...	2.84	3.423	450	2.80	2.44
400 to 800...	22.35	26.008	942	18.00	15.20
800 to 1,200...	54.51	59.561	1,464	43.50	25.50
1,200 to 1,600...	76.04	79.592	2,022	65.80	22.30
1,600 to 2,000...	85.92	87.805	2,600	79.20	13.40
2,000 to 2,400...	90.56	91.811	3,226	85.50	6.30
2,400 to 2,800...	93.19	94.014	3,864	89.30	3.80
2,800 to 3,200...	94.80	95.617	4,538	91.70	2.40
3,200 to 3,600...	95.87	96.518	5,220	93.20	1.50
3,600 to 4,000...	96.61	97.119	5,912	94.37	1.17
4,000 to 5,000...	97.76	98.071	7,600	96.25	1.88
5,000 to 6,000...	98.38	98.607	9,200	97.18	0.93
6,000 to 7,000...	98.76	98.927	10,800	97.82	0.64
7,000 to 8,000...	99.01	99.143	12,500	98.23	0.41
8,000 to 9,000...	99.19	99.304	14,250	98.53	0.30
9,000 to 10,000...	99.32	99.426	16,000	98.77	0.24
10,000 to 15,000...	99.643	99.699	25,000	99.35	0.58
15,000 to 20,000...	99.768	99.802	34,000	99.58	0.23
20,000 to 25,000...	99.834	99.856	43,000	99.687	0.107
25,000 to 30,000...	99.874	99.890	53,000	99.763	0.076
30,000 to 40,000...	99.919	99.929	72,000	99.841	0.078
40,000 to 50,000...	99.943	99.951	92,000	99.882	0.041
50,000 to 100,000...	99.9803	99.9831	217,000	99.9557	0.0737
100,000 to 200,000...	99.9934	99.99388	520,000	99.9814	0.0257
200,000 to 300,000...	99.99662	99.99699	820,000	99.9887	0.0073
300,000 to 400,000...	99.99794	99.99826	1,120,000	99.9923	0.0036
400,000 to 500,000...	99.99860	99.99882	1,460,000	99.9943	0.0020
500,000 to 750,000...	99.99931	99.99943	2,370,000	99.9966	0.0023
750,000 to 1,000,000...	99.999595	99.99966	3,330,000	99.99777	0.00117
1,000,000 and over.....	100.000000	100.000000		100.000000	0.00223

<sup>a</sup> The intervals are the same as those in the original distribution.  
<sup>b</sup> *Income in the United States*, National Bureau of Economic Research, Vol. I, pp. 134-35.  
<sup>c</sup> Adjusted by shifting curve to left to allow for fact that the total income in 1918 was distributed among 42,526,000 instead of 40,069,060 postulated in original distribution. It was necessary to assume that the additional income recipients were distributed proportionately throughout the income range. An adjustment has also been made for the inclusion of the military personnel left out in the original distribution. In making this adjustment it was assumed that only a negligible number of those in the military forces would have had incomes of less than zero or more than \$5,000. It was further assumed that those in the military service would have been distributed as the other income recipients, between zero and \$5,000.  
<sup>d</sup> Based on income tax returns for incomes of \$5,000 and over and on fragmentary data pertaining to the change in the earnings of those in the lower income classes between 1918 and 1929.  
<sup>e</sup> Read from curve resulting from plotting the adjusted number of income recipients on the 1929 equivalents of upper class limits in the 1918 distribution.  
<sup>f</sup> Decumulated.

ferent values on the income scale of the 1918 distribution are shown in Table 21 above. Macaulay's adjusted curve for 1918 was plotted against these equivalents to obtain the esti-

mated cumulated distribution for 1929. The result of this operation is also shown in Table 21.

It should be observed that in carrying through the several adjustments described above the estimates of the total national income in 1918, as made by the National Bureau of Economic Research, were accepted as correct. The adjustments in Macaulay's curve were made in such a way as not to disturb this assumption. In other words, the introduction of additional income recipients did not presumably raise the aggregate income; it merely lowered the average.

#### B. THE 1929 DISTRIBUTION BASED ON KING'S ESTIMATE FOR 1921

A procedure similar to that used in extending Macaulay's estimate was employed in connection with the distribution obtained by King for 1921. King's estimate for 1921 was reached, as in the case of Macaulay's, after a thorough canvass of the field. Since King had a greater abundance of data to work with, it is reasonable to believe that his results for 1921 were even more accurate than Macaulay's for 1918. However, King's figures too had to be adjusted for the number of income recipients, the discrepancy again arising from the fact that only gainfully employed persons as of the middle of the year had been included.

Somewhat greater flexibility was afforded in the manipulation of King's estimates because they were available in greater detail. Thus it was possible in this case to exclude farmers from the distribution. The distribution of incomes among farmers in 1929 was computed on a more direct basis, which is described on pages 197-203.

The data used in converting King's distribution for 1921 into a distribution reflecting conditions in 1929 are shown in Table 22. The first column gives an adjusted distribution for 1921 which includes all income recipients exclusive of farmers. The second column shows the estimated equivalents in 1929 corresponding to specified readings on the income scale in 1921. Thus, for instance, the position occupied in the 1921 array of incomes by an income of \$500 was according to these estimates occupied by an income of \$610; an income of \$3,000 was replaced in the array by an income of \$4,080; and an

**22. PERCENTAGE DISTRIBUTION OF PERSONAL INCOMES IN 1929 BASED ON KING'S DISTRIBUTION FOR 1921**

Income Class (In dollars)	Distribution of Personal Incomes in 1921 Based on King <sup>a</sup>	Estimated 1929 Equiv- alents for 1921 <sup>b</sup> (Upper class limits)	Estimated Distribution of Personal Incomes in 1929	
			Exclusive of Farmers <sup>c</sup>	Inclusive of Farmers <sup>d</sup>
0 to 500.....	14.00	\$ 610	10.20	12.79
500 to 1,000.....	34.00	1,257	23.80	24.93
1,000 to 1,500.....	26.60	1,929	24.80	23.77
1,500 to 2,000.....	13.30	2,626	18.20	16.99
2,000 to 2,500.....	4.43	3,345	9.50	8.94
2,500 to 3,000.....	2.17	4,086	4.30	4.05
3,000 to 3,500.....	1.30	4,844	2.08	1.97
3,500 to 4,000.....	0.85	5,620	1.36	1.30
4,000 to 4,500.....	0.61	6,408	0.98	0.93
4,500 to 5,000.....	0.46	7,210	0.74	0.70
5,000 to 6,000.....	0.56	8,820	1.00	0.92
6,000 to 7,000.....	0.34	10,500	0.61	0.56
7,000 to 8,000.....	0.24	12,192	0.42	0.38
8,000 to 9,000.....	0.18	13,896	0.30	0.27
9,000 to 10,000.....	0.130	15,660	0.220	0.196
10,000 to 11,000.....	0.100	17,479	0.175	0.155
11,000 to 12,000.....	0.084	19,296	0.132	0.117
12,000 to 13,000.....	0.068	21,151	0.114	0.100
13,000 to 14,000.....	0.060	23,016	0.092	0.081
14,000 to 15,000.....	0.048	24,900	0.080	0.070
15,000 to 20,000.....	0.162	34,500	0.267	0.234
20,000 to 25,000.....	0.092	44,000	0.156	0.137
25,000 to 30,000.....	0.053	56,000	0.098	0.086
30,000 to 40,000.....	0.063	84,000	0.116	0.101
40,000 to 50,000.....	0.036	117,000	0.064	0.056
50,000 to 75,000.....	0.035	213,000	0.080	0.070
75,000 to 100,000.....	0.0120	325,000	0.0356	0.0312
100,000 to 250,000.....	0.01402	1,170,000	0.05250	0.04598
250,000 to 500,000.....	0.00218	3,100,000	0.01405	0.01230
500,000 to 750,000.....	0.00044	5,400,000	0.00365	0.00320
750,000 to 1,000,000.....	0.00015	7,600,000	0.00165	0.00145
1,000,000 and over.....	0.00021		0.00355	0.00311
All classes.....	100.00000		100.00000	100.00000

<sup>a</sup> Exclusive of farmers. Based on unpublished data by King.  
<sup>b</sup> Equivalents for corresponding positions in arrays of incomes in 1929 and 1921. Based on federal income tax returns and average earnings of wage earners.  
<sup>c</sup> Derived by plotting cumulative percentages of the figures in the first column against the equivalents shown in the second.  
<sup>d</sup> See Table 30, p. 210.

income of \$5,000 by one of \$7,200. The estimates corresponding to 1921 incomes \$5,000 and over are based directly upon the federal income tax returns, the assumption being made here, as in the preceding case, that conditions with respect to evasion and under-reporting were the same in the two years. The estimates below \$5,000 were adjusted on the basis of the relationship between average earnings of wage earners in 1921

and 1929 on the basis of the figures presented in Table 5, page 152. We estimate that the average earnings of wage workers in 1929 were \$1,240,<sup>83</sup> as compared with King's estimate of \$983 for 1921, which gives an increase between the two years of about 26 per cent. Some of this rise was, of course, due to an increase in employment, 1921 having been a depression year and 1929 a year of high prosperity. The change in weekly earnings was only 20 per cent.

The ratios (1929 readings to 1921 readings for the same positions in the arrays) obtained from the income tax statistics have been plotted together with the ratio of average earnings of wage earners. The smooth line fitted to these points gave the approximations upon which the equivalents shown in Table 22 are based.<sup>84</sup> The third column in the table represents the decumulated percentage frequencies derived from readings on the frequency curve obtained by plotting the first column, cumulated, against the equivalents given in the second column.

To obtain the numerical distribution the percentages in the third column have been multiplied by the estimated number of income recipients in 1929, exclusive of farmers. Before doing so, however, the number was reduced by 93,000, which is the estimated number of non-farmer income recipients who in 1929 had negative incomes. This was necessary because Table 22 is concerned only with positive incomes.

The last column in the table has been computed by combining the distribution of the income recipients exclusive of farmers, discussed above, and a distribution of the incomes of farmers shown in Table 30 on page 210 and described on pages 211-12.

### C. INDEPENDENT ESTIMATE OF THE DISTRIBUTION OF PERSONAL INCOMES

It will be noted that although there is general conformity between the two derived distributions there is also considerable

<sup>83</sup> It is estimated that approximately 27.8 million wage earners were attached to all industries in 1929; in 1921 the number, according to King's estimate, was 26.15 million. The total wage bill in 1929 is placed at 34,485 million dollars (see Table 7, p. 155), which gives an average of about \$1,240.

<sup>84</sup> It should be observed that the ratios for the values \$5,000 and over in themselves formed a smooth curve.

divergence in details. The differences which may be ascribed to errors in any or all of the steps involved in obtaining the estimates—in the compilations of the original distributions, in the adjustments, and in the transformations—appeared wide enough to make an independent estimate desirable. Moreover, the derived estimates did not furnish sufficient details to make it possible to transform the distribution of individual incomes into a curve representing the distribution of income among family units. The latter was among the main objectives of this study.

Only a brief summary can be presented in this appendix of the process employed in obtaining the third estimate of the distribution of personal incomes. Full consideration of the problems involved in making such an estimate is given by Frederick R. Macaulay in connection with his computations for 1918.<sup>28</sup> In outlining the process, it will be convenient to treat farmers as a separate group.

For non-farmers, as has already been indicated, the basic data consisted of the federal income tax statistics and various sample distributions pertaining to earnings and rates of pay for different industrial and occupational groups.

The major steps in combining the two sets of data for non-farmers into a final distribution were:

1. A preliminary distribution of earnings among the gainfully employed was made from the scattered sample data.

2. This distribution was combined with an estimated distribution of earnings of \$5,000 or more compiled on the basis of the income tax returns. The latter distribution was deemed to be somewhat more accurate than the distribution obtained from the different samples, which were deficient in representation from the upper income groups. The method of estimating the number of occupational incomes of \$5,000 and over is shown in Table 23, page 187.

3. The estimated distribution thus obtained was adjusted so that the aggregate income corresponded with the total occupational income computed on the basis of the recent estimates of the Department of Commerce.

<sup>28</sup> *Income in the United States*, National Bureau of Economic Research, Vol. II, Pt. III, pp. 341ff.

4. The adjusted curve of occupational income was transformed into a distribution of the total income of the gainfully employed. The transformation was made by the use of equivalents showing total income for specified amounts of occupational income. These equivalents are shown in Table 35, page 221.

5. The final step was to add the estimated distribution of income among the income recipients who had no gainful occupations. The total number of these individuals in 1929 is placed at about 2 million. The estimates above \$5,000 were made on the basis of the income statistics. Ratios of total net income to occupational income, computed from the income statistics for different earnings classes, were applied to our estimates of the distribution of occupational incomes. The estimates below \$5,000 were made in accordance with the assumption that the distribution of those without gainful occupations was like that of the individuals with gainful occupations. In the absence of definite information this was the best assumption that could be made.

The samples employed in estimating the distribution of occupational incomes for all income recipients except farmers are indicated in the outline beginning on page 190. Most of these samples in themselves constituted combinations of distributions representing occupational groups within an industry. Some of the latter sub-samples have been utilized to build up additional indices of the distribution of earnings among groups not directly covered. Thus, for example, by selecting sub-samples for common laborers in several industrial samples a new combined index was set up to represent common labor in general.

The initial task in the utilization of the different samples was to adjust them to a common basis. While most of the sample distributions used were for 1929, in order to broaden the industrial base it was necessary to utilize also samples for other years. When a sample for another year was used an attempt was made to correct for the difference in earnings in the group concerned between that year and 1929.

Important adjustments had to be made also on account of the fact that most of the sample distributions were in terms of weekly or semi-monthly periods. The only method open in this case was to multiply each distribution by a factor representing the average number of weeks worked by the group during 1929.



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### 23. PRELIMINARY ESTIMATE OF THE DISTRIBUTION OF OCCUPATIONAL INCOMES \$5,000 AND OVER, 1929<sup>a</sup>

Income from Business, Profession, or Salary, Etc. (In thousands of dollars)	Number of Income Recipients with Specified Income from			Total Cumulated from Higher to Lower Incomes
	Salaries, Commissions, Etc. <sup>b</sup>	Business and Professions <sup>c</sup>	Total	
5 to 10.....	434,820	359,665	794,485	1,076,397
10 to 15.....	81,523	72,461	153,984	281,912
15 to 20.....	28,754	25,648	54,402	127,928
20 to 25.....	13,156	12,088	25,244	73,526
25 to 30.....	7,467	6,778	14,245	48,282
30 to 40.....	7,175	7,252	14,427	34,037
40 to 50.....	2,822	3,528	6,350	19,610
50 to 75.....	2,949	3,911	6,860	13,260
75 to 100.....	856	1,426	2,282	6,400
100 to 250.....	849	2,490	3,339	4,118
250 to 500.....	102	469	571	779
500 to 1,000.....	11	107	118	208
1,000 and over.....	3	87	90	90
Total.....	580,487	495,910	1,076,397	

<sup>a</sup> Based on data from *Statistics of Income for 1929*, Bureau of Internal Revenue, p. 11. The published figures have been adjusted to include income returns showing income from all sources of less than \$5,000. The adjustment was made on the basis of special tabulations of returns from members of the medical and allied professions, prepared by the Treasury Department for the Committee on the Cost of Medical Care (see Maurice Leven, *The Incomes of Physicians*).

<sup>b</sup> It is assumed that there was practically no under-reporting or evasion in income from salaries, since employers are required to report to the Treasury wage and salary payments exceeding the personal exemption.

<sup>c</sup> Two adjustments were necessary in the published figures under this head. First, since the original data do not include partnerships, the figures had to be raised by the ratio of income from "Partnerships" to income from "Business and Professions" as recorded in Table 7 of *Statistics of Income for 1929*. Second, on the basis of a comparative study of the actual incomes of dentists and the income tax returns from this group, it was estimated that the under-reporting and evasion in the incomes of \$5,000 and over amounted to about 65 per cent. (For 1918 Macaulay estimated that there were approximately 76 per cent more income recipients of \$5,000 and over than income tax returns.) The estimated number of income tax returns has accordingly been raised by 65 per cent.

Obviously this adjustment failed to take into consideration the scatter in the number of weeks worked by the different members of the group. Moreover, in making this adjustment it had to be

assumed that the week (or other period) for which the sample distribution was obtained was a representative week with respect to employment and hours of work. In most cases a full year's employment was assumed. For clerical workers the year was taken to be 52 weeks; for factory workers, except in special cases, it was taken to be 50 weeks.

Another type of adjustment was necessary in connection with two of the major samples. The data for Ohio and Oregon were compiled in terms of weekly rates rather than actual earnings. In order to make use of these samples it was necessary, therefore, to find some means of going from one distribution to the other. The difference between a distribution of wage rates and one of actual earnings needs no explanation. It is obvious that because of short-time and over-time work the dispersion of earnings is usually much greater than the dispersion of rates of pay in any group. In the absence of adequate data for current years regarding the relationship between rates of pay and actual earnings, resort was had to the data collected in connection with the Census of Manufactures for 1900. In this census a record was made of the distribution of weekly rates of pay and actual earnings for identical workers in a number of industries. Upon analysis of these distributions the following rough generalizations were made which indicate the ratios of specified percentiles taken on the distribution curve of weekly earnings to the corresponding percentiles read from a distribution of weekly rates of pay for the same individuals.

Percentile	Ratio
5th	86.3
10th	88.6
20th	91.8
30th	94.1
40th	95.8
50th	97.0
60th	97.7
70th	98.0
80th	98.2
90th	98.3
95th	98.4
99th	99.0

As might be expected, we find that in the upper portion of the distribution the actual earnings and the rates of pay nearly coincide. Most of the individuals located there presumably worked full time. In the lower portion, however, there is a great divergence because many of the individuals failed to work the full week and hence their actual pay was much lower than their weekly rate.

The causes, such as illness, social and other functions like weddings, funerals, and the like, which prevent certain individuals in a group from working full time are perhaps not greatly different in one period than in another, provided the two periods represent normal conditions. It has not, of course, been possible to compare the incidence of these causes in 1929 and 1900, but it is believed that within broad limits of accuracy the 1900 experience may well be applied to 1929. The distributions of the rates of pay of employees in Ohio and Oregon have accordingly been adjusted on the basis of the foregoing ratios.

In order to combine the sample data into a composite distribution, the gainful workers listed in the Census of Occupations were grouped in accordance with the economic classes represented by the samples. The classifications were made with the aid of the data supplied by the other divisions of the Census of 1930. Thus, for instance, the manufacturing samples were combined into distributions of earnings in all manufacturing industries on the basis of the Census of Manufactures. In this process particular use was made of the wage data for the different manufacturing industries. These data, together with consideration of the production processes involved and the proportion of male and female workers, aided in bringing together the industries in which similar conditions with respect to earnings existed. In these combinations consideration was given to geographic location of industries as well as to the proportions of skilled and unskilled employees. It is realized, however, that even with all the care and ingenuity exercised in setting up the classifications, the weights obtained fitted the samples but roughly, the fact being that the samples were too few to cover the entire range of industrial and occupational variations. The accompanying outline will indicate the general scheme of weighting used in the integration of the sample data.

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### WEIGHTS APPLIED TO VARIOUS GROUP INDICES IN COMPUTING THE DISTRIBUTION OF EARNINGS AMONG THE GAINFULLY EMPLOYED IN 1929

GROUP OR SAMPLE	WEIGHT
I. MAJOR GROUPS	
Farmers (See discussion, pp. 195-203) . . . . .	6,000
Male salaried workers and wage earners (See II below.) . . . . .	26,360
Male professional and executive personnel (See IV below.) . . . . .	2,162
Male and female, non-farm and non-professional entrepreneurs (See explanation in text, pp. 209 and 212-13) . . . . .	2,906
Female salaried workers and wage earners (See V below.) . . . . .	9,613
Total (This is the estimated number, in thousands, of individuals with remunerative occupations, excluding unpaid family labor on farms, at the end of 1929.) . . . . .	47,041
II. MALE SALARIED WORKERS AND WAGE EARNERS	
Semi-professional employees (Based on rural school teachers, pro- fessional attendants, etc.) . . . . .	100
Routine clerical workers in 32 large cities ( <i>Salaries for Routine Clerical Work in Private Industry, 1929</i> , U. S. Personnel Classification Board, pp. 52-60.) . . . . .	110
Routine clerical workers in other cities (The same.) . . . . .	110
Office employees in Massachusetts ("Salaries of Office Employees in Massachusetts, May, 1, 1926," <i>Annual Report of the Sta- tistics of Labor for the Year Ending November 30, 1926</i> , Pt. III, <i>Labor Bulletin No. 149</i> . The figures for 1926 were con- verted to 1929.) . . . . .	120
Train and engine men ( <i>Monthly and Annual Earnings and De- tails of Service of Train and Engine Service Employees</i> , U. S. Railroad Labor Board, Vol. 12. The figures are for 1923 but they have been converted to apply to 1929.) . . . . .	50
Wage earners in manufacturing (See III below.) . . . . .	1,220
Bituminous coal miners ( <i>U. S. Bureau of Labor Statistics Bulletin No. 516</i> .) . . . . .	50
Other miners (Based on bituminous sample. Adjusted on the basis of the average earnings in 1929 in bituminous coal mining and other mining, chiefly anthracite.) . . . . .	20
Foremen and lower managerial and upper clerical employees (It was assumed that the foremen and upper clerical and lower managerial employees were distributed in the same way as the wage earners in manufacturing with earnings above \$1,000.) . . . . .	165
Agricultural labor (It is assumed that practically all agricultural laborers earned less than \$1,000 in 1929, at least half being under \$500.) . . . . .	280
Other unskilled adult labor (Based on U. S. Bureau of Labor Statistics samples for laborers in the following industries:	

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GROUP OR SAMPLE	WEIGHT
Lumber, common brick, Portland cement, cotton goods, woollens and worsteds, slaughtering and meat packing.) . . . . .	271
Minors (Based on sample data for Ohio and Oregon.) . . . . .	140
Total (The total of the foregoing samples in this section, with an assigned weight of 70, was combined with the following distributions which were given a total weight of 30.) . . . . .	70
Missouri (Management and clerical forces and skilled and unskilled workers in manufacturing, <i>Forty-Ninth Annual Report of the Labor and Industrial Inspection Department, State of Missouri.</i> ) . . . . .	2
Ohio (Employees 18 years of age and over in all industries. <i>Rates of Wages, Fluctuation of Employment, Wage and Salary Payments in Ohio, 1929, Report No. 26, Department of Industrial Relations and the Industrial Commission of Ohio, pp. 8, 132, 208.</i> ) . . . . .	18
Oregon ( <i>Fourteenth Biennial Report and Industrial Directory from October 1928 to September 1930, Bureau of Labor of the State of Oregon.</i> ) . . . . .	4
Texas ("Wage Earners and Office Employees in 96 Cities and Towns in Texas," <i>Report of the Bureau of Labor Statistics of the State of Texas, 1927-1928.</i> ) . . . . .	2
Rough distribution to represent Southern states (In order to give proper representation to the Southern states a distribution for Texas was adjusted in the ratio of \$1,063 to \$1,304. The latter are the averages of employees' earnings in 11 Southern states and Texas respectively. The 11 states are: Kentucky, Virginia, Louisiana, Tennessee, Florida, Arkansas, Alabama, Mississippi, North Carolina, Georgia, and South Carolina. The adjustment is, of course, very rough.) . . . . .	4

### III. MALE WAGE EARNERS IN MANUFACTURING

(Unless otherwise specified the bulletins referred to in this section are those of the U. S. Bureau of Labor Statistics.)

Aircraft engines (Based on <i>Bulletin No. 523, pp. 44-49.</i> ) . . . . .	185
Airplanes (Based on <i>Bulletin No. 523, pp. 44-49.</i> ) . . . . .	200
Auto tires (Based on <i>Bulletin No. 358, pp. 48-53.</i> ) . . . . .	100
Boots and shoes (Based on <i>Bulletin No. 498, pp. 88-95.</i> ) . . . . .	200
Brick (Based on <i>Bulletin No. 356, pp. 44-50.</i> ) . . . . .	125
Canning and preserving ( <i>Fourteenth Biennial Report and Industrial Directory from October 1, 1928 to September 30, 1930, Bureau of Labor of the State of Oregon.</i> ) . . . . .	60
Cotton-goods manufacturing (Based on <i>Bulletin No. 492, pp. 47-52.</i> ) . . . . .	150
Cotton weavers (Based on <i>Bulletin No. 492, pp. 47-52.</i> ) . . . . .	120
Foundries (Based on <i>Bulletin No. 522, pp. 130-48.</i> ) . . . . .	600
Furniture (Based on <i>Bulletin No. 526, pp. 48-53.</i> ) . . . . .	500
Hosiery (Based on <i>Bulletin No. 504, pp. 71-76.</i> ) . . . . .	100

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GROUP OR SAMPLE	WEIGHT
Underwear (Based on <i>Bulletin No. 504</i> , pp. 71-76.)	50
Iron and steel (Based on <i>Bulletin No. 513</i> , pp. 48, 67, 86, 98, 116, 134, 144, 168, 186, 200.)	820
Laborers in selected industries (Distributions from various bulletins of U. S. Bureau of Labor Statistics.)	110
Lumber (Based on <i>Bulletin No. 497</i> , pp. 50-54.)	485
Machine shops (Based on <i>Bulletin No. 522</i> , pp. 130-48.)	600
Men's clothing (Based on <i>Bulletin No. 503</i> , pp. 67-73.)	150
Motor vehicles (Based on <i>Bulletin No. 502</i> , pp. 66-73.)	925
Paper box board (Based on <i>Bulletin No. 407</i> , pp. 82-85.)	100
Paper and pulp (Based on <i>Bulletin No. 365</i> , pp. 101-19.)	200
Portland cement (Based on <i>Bulletin No. 525</i> , pp. 50-55.)	270
Pottery (Based on <i>Bulletin No. 412</i> , pp. 60-65.)	50
Slaughtering and meat packing (Based on <i>Bulletin No. 472</i> , pp. 120-29.)	200
Woolen and worsted goods (Based on <i>Bulletin No. 487</i> , pp. 45-49.)	150
Woolen and worsted weavers (Based on <i>Bulletin No. 487</i> , pp. 45-49.)	100
Industries with average wage for males between \$1,800 and \$2,000 (This distribution is based upon that for iron and steel. The curve for the latter was shifted to the right in the ratio of \$2,000 to \$1,800.)	340
Industries with average wage, for males, between \$2,100 and \$2,600 (Iron and steel distribution shifted to the right in the ratio of \$2,400 to \$1,800).	40
Total (It will be seen that the weights covered only about 7 million male employees in manufacturing. It is assumed that the additional workers were distributed proportionately. The rough distributions here and in the preceding group were introduced to give representation to the manufacturing industries where the earnings were higher than in the industries covered by any of our samples.)	6,930

IV. MALE PROFESSIONAL AND EXECUTIVE PERSONNEL

(Unless otherwise specified the distributions used in this section are from Maurice Leven, *The Incomes of Physicians.*)

Physicians in private practice	125
Salaried physicians	130
Dentists in private practice	145
Salaried dentists	10
Mechanical engineers	415
Federal professional personnel (Distribution of professional and scientific workers in various governmental departments holding full-time field positions within the continental limits of the United States. <i>Closing Report of Wage and Personnel Survey</i> , U. S. Personnel Classification Board, pp. 67-68.)	215
College professors (Based on three samples see <i>Bulletin No. 28</i> ,	

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GROUP OR SAMPLE	WEIGHT
Office of Education, U. S. Department of Interior; Yandell Henderson and Maurice R. Davie, <i>Income and Living Costs of the University Faculty</i> ; and <i>Teachers' Salaries in Certain Endowed and State Supported Colleges and Universities in the United States</i> by Trevor Arnett. The sample of the last-named study had to be adjusted for additional professional income besides teaching salaries and for the fact that the data were for 1926-27 instead of 1929. See also Leven, <i>The Incomes of Physicians</i> , p. 127.)	175
Male principals, superintendents, and teachers, city schools (Based on data of the National Education Association.)	95
Male superintendents in rural school systems (Based on data of the National Education Association.)	40
Congregational ministers (A tabulation made from 1929 <i>Year-book of Congregational and Christian Churches in the United States</i> adjusted for additional payments in kind, such as free rent and the like.)	100
Total (This is an attempt to obtain a distribution for the professional personnel irrespective of whether they were working on a salary or in independent practice. It is obvious that "professional personnel" is here used in a restricted sense; not all teachers, for instance, or all ministers listed in the Census of Occupations, are here considered as belonging to the professional class.)	1,450

### V. FEMALE SALARIED WORKERS AND WAGE EARNERS

Professional (Based on distributions for female high school teachers and private-duty nurses.)	69
Semi-professional (Based on distributions for private-duty nurses, kindergarten and elementary city school teachers, and rural school teachers.)	90
Routine clerical employees in private industries in 32 selected large cities ( <i>Salaries for Routine Clerical Work in Private Industry, 1929</i> , U. S. Personnel Classification Board, pp. 52-60.)	90
Routine clerical workers in other cities ( <i>Salaries for Routine Clerical Work in Private Industry, 1929</i> , U. S. Personnel Classification Board, pp. 52-60.)	101
Office employees in Massachusetts ("Salaries of Office Employees in Massachusetts, May 1, 1926," <i>Report of the Statistics of Labor for the Year Ending November 30, 1926</i> , Pt. III, <i>Labor Bulletin No. 149</i> .) The figures for 1926 were converted to 1929.)	10
Mercantile employees in New York City ("Hours and Earnings of Women in Five Industries," <i>State of New York Department of Labor Special Bulletin No. 121</i> . The figures are for 1923 but no adjustment was deemed necessary since according	

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GROUP OR SAMPLE	WEIGHT
to available data no significant changes in the average earnings of women took place between 1923 and 1929.) . . . . .	20
Mercantile employees in New York State outside New York City (Same source as for preceding group.) . . . . .	50
Mercantile employees outside of New York State (Based on foregoing two distributions. The adjustment is made by applying ratios of average earnings of employees in retail and wholesale trade outside of New York state to the average in New York State. The average earnings are taken from the Census of Distribution for 1930.) . . . . .	48
Salaried women in business and professions (Based on a study by Margaret Elliott and Grace E. Manson, <i>Earnings of Women in Business and the Professions</i> , Michigan Business Studies, Vol. III, No. 1.) . . . . .	26
Wage earners in manufacturing industries—composite distribution based on U. S. Bureau of Labor Statistics samples (See VI below.) . . . . .	100
Wages in manufacturing based on New York samples (Based on "Hours and Earnings of Women in Five Industries," <i>State of New York Department of Labor Special Bulletin No. 121</i> . The figures, which are for 1923, have been adjusted to represent roughly conditions in 1929.) . . . . .	85
Steam laundries (Based on New York City sample, "Hours and Earnings of Women Employed in Power Laundries in New York State," <i>State of New York Department of Labor Special Bulletin No. 153</i> .) . . . . .	70
Domestic and personal service (No samples are available to represent the very large number of women engaged in domestic and personal service. It was, however, assumed that earnings of these workers were all below \$1,000 and were distributed in accordance with the lower portion of the curve based on the samples for manufacturing, steam laundries, and mercantile employees.) . . . . .	241
Total (The distribution based on the indices in this section was combined with the distributions based on the samples from Ohio, Missouri, Oregon, and Texas in the same way as in II above.) . . . . .	1,000

VI. FEMALE WAGE EARNERS IN MANUFACTURING—COMPOSITE DISTRIBUTION BASED ON UNITED STATES BUREAU OF LABOR STATISTICS SAMPLES

(Unless otherwise specified the bulletins referred to in this section are those of the U. S. Bureau of Labor Statistics.)

Furniture ( <i>Bulletin No. 526</i> , pp. 48-53.) . . . . .	50
Foundries ( <i>Bulletin No. 522</i> , pp. 130-48.) . . . . .	10
Airplanes ( <i>Bulletin No. 523</i> , pp. 44-49.) . . . . .	5



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GROUP OR SAMPLE	WEIGHT
Iron and steel ( <i>Bulletin No. 513</i> , pp. 48, 67, 86, 98, 116, 134, 144, 168, 186, 200.)	20
Cotton-goods manufacturing ( <i>Bulletin No. 492</i> , pp. 47-52.)	150
Cotton-goods, weavers ( <i>Bulletin No. 492</i> , pp. 47-52.)	50
Woolen and worsted ( <i>Bulletin No. 487</i> , pp. 45-49.)	150
Woolen and worsted, weavers ( <i>Bulletin No. 487</i> , pp. 45-49.)	50
Men's clothing ( <i>Bulletin No. 503</i> , pp. 67-73.)	180
Boots and shoes ( <i>Bulletin No. 498</i> , pp. 88-95.)	100
Motor vehicles ( <i>Bulletin No. 502</i> , pp. 67-73.)	50
Hosiery ( <i>Bulletin No. 504</i> , pp. 71-76.)	100
Underwear ( <i>Bulletin No. 504</i> , pp. 71-76.)	75
Meat packing ( <i>Bulletin No. 472</i> , pp. 120-29.)	80
Pottery ( <i>Bulletin No. 412</i> , pp. 60-65.)	30
Paper and pulp ( <i>Bulletin No. 365</i> , pp. 101-19.)	15
Auto tires ( <i>Bulletin No. 358</i> , pp. 48-53.)	25
Power laundries, New York State ("Hours and Earnings of Women Employed in Power Laundries in New York State," <i>State of New York Department of Labor Special Bulletin No. 153.</i> )	100
Paper boxes, New York City ("The Paper Box Industry in New York City," <i>State of New York Department of Labor Special Bulletin No. 154.</i> )	60
<b>Total</b>	<b>1,300</b>

*Total income of farmers.* According to estimates of the United States Department of Agriculture the gross income from agricultural production in 1929 amounted to 11,918 million dollars. Expenses of operating the farms, including the cost of hired labor, depreciation, taxes, and interest and rent paid to non-farmers, aggregated 6,344 million dollars, leaving the farm operators a net income of 5,574 million dollars. To this may be added 380 million dollars to allow for the rental value of farmers' homes. The farmer's home is inseparable from the farm business and there is perhaps good justification to regard the rental value of the home as part of the income of the farm. The amount here allowed represents 5 per cent of the estimated value of farm dwellings.<sup>28</sup> The total net agricultural income of the farm operators in 1929 may, therefore, be placed at

<sup>28</sup> The 1930 Census reports a valuation of \$7,083,536,150 for 5,866,446 farms. The total number of farms is 6,288,648. Only 5 per cent of the valuation is allowed for rent because depreciation, taxes, and mortgage interest on farm dwellings were omitted from the Department of Agriculture calculations of income from agricultural production.

5,954 million dollars. This represents an average income per farm of approximately \$950.

Before we attempt to estimate the distribution of this group income among the millions of farmers, it is necessary to note that, from the standpoint of individual farmers, not all of the income was earned from operation; part of it came in the form of interest and rent from farms not operated by the recipients. Moreover, included in this amount is the income of some 56,000 manager-operated farms owned either by corporations or individuals who are not farmers by occupation.

The interest received from other farmers amounted to 187 million dollars, and the rent so received amounted to 372 million, making a total of 559 million.<sup>37</sup> Subtracting these inter-farmer payments from the total net farm income we find that the aggregate net income of individual farms was about 5,395 million dollars.

The 56,000 farms operated by farm managers comprised a considerable portion of the larger farming units. The average value of land and buildings for these farms in 1929 was \$40,052, while that for all farms put together was only \$7,614. The average value of farm products for the farm manager units amounted to somewhat more than \$7,000 per farm as compared with only about \$1,850 for the other units. The net income of farms operated by farm managers may be placed at about 60 million dollars. This estimate is made on the assumption that the net income of these farms bore approximately the same ratio to gross income as it did in the case of corporate agricultural enterprises. The same ratio, about 15 per cent of

<sup>37</sup> The Department of Agriculture estimates the mortgage debt on farms in 1929 as 9,440 million dollars, which at 6 per cent makes a total interest charge of 566 million dollars. Of this amount, about 75 per cent, or 425 million dollars, is included as an operating cost of farm operators. King estimates that in 1927 the interest payments by farmers to non-farmers amounted to 238 million dollars. Since the condition of the farm mortgage debt was practically unchanged between 1927 and 1929, we may accept King's estimate for 1927 as being applicable to 1929 as well. This would indicate that farmers received approximately 187 million dollars of the interest on farm mortgages. It is further estimated by the Department of Agriculture that 28 per cent of the farm rents are paid to farmers. For 1929 this percentage represents a total of about 372 million dollars. (The payment to non-farmers amounted to 953 million dollars.)

gross, is indicated also by an examination of the data for large-scale farms with gross incomes above \$30,000.<sup>88</sup>

The aggregate net agricultural income may, therefore, be further reduced to give us the sum of 5,335 million dollars as the net income from farming of the 6,233,000 independent operators reported by the census.

In addition to the income from farm operation, farmers received income from investments and employment off the farm. The inter-farmer investment income has already been estimated at 559 million dollars (see page 196). The income from investments outside of agriculture and the income from supplementary pursuits cannot be estimated with any degree of certainty. As will be seen later from the evidence gleaned from sample data for individual farms, we estimate that the 6 million operators who considered farming their main occupation had a total income from all sources of approximately 6.2 billion dollars in 1929. If we take the estimated net income of the same farmers from farm operation to be 5,250 million dollars,<sup>89</sup> we have left 950 million dollars as income from other sources. Since about 550 millions of this amount may be attributed to investments in agriculture, we conclude that the 6 million farmers received approximately 400 million dollars from work and investments outside of agriculture. It is reasonable to believe that the other 233,000 farm operators received a proportionately larger sum from non-farm sources, since with them farming was merely a side line.

*Distribution of income among farmers.* The distribution of the incomes of farmers was made the subject of a special study, which attempted to utilize the detailed distributions of the gross farm receipts ("Value of Farm Products") of nearly 6 million farm families tabulated in the 1930 Census of Agriculture. The adjusted distribution, excluding manager-operated farms, which are in a class by themselves, is shown in Table 24, page 198. Although the number of manager-operated farms was relatively

<sup>88</sup> The estimate of 60 million dollars is perhaps somewhat low since it would mean a return of only 2.7 per cent of the value of land and buildings and little more than 2.2 per cent of the value of all farm property of manager-operated farms. The estimate, however, is accurate enough for our purposes.

<sup>89</sup> This would give the 233,000 additional operators an average net farm income, including food and shelter off the farm, of \$365.

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24. ESTIMATED DISTRIBUTION OF FARMS ACCORDING TO VALUE OF FARM PRODUCTS IN 1929

Value of Farm Products (In dollars)	All Farms <sup>a</sup>	Manager- Operated Farms <sup>b</sup>	Farms Oper- ated by Own- ers and Tenants <sup>c</sup>
Under 250.....	416,649	2,902	413,747
250 to 400.....	542,964	2,079	540,885
400 to 600.....	802,990	2,915	800,075
600 to 1,000.....	1,305,637	5,275	1,300,362
1,000 to 1,500.....	983,051	5,443	977,608
1,500 to 2,500.....	1,028,385	8,177	1,020,208
2,500 to 4,000.....	658,231	8,027	650,204
4,000 to 6,000.....	305,123	6,082	299,041
6,000 to 10,000.....	154,864	5,557	149,307
10,000 to 20,000.....	64,571	4,816	59,755
20,000 to 40,000.....	21,523	3,795	17,728
40,000 to 50,000.....	1,323	233	1,090
50,000 to 60,000.....	801	141	660
60,000 to 70,000.....	565	100	465
70,000 to 80,000.....	387	68	319
80,000 to 90,000.....	301	53	248
90,000 to 100,000.....	227	40	187
100,000 to 150,000.....	562	99	463
150,000 to 200,000.....	212	37	175
200,000 to 300,000.....	161	28	133
300,000 to 400,000.....	59	11	48
400,000 to 500,000.....	17	3	14
500,000 to 1,000,000.....	35	6	29
1,000,000 and over.....	10	2	8
Total.....	6,288,648	55,889	6,232,759
Total value (in millions)...	\$11,919	\$393 <sup>d</sup>	\$11,526 <sup>d</sup>
Average value.....	\$ 1,895	\$7,032	\$ 1,849

<sup>a</sup> Classification to \$20,000 based on *Fifteenth Census of the United States, 1930, Agriculture, Type of Farm*, Vol. IV, Chap. XIV; classification \$20,000 and over based on R. D. Jennings, *Large-Scale Farming in the United States, 1929* (monograph of the *Fifteenth Census of the United States, 1930*), p. 31, adjusted to include all farms.

<sup>b</sup> Special tabulation from Census Count Sheet 10, Card A, by permission of the U. S. Bureau of the Census.

<sup>c</sup> Excludes manager-operated farms.

<sup>d</sup> Estimated from the distribution.

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## 25. DISTRIBUTION OF INCOME AMONG FARMERS, 1929

Income <sup>a</sup> (In dollars)	Net Farm Income for Specified Amounts of Gross Farm Income <sup>b</sup>	Cumulative Percentages of Farm Operators Distributed According to			
		Value of Farm Products <sup>c</sup>	Net Farm Income <sup>d</sup>		Total Net Income of Operator <sup>e</sup>
			All Farm Operators <sup>g</sup>	"Farmers" Only <sup>f</sup>	
Under 0.....	...	...	1.35 <sup>h</sup>	1.40	1.00
Under 250.....	\$115	6.64	33.20	31.47	21.36
Under 400.....	200	15.32	42.30	40.10	30.01
Under 500.....	260	28.15	50.25	48.30	38.26
Under 600.....	320	49.02	70.60	69.50	63.42
Under 1,000.....	540	64.70	84.60	84.00	80.17
Under 1,500.....	800	...	91.70	91.40	88.77
Under 2,000.....	1,040	81.07	95.50	95.30	93.84
Under 2,500.....	1,250	...	97.00	96.88	96.12
Under 3,000.....	1,430	98.05	98.05	97.97	97.34
Under 3,500.....	1,660	91.50	98.78	98.73	98.26
Under 4,000.....	1,830	...	99.17	99.13	98.84
Under 4,500.....	2,030	...	99.41	99.39	99.21
Under 5,000.....	2,190	96.30	99.68	99.67	99.57
Under 6,000.....	2,500	...	99.83	99.82	99.76
Under 7,000.....	2,800	...	99.91	99.90	99.86
Under 8,000.....	3,080	...	99.94	99.94	99.91
Under 9,000.....	3,350	98.70	99.96	99.96	99.94
Under 10,000.....	3,600	...	99.99	99.99	99.99
Under 15,000.....	4,700	99.65			
Under 20,000.....	5,600	...			
Under 25,000.....	6,300	...			
Under 30,000.....	7,100	...			
Under 40,000.....	8,300	99.94			
Under 50,000.....	9,200	99.96			
Under 60,000.....	10,000	99.97	100.00	100.00	100.00
Under 100,000.....	12,000	99.99			

<sup>a</sup> This is a condensed classification. Original computations were made in smaller class intervals.

<sup>b</sup> On the frequency distribution curve.

<sup>c</sup> Exclusive of farms operated by farm managers. See Table 24, p. 198. The entries correspond to class intervals used by the census. Hence there are some blanks.

<sup>d</sup> Includes allowance for rental value of farm homes. The rental values corresponding to different income levels have been estimated from the data for Livingston and Tompkins Counties, N. Y., and for Grayson and Laurel Counties, Ky.

<sup>e</sup> All farms reported by the Census of Agriculture except those operated by farm managers.

<sup>f</sup> Those who considered farming their main occupation. 6,012,000 were so reported in the Occupation Statistics of the Census as of Apr. 1, 1930. For purposes of this study the number for 1929 was rounded to 6 million, or 233,000 less than the total for the preceding column. It was assumed that the net farm incomes of these 233,000 operators were all between zero and \$500, and they were so pro rated.

<sup>g</sup> This distribution refers to the 6 million farmers; it was obtained from the distribution of net farm incomes shown in the preceding column. The transformation was made by the formula  $y = .85 + 1.07x$ , in which  $y$  is the total net income of the farmer and  $x$  is the net farm income.

<sup>h</sup> Rough estimate based on U. S. Department of Agriculture sample. See *Yearbook of Agriculture*, 1932, p. 895. In making this estimate allowance was made for additional income from produce, fuel, and shelter furnished by the farm.

<sup>i</sup> Changes from class to class are too small to record.

small, it included a considerable proportion of the larger farms. To have left them in would obviously have given an erroneous picture of the receipts of "farmers."

The problem was to transform the census distribution, which represented approximately the gross farm incomes, into a distribution of net income. This involved the development of net income equivalents for the different readings on the income scale of the distribution of gross incomes. For this purpose the pertinent data collected by the United States Department of Agriculture and state agricultural experiment stations in connection with farm management studies were analyzed. The analysis consisted of correlating the distribution of net farm incomes with the distribution of gross farm incomes for the various samples. In addition, the analysis aimed to establish relationships between farm incomes and the rental value of farm homes on the one hand and the total net income of farm operators on the other. The information regarding house rent was necessary in order to adjust the census figures, which included an allowance for produce off the farm consumed by the farm family but none for the rental value of the farm house.

In the case of samples for which data were available for individual farms, the correlations were made on the basis of arrays rather than individual items. In other words, since the problem was to discover the relationship between net and gross income for farm operators as a group, the correlation desired was between corresponding readings of net and gross income on frequency distribution curves rather than between net and gross income for individual farms.<sup>40</sup>

The results of the study of the distribution of farm incomes are summarized in Table 25. The equivalents of net farm income for specified amounts of gross farm income shown in the first column of the table have been read from a curve incorporating the findings from an analysis of the experience of individual farmers in nine samples and the results of various

<sup>40</sup> The difference between the two problems in correlation becomes apparent when we analyze the questions asked in each case. In ordinary correlation the question asked is substantially as follows: Given  $x$ , which is the value of a certain characteristic in a specific individual  $A$ , what is the value of  $y$  for the same individual? In our problem, however, we do not wish to find the value of  $y$  for the same individual for whom  $x$  is known; we wish to reconstruct the distribution of values of this char-

studies whose original material was not available for special analysis. Among the latter were studies of farm accounts in Minnesota, Ohio, Illinois, Michigan, Utah, and North Carolina. The samples subjected to special analysis are as follows:<sup>42</sup>

- Three counties in Ohio—300 farm families, 1926. (Study by E. L. Kirkpatrick and H. W. Hawthorne. See *Sources and Uses of Income Among 300 Farm Families in Vinton, Jackson, and Meigs Counties, Ohio, 1926*, U. S. Department of Agriculture, May 1928.)
- Laurel County, Kentucky—203 farm families, 1927-28. (Study by W. D. Nichols and H. W. Hawthorne. See "Farm Management and Incomes of Farm Families in Laurel County, Kentucky," *Kentucky Agricultural Experiment Station Bulletin No. 305* [1930], University of Kentucky.)
- Grayson County, Kentucky—138 farm families, 1928. (Study by W. L. Rouse, H. W. Hawthorne, and Z. L. Galloway. See "Farm Organization and Management in Grayson County," *Kentucky Agricultural Experiment Station, Bulletin No. 317* [1931], University of Kentucky; also *Bulletin No. 316*.)
- Scattered areas in Vermont—42 farm families, 1929. (Study by Marianne Muse. See *Vermont Agricultural Experiment Station, Bulletin No. 340* [1932].)
- Tompkins County, New York—195 farm families, 1927-28. (Study by Helen Canon. See "The Family Finances of 195 Farm Families in Tompkins County, New York, 1927-28," *Cornell University Agricultural Experiment Station Bulletin No. 522* [May 1931].)
- North Livingston County, New York—269 farm families, 1928-29. See *Cornell University Extension Station Bulletin No. 539*.
- Scattered areas in Indiana—617 farm families, 1929. (Study by Department of Farm Management, Purdue University. Transcripts of farm

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acteristic for the entire group. The question in this case is: Given  $x$ , which is the value of a specified position on the distribution curve of the first characteristic, what is the value of  $y$  occupying the same relative position on the distribution curve of the second characteristic? In other words, if we know, for instance, that the 25th farm in the array of gross incomes shows a gross income of \$500, what is the net income of the 25th farm in the array of net incomes? The two methods of correlation give different results. For the same sets of data and for linear correlation, the slope of the line of regression obtained from correlation by arrays is greater than that of the line of regression based on paired items for individual members in the group. In correlation by arrays the  $y$  values are not averaged as they are in regular Pearsonian correlation; they are aligned individually in the same order as the  $x$  values. This tends to revolve the regression line counter-clockwise, by pulling the portion below the average down and pushing the portion above the average up.

<sup>42</sup> The discussion of the samples and the detailed results of the analysis must be reserved for special treatment.

accounts furnished by Professor O. G. Lloyd, Purdue University, and George Collier of the U. S. Department of Agriculture.)

Scattered areas for Iowa—631 farm families, 1929. (Study by Agricultural Economics Section of Iowa State College of Agriculture and Mechanic Arts. Transcript of farm accounts furnished by Professor John A. Hopkins.)

Six counties in Wisconsin—662 farm families, 1929. (From transcripts of Farm Business Analysis Studies for Portage, Waupaca, Green, Langlade, Sawyer, and Dane Counties. Farm Management Division, Bureau of Agricultural Economics, U. S. Department of Agriculture, Courtesy of W. J. Roth.)

The regression lines showing the relationship between the distributions of net and gross farm income for the several samples showed a distinct tendency toward parallelism although there were considerable differences in the position of the lines in relation to the  $x$ -axis. In other words, the differences among the equations representing the different samples were more in the constants, or  $y$  intercepts, than in the slopes. (For the small-scale farms within the range of the samples the slopes tended to be from about 68 to 70 per cent.) This is readily explained by the fact that for different types of farming there are different minimum expenses.

Since the number of samples was too small to cover all the important types of farming in the United States it is apparent that the weighting of the individual results for the purpose of obtaining a composite curve could not be very precise. An empirical method employing varying weights at different amounts of gross income was used. For instance, greater weights were given the Allegheny samples—Laurel and Grayson Counties in Kentucky—in the lower incomes than in the higher. The weights were determined roughly on the basis of the census distributions of the value of farm products by types of farms.

The samples did not extend into the higher incomes and, in order to determine the direction of the composite curve of relationship between net and gross incomes beyond the points covered, use was made of the income tax statistics for farm corporations and of the work of R. D. Jennings in his analysis of 7,875 large-scale farms.<sup>42</sup> The income statistics pointed to the fact that for the corporate farms the net income in 1929 was

<sup>42</sup> "Large-Scale Farming in the United States, 1929" (monograph of the *Fifteenth Census of the United States*).



approximately 15 per cent of sales. Approximately the same percentage appeared to apply also to the large-scale farms analyzed by Jennings. The average value of the farm products for these farms was \$63,409, which together with an estimated net farm income of \$9,500 was used as a point on the curve.

In the analysis of the samples, gross income was taken to include an allowance for the consumption by the farm family of food and fuel produced on the farm and for the rental value of the farm home. While produce consumed was included in the census definition of the value of farm products, shelter was not. Consequently before the data furnished by the census could be used for our purpose they had to be adjusted for house rent. The adjustment was made on the basis of the value of farm dwellings, reported by the census, and the estimates for individual farms appearing on the sample records. Rental value of farmers' homes has thus been included in the net incomes shown in the last three columns of Table 25, page 199.

The basis for the transformation of the distribution of net farm income into that of total income of the farm operators is, like the other estimates, tentative, and may be revised considerably when further evidence becomes available. On the basis of correlation analyses of the data for five of the samples listed on page 201, we estimate that the relationship between the distribution of total income of farm operators from all sources and net farm income (only positive incomes considered) may be represented by the formula  $y = \$85 + 1.07x$ .<sup>48</sup>

<sup>48</sup> The equations for the five samples are:

Livingston County, N.Y. . . . .	$y = \$125 + 1.06 x$
Tompkins County, N.Y. . . . .	$y = \$100 + 1.05 x$
Grayson County, Ky. . . . .	$y = \$ 75 + 1.03 x$
Laurel County, Ky. . . . .	$y = \$ 50 + 1.24 x$
Ohio families (pertinent part of sample only) . . . . .	$y = \$125 + 1.17 x$

Of these samples that for Ohio represents a poor farm area in which farming is carried on to a large extent by part-time farmers. The same may be said with respect to the sample for Laurel County, which contained an unusually large proportion of individuals with outside occupations.

**V. THE DISTRIBUTION OF PERSONAL INCOMES IN 1929**

The estimates obtained by the three methods described in the preceding section of this appendix are shown in Table 26, page 205. Although the comparison of the estimates in itself cannot establish which of the three distributions most accurately describes the situation in 1929, it nonetheless gives us some assurance that our independently compiled estimates may be accepted as being not too far wrong. In general this distribution conforms reasonably well to that derived from the 1921 data, and for incomes above \$2,000 it, for the most part, agrees also with the distribution derived from the 1918 data. Tables 27 and 28, pages 206 and 207, show the independent estimates in terms of cumulative as well as simple distributions and also computations of the amount of income in each income class.

It appears from the estimates that nearly 40 per cent of the income recipients, or close to 20 million persons, received incomes of less than \$1,000 in 1929. More than 10 per cent, or about 5 million participants in the production of the national income, received less than \$500 each as their share in the year's product. The median income was approximately \$1,200. The class between \$1,000 and \$2,000 comprised 41 per cent of the income recipients and somewhat less than 31 per cent of the aggregate income, including profits from the sale of property. Only 19 per cent of the income recipients had incomes exceeding \$2,000 and only 5 per cent received incomes in excess of \$4,000. Those having incomes greater than \$5,000 constituted 3.6 per cent of the total number of income recipients and accounted for 33.8 per cent of the aggregate income. Those with incomes of more than \$10,000 comprised only 1.3 per cent of the total number but they controlled 25.5 per cent of the income.

We should note at this point that the total income obtained by summing the estimates of the different income classes in the distribution is about 92,950 million dollars, whereas the aggregate income distributed by states in Chapter IV is 91,385 million dollars.<sup>44</sup> It is, of course, not to be expected that two estimates reached by entirely different methods should be exactly the same. In this case the difference between the totals

<sup>44</sup> See p. 168.

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### 26. COMPARISON OF THREE ESTIMATES OF THE DISTRIBUTION OF PERSONAL INCOMES IN 1929

Income Class (In dollars)	Number of Income Recipients (In thousands)			Percentage of Income Recipients		
	Independent Estimate for 1929 <sup>a</sup>	Based on Distribution for 1921 <sup>b</sup>	Based on Distribution for 1918 <sup>c</sup>	Independ- ent Estimate for 1929 <sup>a</sup>	Based on Distribution for 1921 <sup>b</sup>	Based on Distribution for 1918 <sup>c</sup>
Under 0 ..	177	177	177	0.36	0.36	0.36
0 to 500 ..	4,898	6,097	2,403	9.99	12.43	4.90
500 to 1,000 ..	14,431	12,227	11,936	29.42	24.93	24.34
1,000 to 1,500 ..	12,282	11,656	15,734	25.04	23.77	32.08
1,500 to 2,000 ..	7,825	8,333	8,591	15.95	16.99	17.52
2,000 to 2,500 ..	3,750	4,384	3,660	7.65	8.94	7.46
2,500 to 3,000 ..	1,599	1,984	1,931	3.26	4.04	3.94
3,000 to 3,500 ..	960	966	1,119	1.96	1.97	2.28
3,500 to 4,000 ..	608	639	730	1.24	1.30	1.49
4,000 to 4,500 ..	416	456	520	0.85	0.93	1.06
4,500 to 5,000 ..	310	343	402	0.63	0.70	0.82
5,000 to 6,000 ..	416	451	456	0.85	0.92	0.93
6,000 to 7,000 ..	280	274	314	0.57	0.56	0.64
7,000 to 8,000 ..	190	186	201	0.39	0.38	0.41
8,000 to 9,000 ..	139	132	147	0.28	0.27	0.30
9,000 to 10,000 ..	106	96	118	0.22	0.20	0.24
10,000 to 15,000 ..	283	257	284	0.58	0.52	0.58
15,000 to 20,000 ..	122	115	113	0.25	0.23	0.23
20,000 to 25,000 ..	67	67	52	0.14	0.14	0.11
25,000 to 30,000 ..	40	42	37	0.08	0.09	0.08
30,000 to 40,000 ..	46	50	38	0.09	0.10	0.08
40,000 to 50,000 ..	25	27	20	0.05	0.06	0.04
50,000 to 100,000 ..	44	50	36	0.09	0.10	0.07
100,000 and over ..	27	32	22	0.06	0.07	0.04
All classes .....	49,041	49,041	49,041	100.00	100.00	100.00

<sup>a</sup> Based on distribution of wages, salaries, professional incomes, and on income tax data for 1929. See note c, Table 27, p. 206.

<sup>b</sup> Based on unpublished distribution made by King for 1921.

<sup>c</sup> Based on Macaulay's distribution for 1918. See *Income in the United States*, National Bureau of Economic Research, Vols. 1 and 2.

is less than 2 per cent, which is well within the range of error of either of the two estimates.

While for some purposes the smaller total would appear to be more accurate it is doubtful if adjusting our estimates by income classes to that sum would give us a more accurate distribution of personal incomes in 1929. It will be recalled that the smaller total is based primarily upon the Department of Commerce estimates of "national income," which did not include income resulting from graft, non-payment of debts, and illegal activities.<sup>45</sup> Graft, when paid out of business, represents a division of the product of industry in much the same ways as

<sup>45</sup> See note 26, p. 168.

27. ESTIMATED DISTRIBUTION OF ALL PERSONAL INCOMES  
IN THE UNITED STATES, 1929<sup>a</sup>

Income Class (In dollars)	Total in Each Class		Cumulative Total in Given Class and All Classes Below		Cumulative Total in Given Class and All Classes Above	
	Number of Persons	Amount of In- come (In millions of dollars)	Number of Persons	Amount of In- come (In millions of dollars)	Number of Persons	Amount of In- come (In millions of dollars)
Under 0 <sup>b</sup>	177,000	-1,059	177,000	-1,059	49,041,000	92,950
0 to 500 <sup>c</sup>	4,898,600	1,691	5,075,600	632	48,864,000	94,009
500 to 1,000 <sup>c</sup>	14,430,600	10,971	19,506,200	11,603	43,965,400	92,318
1,000 to 1,500	12,282,000	15,171	31,788,200	26,774	29,534,800	81,347
1,500 to 2,000	7,825,100	13,508	39,613,300	40,282	17,252,800	66,176
2,000 to 2,500	3,749,700	8,322	43,363,000	48,604	9,427,700	52,668
2,500 to 3,000	1,598,800	4,353	44,961,800	52,957	5,678,000	44,346
3,000 to 3,500	960,500	3,103	45,922,300	56,060	4,079,200	39,993
3,500 to 4,000	608,400	2,272	46,530,700	58,332	3,118,700	36,890
4,000 to 4,500	416,100	1,764	46,946,800	60,096	2,510,300	34,618
4,500 to 5,000	309,700	1,468	47,256,500	61,564	2,094,200	32,854
5,000 to 6,000	416,020	2,273	47,672,520	63,837	1,784,500	31,386
6,000 to 7,000	279,800	1,810	47,952,320	65,647	1,368,480	29,113
7,000 to 8,000	189,900	1,419	48,142,220	67,066	1,088,680	27,303
8,000 to 9,000	139,200	1,180	48,281,420	68,246	898,780	25,884
9,000 to 10,000	105,750	1,003	48,387,170	69,249	759,580	24,704
10,000 to 15,000	283,195	3,427	48,670,365	72,676	653,830	23,701
15,000 to 20,000	122,446	2,107	48,792,811	74,783	370,635	20,274
20,000 to 25,000	66,623	1,483	48,859,434	76,266	248,189	18,167
25,000 to 30,000	40,043	1,093	48,899,477	77,359	181,566	16,684
30,000 to 40,000	45,830	1,578	48,945,307	78,937	141,523	15,591
40,000 to 50,000	25,008	1,114	48,970,315	80,051	95,693	14,013
50,000 to 100,000	43,825	2,999	49,014,140	83,050	70,685	12,899
100,000 and over	26,860	9,900	49,041,000	92,950	26,860	9,900
All classes.....	49,041,000	92,950	49,041,000	92,950	49,041,000	92,950

<sup>a</sup> Estimated on the basis of sample distributions of occupational earnings and income tax statistics and census distribution of value of farm products. For description of process, see pp. 184-203. The figures include profits from the sale of property.

<sup>b</sup> This is a very rough estimate. The negative incomes are due chiefly to losses from the sale of property.

<sup>c</sup> Division of the number of income recipients as between zero to \$500, and \$500 to \$1,000 is highly tentative. It is not unlikely that some million income recipients should be shifted from the \$500 to \$1,000 class to the zero to \$500 class.

wages, salaries, interest, and the like. To that extent it is both "national income" and "personal income." When graft is paid by individuals out of their own incomes it does not represent additional national income, but it is likely to add to the aggregate of individual incomes. In either case income from this source is apt to cause a discrepancy between the computation of the aggregate income of individuals and the estimated total of national income. The non-payment of debts is more or less in the same position as graft. Whether the creditor is a business

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### 28. PERCENTAGE DISTRIBUTION OF ALL PERSONAL INCOMES IN THE UNITED STATES, 1929<sup>a</sup>

Income Class (In dollars)	Total in Each Class		Cumulative Totals			
			In Given Class and All Classes Below		In Given Class and All Classes Above	
	Persons	Income	Persons	Income	Persons	Income
Under 0...	0.36	-1.14	0.36	-1.14	100.0000	100.00
0 to 500...	9.99	1.82	10.35	0.68	99.6400	101.14
500 to 1,000...	29.42	11.80	39.77	12.48	89.6500	99.32
1,000 to 1,500...	25.04	16.32	64.81	28.80	60.2300	87.52
1,500 to 2,000...	15.96	14.53	80.77	43.33	35.1900	71.20
2,000 to 2,500...	7.65	8.95	88.42	52.28	19.2300	56.67
2,500 to 3,000...	3.26	4.68	91.68	56.96	11.5800	47.72
3,000 to 3,500...	1.96	3.34	93.64	60.30	8.3200	43.04
3,500 to 4,000...	1.24	2.44	94.88	62.74	6.3600	39.70
4,000 to 4,500...	0.85	1.90	95.73	64.64	5.1200	37.26
4,500 to 5,000...	0.63	1.58	96.36	66.22	4.2700	35.36
5,000 to 6,000...	0.85	2.44	97.21	68.66	3.6400	33.78
6,000 to 7,000...	0.570	1.95	97.78	70.61	2.7900	31.34
7,000 to 8,000...	0.387	1.53	98.167	72.14	2.2200	29.39
8,000 to 9,000...	0.284	1.27	98.451	73.41	1.8330	27.86
9,000 to 10,000...	0.216	1.08	98.667	74.49	1.5490	26.59
10,000 to 15,000...	0.577	3.69	99.244	78.18	1.3330	25.51
15,000 to 20,000...	0.250	2.27	99.494	80.45	0.7560	21.82
20,000 to 25,000...	0.136	1.59	99.630	82.04	0.5060	19.55
25,000 to 30,000...	0.0817	1.18	99.7117	83.22	0.3700	17.96
30,000 to 40,000...	0.0934	1.70	99.8051	84.92	0.2883	16.78
40,000 to 50,000...	0.0510	1.20	99.8561	86.12	0.1949	15.08
50,000 to 100,000...	0.0892	3.23	99.9453	89.35	0.1439	13.88
100,000 and over...	0.0547	10.65	100.0000	100.00	0.0547	10.65
<b>Total.....</b>	<b>100.0000</b>	<b>100.00</b>	<b>100.0000</b>	<b>100.00</b>	<b>100.0000</b>	<b>100.00</b>

<sup>a</sup> Based on Table 27. Includes profits from the sale of property.

concern or an individual the debtor who defaults has presumably received income which theoretically should be accounted for in the distribution. If the creditor is a business concern the amount written off as bad debts is included in the cost of the product and the debtor presumably receives part of the national income. If the creditor is an individual he may subtract it from his own income<sup>40</sup> but it is doubtful if the deduction is properly reflected in our basic data. The transfers of income through fraud, theft, and robbery, if they could be accounted for, would also give rise to discrepancies between the total national income and the aggregate income of individuals.

We do not, of course, presume that the distribution of personal incomes shown in Tables 27 and 28 adequately accounts

<sup>40</sup> The deduction is permissible on income tax returns.

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## 29. ESTIMATED INCOME OF INDIVIDUALS EXCLUSIVE OF GAINS FROM THE SALE OF PROPERTY, BY INCOME CLASSES, BY 1929\*

Income Class <sup>a</sup> (In dollars)	Amount (In millions of dollars)		Percentage of Total	
	In Each Class	In Each Class and All Preceding Classes	In Each Class	In Each Class and All Preceding Classes
Under 0...	-220	-220	-0.25	-0.25
0 to 500...	1,685	1,465	1.94	1.69
500 to 1,000...	10,922	12,387	12.59	14.28
1,000 to 1,500...	15,089	27,476	17.39	31.67
1,500 to 2,000...	13,423	40,899	15.47	47.14
2,000 to 2,500...	8,263	49,162	9.53	56.67
2,500 to 3,000...	4,318	53,480	4.98	61.65
3,000 to 3,500...	3,076	56,556	3.54	65.19
3,500 to 4,000...	2,250	58,806	2.60	67.79
4,000 to 4,500...	1,739	60,545	2.00	69.79
4,500 to 5,000...	1,438	61,983	1.66	71.45
5,000 to 6,000...	2,208	64,191	2.54	73.99
6,000 to 7,000...	1,731	65,922	2.00	75.99
7,000 to 8,000...	1,338	67,260	1.54	77.53
8,000 to 9,000...	1,103	68,363	1.27	78.80
9,000 to 10,000...	918	69,281	1.06	79.86
10,000 to 15,000...	3,083	72,364	3.55	83.41
15,000 to 20,000...	1,839	74,203	2.12	85.53
20,000 to 25,000...	1,270	75,473	1.47	87.00
25,000 to 30,000...	910	76,383	1.05	88.05
30,000 to 40,000...	1,287	77,670	1.48	89.53
40,000 to 50,000...	878	78,548	1.01	90.54
50,000 to 100,000...	2,243	80,791	2.59	93.13
100,000 to 500,000...	2,287	83,078	2.63	95.76
500,000 to 1,000,000...	967	84,045	1.12	96.88
1,000,000 and over.....	2,707	86,752	3.12	100.00
All classes.....	86,752	86,752	100.00	100.00

\* No attempt has been made to shift individuals from class to class because of the deduction of profits from the sale of property. Hence the classification in this table is mixed; that is, the class limits are inclusive of capital gains while the totals are not. To compute the totals in the first column, estimates of the profits from the sale of property were subtracted from the figures given in the second column of Table 27, p. 206. The estimated total profits from the sale of property as given on pp. 166-67 were distributed by income classes in accordance with the income tax figures. For classes under \$5,000 the estimates were based on ratios to total income as explained in note 25 p. 167.

for the different items mentioned above, but it would appear that there is sufficient basis for the total to be higher than that shown in Chapter IV. The discrepancy between the two estimates may be explained by assuming that the total distributed by income classes is more inclusive in its coverage than the total distributed by states.

We should again call attention to the fact that the distribution contains profits from the sale of property, which may or may not be considered as income, depending upon the point of view and upon the purpose for which the figures are to be used. The major portion of these profits was in the higher incomes. While it is impossible to disentangle completely the effects of including capital gains, rough estimates exclusive of these profits are presented in Table 29. The adjustments were accomplished by subtracting the estimated profits from the different income classes. It should be stated that the class limits have not been corrected.

*Earnings and income of selected groups.* It is not feasible to present in this appendix all the intermediate data developed in the process of estimating the distribution of personal incomes in 1929. However, in order to advance the major analysis of our study a few groups are chosen for special consideration and comparison. The groups to be considered briefly in the following pages, in addition to the final estimate of the distribution of all income recipients, are: Farmers, non-farm entrepreneurs, professional and executive personnel, male employees, and female employees and professional practitioners.

Since the groups have been set up primarily for the purpose of obtaining the final estimates of the distribution of income recipients as a whole, they are of necessity somewhat artificial. The classifications had to follow, and therefore reflect, the limitations of the data. Thus in these groupings farmers and non-farm entrepreneurs include females as well as males. However, when we come to the professional and executive group, the calculation is confined to males alone, the females in the professions and in the higher executive positions being treated under the combined grouping of employees and professional practitioners. Moreover, the male professional and executive group is a mixture of independent practitioners and employees, which leaves the final group, male employees, an incomplete

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30. PERCENTAGE DISTRIBUTION OF NET INCOME AMONG FARMERS, 1929<sup>a</sup>

Income Class (In dollars)	Net Farm Operating Income		Total Net Income of Farm Operators		
	Farmers in Each Class	Farmers in Each Class and All Classes Below <sup>b</sup>	Farmers in Each Class	Farmers in Each Class and All Classes Below <sup>b</sup>	Income in Each Class
Under 500.....	40.10	40.10	30.01	30.01	8.58
500 to 1,000...	29.40	69.50	33.41	63.42	23.39
1,000 to 1,500...	14.50	84.00	16.75	80.17	19.90
1,500 to 2,000...	7.40	91.40	8.60	88.77	14.40
2,000 to 2,500...	3.90	95.30	5.07	93.84	11.05
2,500 to 3,000...	1.58	96.88	2.28	96.12	6.09
3,000 to 3,500...	1.09	97.97	1.22	97.34	3.83
3,500 to 4,000...	0.76	98.73	0.92	98.26	3.33
4,000 to 4,500...	0.40	99.13	0.58	98.84	2.40
4,500 to 5,000...	0.26	99.39	0.37	99.21	1.73
5,000 to 6,000...	0.28	99.67	0.36	99.57	1.91
6,000 to 7,000...	0.15	99.82	0.19	99.76	1.23
7,000 to 8,000...	0.08	99.90	0.10	99.86	0.71
8,000 to 9,000...	0.04	99.94	0.05	99.91	0.44
9,000 to 10,000...	0.02	99.96	0.03	99.94	0.27
10,000 to 15,000...	0.03	99.99	0.05	99.99	0.52
15,000 to 60,000...	0.01	100.00	0.01	100.00	0.22

<sup>a</sup> The 6 million farmers who considered farming their main occupation.

<sup>b</sup> See Table 25, p. 199.

class. In the main, however, the groupings follow the lines of cleavage in the economic composition of the population with sufficient accuracy to merit special consideration.<sup>47</sup>

<sup>47</sup> It is well to note here that it is not possible in any case to set up clean-cut categories. It is, for instance, impossible to tell precisely how many farmers there are in the country. We have not even an adequate definition of a farmer. The difficulty of defining farmers as distinct from other occupational or economic classes has become more difficult of late on account of the increase in the number of part-time farmers and of persons owning farms although they gain their livelihood in other fields. Thus, too, it is impossible to count with precision the number of professional people, or to distinguish between wage earners and salaried workers. The classification must, therefore, be arbitrary. In this study the main concern was to account for all the "gainfully employed" with-



*Farmers.* It is estimated that the 6 million farm operators who considered farming their main occupation had an aggregate operating income in 1929 of 5,250 million dollars, or \$875 per farmer. This included an allowance, at farm prices, for the farm products consumed by the farm families and for the rental value of farm homes. In addition, the farmers received income from rent and interest and from labor off the farm amounting to somewhat less than one billion dollars, which raised the total to approximately 6.2 billion dollars and the average to \$1,033.<sup>48</sup>

The distribution of income among farmers is indicated in Table 30, page 210. It will be seen that approximately 40 per

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out duplication. As far as our final results are concerned it mattered little whether the border-line cases were placed in one category or the other.

<sup>48</sup>As shown in the preceding section of this appendix, the farmers' income from agriculture in 1929, including the allowance for house rent and for produce consumed, totalled about 5,950 million dollars. However, not all of this amount was earned by individual farmers in the operation of their own farms. A part represented inter-farmer rent and interest and a part constituted the income of agricultural corporations and of individual operators whose main occupation was not farming. The Census of Agriculture, as of April 1, 1930, reported 6,289,000 farms. About 56,000 were operated by farm managers and, since the Census of Occupations reports only 6,012,000 farm operators as of the same date, it is assumed that the operators of the unaccounted for farms reported themselves not as farmers but in other occupations. For 1929 we have taken 6 million as the number of operators whose main occupation was farming. (See note f, Table 25, p. 199.)

Since the allowance for rent and produce consumed by farm families has been computed at farm prices, the resultant estimates of farmers' incomes still leave the farmers in a somewhat different position than city dwellers in respect to real income. On the basis of a study by C. E. Lively, "Family Living Expenditures on Ohio Farms," *Ohio Agricultural Experiment Station Bulletin 468*, it is estimated that city prices of farm produce were on the average about 60 per cent higher than farm prices. If an equalization were attempted, the average farm income would be raised by approximately \$200. It is, however, not fair to equalize for one part of the cost of living and not for the other: for some goods and services the differential price advantage is definitely in favor of the city. In general it may be said that it is only at the subsistence level that the cost of living is lower on the farm. For a more generous standard providing the same types of goods and services as in the city, it is doubtful if a dollar on the farm would purchase any more than in urban centers. On the other hand, it is significant to note that a very large proportion of the farmers were at or near the subsistence level.

cent of the farmers had an operating income of less than \$500 and that nearly 70 per cent had operating incomes of less than \$1,000. When we turn to the columns showing the income from all sources we find that 30 per cent of the farmers were in the class below \$500. These 30 per cent received less than 9 per cent of the total income of the farm group. Incomes below \$1,000 from all sources comprised somewhat more than 63 per cent of the farmers and incomes from \$1,000 to \$2,000 included about 25 per cent, so that little more than 11 per cent of the group had incomes in excess of \$2,000. Further, it appears that only about 47,000 of the 6 million farmers had incomes in excess of \$5,000.

*Non-farm entrepreneurs.* A good indication of the economic status of non-farm entrepreneurs is furnished by the recent Census of Retail Distribution, which tabulates 1,543,000 retail stores according to size. The "active proprietor-owners" of these stores numbered 1,511,000, or about 58 per cent of all non-agricultural entrepreneurs outside of professions.

More than 419,000 of the stores had sales of less than \$5,000 each in 1929. An additional 254,000 had sales between \$5,000 and \$10,000, making a total of 674,000 with sales of less than \$10,000. In fact about 50 per cent of all the retail stores sold less than \$12,000 of merchandise each. The largest stores were owned by corporations, as is evidenced by the fact that, although numerically the corporate units constituted less than 16 per cent of the total number, they accounted for more than 48 per cent of the sales. With the corporate enterprises eliminated, it is estimated that about 52 per cent of the remaining establishments had sales of less than \$10,000 each, and that about 32 per cent had sales of less than \$5,000. The volume of sales imposes a definite limit upon profits and business income. The average profits for all retail establishments were less than 2 per cent of sales and, together with the interest upon the owners' investment, the average rate of return could not have exceeded 3 per cent of sales. On the assumption that the storekeeper who sells \$10,000 worth of merchandise in a year could, if employed elsewhere, command the salary of an average employee in retail trade, and that his labor earnings would therefore tend to equal that amount, we estimate that his total earnings from

his business probably did not exceed \$1,600.<sup>40</sup> From this it would appear that 50 per cent of the retailers earned less than \$1,600.

In the light of the foregoing considerations we may examine our rough estimate of the distribution according to earnings of all the non-agricultural entrepreneurs outside the professions which is shown in Table 31, page 214. The distribution indicates that 44 per cent of the proprietors earned less than \$1,000 in the prosperous year of 1929 and that 27 per cent had earnings between \$1,000 and \$2,000. Thus only about 29 per cent of the total derived incomes of more than \$2,000 from their business.

All in all it would seem that the majority of the urban entrepreneurs fared no better than the majority of the farmers. Such differences as appear in the lower portions of the two distributions were largely cancelled by the differences in the cost of living. Although the comparison is in terms of business earnings rather than total income, the conclusion holds good on either basis. As will be shown later, in the lower brackets individuals received only negligible amounts of supplementary income and had to rely principally upon their occupational earnings. It is only in the upper incomes that there is considerable divergence between farm and non-farm entrepreneurs. Whereas only about 0.6 per cent of the farmers earned \$5,000 or more in the conduct of their business, more than 7 per cent of the urban entrepreneurs earned such incomes.

*Professional and executive workers.* It has already been stated that in compiling the composite distribution of all personal incomes, shown in Tables 27 and 28, a separate category was set up for professional and executive personnel. It includes salaried employees in the professions as well as independent prac-

<sup>40</sup> The weighted average ratio for chain stores in 1930 of the compensation of employees, including store employees, managers, and supervisors, to sales was 9.06 per cent (*Chain Stores*, Federal Trade Commission, 73 Cong., S. doc. 82, pp. 43 and 45). Even if the proprietor of the \$10,000 business managed without hired help and consequently disbursed to himself the entire cost of labor normally allowed in the mark-up, his income from this source would amount to only \$906. On this basis his total business income would be about \$1,200. It would seem, therefore, that the estimate of about \$1,600 is not an understatement.

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ACCORDING TO THEIR EARNINGS IN 1929<sup>a</sup>

Earnings (In dollars)	Number (In thousands)		Percentage of Total	
	In Each Class	Cumulative (From lower to higher earnings)	In Each Class	Cumulative (From lower to higher earnings)
Under 500.....	608	608	20.91	20.91
500 to 1,000.....	679	1,287	23.38	44.29
1,000 to 1,500.....	483	1,770	16.61	60.90
1,500 to 2,000.....	301	2,071	10.37	71.27
2,000 to 2,500.....	206	2,277	7.10	78.37
2,500 to 3,000.....	146	2,423	5.00	83.37
3,000 to 3,500.....	100	2,523	3.46	86.83
3,500 to 4,000.....	74	2,597	2.53	89.36
4,000 to 4,500.....	57	2,654	1.97	91.33
4,500 to 5,000.....	42	2,696	1.46	92.79
5,000 to 6,000.....	57	2,753	1.95	94.74
6,000 to 7,000.....	41	2,794	1.40	96.14
7,000 to 8,000.....	28	2,822	0.96	97.10
8,000 to 9,000.....	18	2,840	0.62	97.72
9,000 to 10,000.....	12	2,852	0.41	98.13
10,000 to 15,000.....	28	2,880	0.96	99.09
15,000 to 20,000.....	12	2,892	0.42	99.51
20,000 to 25,000.....	7	2,899	0.26	99.77
25,000 to 30,000.....	4	2,903	0.12	99.89
30,000 to 40,000.....	1	2,905	0.06	99.95
40,000 to 50,000.....	1	2,905	0.02	99.97
50,000 to 75,000.....	1	2,906	0.03	100.00
75,000 to 100,000.....	<sup>b</sup>	2,906	<sup>c</sup>	100.00

<sup>a</sup> The estimates are very rough. They are based on the average earnings of entrepreneurs in different industries as estimated in the report of the Department of Commerce, *National Income in 1929-32*, and upon the distribution of professional incomes of physicians in private practice. It was assumed that, although different in general level, the dispersion of business incomes of business proprietors was subject to many of the same forces affecting the dispersion of physicians' incomes. The precariousness of this assumption is obvious, but such other information as is available with respect to the earnings of business entrepreneurs points to the fact that the estimates given here are roughly representative of actual conditions in 1929.

<sup>b</sup> Less than 500.

<sup>c</sup> Less than 0.005 of one per cent.

tioners and it purports to represent also executive personnel in business and industry. The assignment of individuals to this class, though made on the basis of the Census of Occupations and other data, is of necessity arbitrary. Yet it is believed that the individuals so combined form a more or less coherent group in so far as economic status is concerned.

This group, which is composed chiefly of adult males and in our computations represents 4.6 per cent of the gainfully employed and about 4.4 per cent of the income recipients, is evidently far more prosperous than either the farm or non-farm entrepreneur group. As is shown in Table 32, page 216, the concentration of the individuals in the professional group was at about the \$3,000 level of earnings, and comparatively few received incomes under \$1,000. The low incomes were due to the entrepreneurial section of the group, such as private practitioners in medicine, dentistry, and law, who are subject to business risks. In fact some of these practitioners had negative incomes.<sup>50</sup> In contrast to farmers and business entrepreneurs the members of the professional and executive group fall largely in the incomes above \$2,000, 85 per cent having earnings above this amount and about 23 per cent above \$5,000. If total income, instead of occupational earnings, were compared, the economic position of this group relative to that of other major groups in the population would appear even higher, since additional income from non-occupational sources tends to vary with occupational earnings.

*Male employees.* The distribution of wage earners and salaried employees shown in Table 32, page 216, is not entirely comparable with the earnings distributions of the group discussed in the foregoing pages. It represents all the male employees not included in the professional and executive group. This distribution contains minors while the entrepreneurial and professional groups are presumably composed almost exclusively of adults. It also includes farm labor and is consequently weighted heavily with the lower paid workers. In spite of this, however, there appears to be a smaller percentage of low incomes among these wage earners and salaried workers than among the farmers and

<sup>50</sup> Nearly 5 per cent of the practitioners in medicine had deficits. See Leven, *The Incomes of Physicians*, p. 20.

**32. TENTATIVE PERCENTAGE DISTRIBUTION OF MALE EMPLOYEES AND PROFESSIONAL PRACTITIONERS ACCORDING TO EARNINGS IN 1929**

Earnings (In dollars)	All Em- ployees and Pro- fessional Persons <sup>a</sup>	Profes- sional <sup>b</sup> and Exec- utive Personnel	Wage Earners and Salaried Employees Exclusive of Professional and Executive Personnel					
			Weighted Average of the Following Five Dis- tributions <sup>c</sup>	Composite Distri- bution for the United States Based on Various Industrial and Occu- pational Samples	Based on Weekly Rates of Pay for Ohio	Based on Weekly Rates of Pay for Oregon	Based on Weekly Earnings in Texas	Based on Weekly Earnings in Manu- facturing in Mis- souri
0 to 500.....	10.3 <sup>d</sup>	0.5 <sup>d</sup>	11.1	13.6	5.5	2.7	3.1	2.9
500 to 1,000.....	20.1	1.2	21.6	23.2	12.5	17.3	29.2	19.2
1,000 to 1,500.....	26.8	4.0	28.7	27.1	31.0	42.1	27.4	38.9
1,500 to 2,000.....	20.3	9.0	21.2	20.0	26.8	24.1	19.8	21.1
2,000 to 2,500.....	10.8	13.1	10.6	9.8	14.5	9.5	10.9	10.6
2,500 to 3,000.....	4.6	13.7	3.8	3.4	5.7	1.9	6.0	4.5
3,000 to 3,500.....	2.2	11.7	1.4	1.4	1.6	1.7	2.6	1.5
3,500 to 4,000.....	1.4	10.1	0.7	0.7	1.1	0.4	0.6	0.7
4,000 to 4,500.....	0.9	7.5	0.4	0.4	0.6	0.2	0.3	0.2
4,500 to 5,000.....	0.6	6.0	0.2	0.1	0.3	0.1	0.1	0.1
5,000 and over.....	2.0	23.2	0.3	0.3	0.4	—	—	0.3
<b>Total.....</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

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<sup>a</sup> Weighted average of the following two columns. Weights based on occupation statistics of the census. The frequencies on either side of the mode, particularly in the upper portion of the distribution, are perhaps slightly understated.

<sup>b</sup> Includes independent practitioners and salaried personnel.

<sup>c</sup> The composite distribution based on the sample distributions for industrial and occupational groups was given a weight of 70; the Ohio data, 18; the Oregon data, 4; the Missouri data, 2; and the Texas data, 2. In addition a weight of 4 was assigned to a converted distribution based on the Texas sample, intended to represent the Southern states. The conversion was made by shifting the frequency curve for Texas to the left along the income scale by the ratio of the average earnings of employees in eleven Southern states to the average earnings of employees in Texas.

urban entrepreneurs. The earnings classes under \$1,000 comprise about 33 per cent of the employee group. It will be recalled that in the non-farm entrepreneurial group these classes included 44 per cent of the personnel and in the farmer group 69 per cent. However, more than 60 per cent of the workers had earnings (and in this case earnings almost coincided with incomes) of less than \$1,500 in 1929. Almost 32 per cent had earnings between \$1,500 and \$2,500, and about 7 per cent (foremen and higher clerical personnel) earned \$2,500 or more.

*Female employees and professional practitioners.* Of the 47,041,000 persons in gainful occupations at the end of 1929,

**33. TENTATIVE PERCENTAGE DISTRIBUTION OF FEMALE EMPLOYEES AND PROFESSIONAL PRACTITIONERS ACCORDING TO EARNINGS IN 1929**

Earnings (In dollars)	Weighted Average of the Five Series <sup>a</sup>	Compos- ite Dis- tribution for the United States Based on Various Indus- trial and Occup- ational Samples <sup>b</sup>	Based on Weekly Rates of Pay for Ohio	Based on Weekly Rates of Pay for Oregon	Based on Weekly Earnings in Texas	Based on Weekly Earnings in Manu- facturing in Missouri
0 to 500..	15.1	14.7	10.7	9.0	24.0	14.7
500 to 1,000..	53.3	51.6	55.9	68.8	56.7	60.7
1,000 to 1,500..	19.8	20.5	25.7	20.1	14.3	20.4
1,500 to 2,000..	6.4	7.4	5.2	1.5	3.7	2.9
2,000 to 2,500..	2.4	2.7	1.0	0.4	0.8	0.9
2,500 to 3,000..	1.5	1.6	0.7	0.2	0.4	0.3
3,000 to 3,500..	0.7	0.7	0.6	—	0.1	0.1
3,500 to 4,000..	0.4	0.4	0.2	—	—	—
4,000 to 4,500..	0.2	0.2	—	—	—	—
4,500 to 5,000..	0.1	0.1	—	—	—	—
5,000 and over..	0.1	0.1	—	—	—	—
Total.....	100.0	100.0	100.0	100.0	100.0	100.0

<sup>a</sup> The frequencies on either side of the mode, particularly in the upper portion of the distribution, are perhaps slightly understated. As in the estimate for males, the major weight was assigned to the composite distribution for the United States.

<sup>b</sup> Includes earnings in the professions.

10,248,000 or nearly 22 per cent were females. Owing to differences in occupational opportunities the wages and salaries earned by women are in general lower than those of men. It has been estimated that on the average the earnings of women are about 53 per cent of those of men.<sup>51</sup> The comparative position of the two sexes in the different parts of the earnings scale in 1929 is shown by the estimates in Tables 32 and 33, pages 216 and 217. From these estimates it appears that while only 30 per cent of the males earned less than \$1,000 fully 68 per cent of the females were in this class. The modal, that is the most frequent, occupational income for males was about \$1,250; that for females about \$800. Proportionately few females (less than 0.5 per cent) had earnings of more than \$4,000. The proportion of males in this class, however, was about 3.5 per cent. Farmers are, of course, excluded from the comparison.

*All gainfully employed persons exclusive of farmers.* We may now direct our attention to a view of the composite distribution of occupational earnings in 1929 which is shown in Table 34, page 219. This distribution too does not include farmers and hence covers only 41 millions of the 47 millions in remunerative occupations. About 18 millions of these individuals, or 44 per cent of all the employees, professional people, and urban entrepreneurs taken together, earned less than \$1,000 in connection with their regular occupations. An additional 10 million persons had earnings from \$1,000 to \$1,500 and 6.2 million more from \$1,500 to \$2,000, so that altogether 83 per cent of the entire group, or more than 34 million persons, had occupational earnings of less than \$2,000. When we include the farmers the total number under \$2,000 is raised to more than 39.5 million persons and the proportion of the total is raised to 84 per cent.

*Total income of the gainfully employed.* For a large number of people occupational earnings constituted only a part of the total income. For farmers as a group we have shown the total income for 1929 to be 6,200 million dollars as compared with an aggregate farm income of the individual operators of about 5,250 millions. The other sources such as investments and work off the farm thus contributed 18 per cent in additional income.

<sup>51</sup> Maurice Leven, *Income in the Various States*, National Bureau of Economic Research, No. 7, p. 80.



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**34. ESTIMATED DISTRIBUTION OF THE GAINFULLY EMPLOYED, EXCLUSIVE OF FARMERS, ACCORDING TO THEIR EARNINGS IN 1929<sup>a</sup>**

Earnings (In dollars)	Number (In thousands)		Percentage of Total	
	In Each Class	Cumulative (From lower to higher earnings)	In Each Class	Cumulative (From lower to higher earnings)
Under 500...	5,241	5,241	12.77	12.77
500 to 1,000...	12,800	18,041	31.19	43.96
1,000 to 1,500...	10,000	28,041	24.36	68.32
1,500 to 2,000...	6,200	34,241	15.11	83.43
2,000 to 2,500...	2,820	37,061	6.87	90.30
2,500 to 3,000...	1,270	38,331	3.10	93.40
3,000 to 3,500...	750	39,081	1.82	95.22
3,500 to 4,000...	450	39,531	1.10	96.32
4,000 to 4,500...	320	39,851	0.78	97.10
4,500 to 5,000...	215	40,066	0.52	97.62
5,000 to 6,000...	290	40,356	0.71	98.33
6,000 to 7,000...	182	40,538	0.44	98.77
7,000 to 8,000...	115	40,653	0.28	99.05
8,000 to 9,000...	80	40,733	0.20	99.25
9,000 to 10,000...	61	40,794	0.15	99.40
10,000 to 15,000...	133	40,927	0.32	99.72
15,000 to 20,000...	48	40,975	0.12	99.84
20,000 to 25,000...	23	40,998	0.06	99.90
25,000 to 30,000...	13	41,011	0.03	99.93
30,000 to 40,000...	13	41,024	0.03	99.96
40,000 to 50,000...	6	41,030	0.01	99.97
50,000 to 75,000...	6	41,036	0.02	99.99
75,000 to 100,000...	2	41,038	b	99.99
100,000 to 250,000...	3	41,041	0.01	100.00
250,000 to 500,000...	*	41,041	b	100.00
500,000 to 750,000...	*	41,041	b	100.00
750,000 to 1,000,000...	*	41,041	b	100.00
1,000,000 and over.....	*	41,041	b	100.00
<b>Total.....</b>	<b>41,041</b>	<b>41,041</b>	<b>100.00</b>	<b>100.00</b>

<sup>a</sup> Includes agricultural labor working for pay.

<sup>b</sup> Less than 0.005 of one per cent.

\* Less than 500.

It is estimated that the other 41 million gainfully occupied persons whose occupational earnings amounted to 60,107 million dollars had a total income from all sources of 72,097 million. Most of this additional income was derived from investments and profits from the sale of property,<sup>52</sup> although it also included some earnings from odd jobs.

A crude estimate of the distribution of this non-occupational income as well as the distribution of the occupational earnings of individuals by earnings classes is shown in Table 35, page 221. The table covers all the gainfully employed except farmers and does not include that part of the aggregate income which went to income recipients without occupations. It will be noted that on the average the lower the income from employment, business, or profession, the smaller the supplementary income from other sources. Below \$3,000 the non-occupational income was almost negligible. Such as there was came chiefly from home ownership and from work at odd jobs. Above \$3,000 the income from other sources was increasingly important. Those having income from salary, business, or profession of from \$10,000 to \$15,000 appear to have received on the average 55 per cent additional income from other sources. For occupational incomes between \$50,000 and \$60,000 the basic income seems to have been augmented by 100 per cent through receipts from other sources. The supplementary income in the upper brackets came, of course, not only from dividends, interest, and rent, but to a large extent from profits on the sale of securities.

<sup>52</sup> It is not possible to separate the profits from the sale of property from the other non-occupational income of the gainfully employed.

**35. OCCUPATIONAL EARNINGS AND TOTAL INCOME OF THE GAINFULLY  
EMPLOYED, EXCLUSIVE OF FARMERS, 1929**  
Distributed according to Earnings Classes  
(Income figures are in millions of dollars)

Earnings Class	Earnings in Regular Occupation	Other Income	Total Income <sup>a</sup>	Ratio of Total Income to Occupational Income
Under 0...	-43 <sup>b</sup>	b	b	b
0 to 500...	1,762	138	1,900	1.078
500 to 1,000...	9,542	787	10,329	1.082
1,000 to 1,500...	12,240	1,034	13,274	1.084
1,500 to 2,000...	10,603	984	11,587	1.093
2,000 to 2,500...	6,189	696	6,885	1.112
2,500 to 3,000...	3,423	466	3,889	1.136
3,000 to 3,500...	2,400	433	2,833	1.180
3,500 to 4,000...	1,664	350	2,014	1.210
4,000 to 4,500...	1,343	331	1,674	1.246
4,500 to 5,000...	1,009	280	1,289	1.278
5,000 to 6,000...	1,569	483	2,052	1.308
6,000 to 7,000...	1,166	419	1,585	1.359
7,000 to 8,000...	851	341	1,192	1.401
8,000 to 9,000...	672	290	962	1.432
9,000 to 10,000...	573	268	841	1.468
10,000 to 11,000...	457	233	690	1.510
11,000 to 12,000...	341	180	521	1.528
12,000 to 14,000...	551	314	865	1.570
14,000 to 15,000...	230	136	366	1.591
15,000 to 20,000...	816	545	1,361	1.668
20,000 to 25,000...	502	378	880	1.753
25,000 to 30,000...	338	275	613	1.814
30,000 to 40,000...	430	386	816	1.898
40,000 to 50,000...	258	259	517	2.004
50,000 to 75,000...	363	403	766	2.110
75,000 to 100,000...	197	253	450	2.284
100,000 to 250,000...	335	488	823	2.457
250,000 to 500,000...	146	282	428	2.932
500,000 to 750,000...	59	138	197	3.339
750,000 to 1,000,000...	29	73	102	3.517
1,000,000 and over.....	92	304	396	4.304
All classes.....	60,107	11,947	72,097	

<sup>a</sup> Includes profits from the sale of property.

<sup>b</sup> It is not possible to make an estimate of the total operating deficit of business and professional people in 1929. From such fragmentary information as is available it may be concluded that the amount was considerably below 100 million dollars. On the assumption that 2 per cent of the non-agricultural entrepreneurs had deficits (5 per cent of the physicians and about 0.5 per cent of the dentists had negative professional incomes) averaging \$1,000 each, the aggregate would amount to about 66 million dollars. But this figure seems high.

### VI. INCOMES OF FAMILIES

The distribution of income among families was approached in two different ways: (1) through the distribution of residential rents, and (2) through the distribution of incomes among individuals.

*Distribution based on residential rents.* It has long been recognized that there is close correlation between the size of family income and the amount spent for rent, when large groups of the population are considered. The utilization of this fact for the purpose of estimating the distribution of income among families is made possible by the valuable data furnished for the first time by the 1930 Census. This census provides information regarding the distribution of American families according to the value or monthly rent of their homes.

36. PERCENTAGE DISTRIBUTION OF NON-FARM FAMILIES BY INCOME CLASSES  
(Estimated from distribution of rents)<sup>a</sup>

Income Class (In dollars)	All Families <sup>b</sup>	Urban Families	Rural Families
Under 500.....	1.4	1.0	2.4
500 to 1,000.....	9.7	7.3	15.2
1,000 to 1,500.....	20.6	16.8	29.4
1,500 to 2,000.....	18.9	19.6	16.8
2,000 to 2,500.....	12.7	13.9	10.0
2,500 to 3,000.....	8.9	10.0	6.5
3,000 to 4,000.....	12.0	13.7	8.2
4,000 to 5,000.....	6.0	6.6	4.7
5,000 to 10,000.....	7.7	8.8	5.0
10,000 and over.....	2.1	2.3	1.8
All classes.....	100.0	100.0	100.0

<sup>a</sup> Based on distribution of rents and values of owned homes, reported in the 1930 Census, and estimates of the relationship between distributions of rents and incomes compiled from an analysis of scattered samples including university professors, clerical workers, and skilled and non-skilled wage earners.

<sup>b</sup> Weighted average: urban families given weight of 7 and rural families given weight of 3. The weights are based on the number of homes in each class reported by the census.

The problem of transforming the census distribution of rents and home values into a distribution of incomes was similar to that encountered in converting the distribution of farms according

to the value of farm products into a distribution of net farm incomes.<sup>53</sup> The amounts of family income for specified readings on the distribution curve of rents were estimated from an analysis of sample data giving both family income and house rent.<sup>54</sup> The income equivalents for specified amounts of rent paid annually by urban families obtained from the analysis of the samples are as follows:

Rent	Income <sup>55</sup>
\$ 100 .....	\$ 800
200 .....	1,160
300 .....	1,575
400 .....	2,060
500 .....	2,560
600 .....	3,080
800 .....	4,110
1,000 .....	5,150
1,500 .....	7,720
2,000 .....	10,300
2,500 .....	12,850

Preliminary estimates of the distribution of family incomes based on these equivalents and the census data are shown in Table 36. The figures are for non-farm families. No attempt has been made to estimate farm incomes from the rental values of farm homes.

*Distribution based on individual incomes.* The method used in deriving the income distribution for families from that of individual incomes may be stated in a few words. As a first step,

<sup>53</sup> See pp. 197-203.

<sup>54</sup> For owned homes, the reported figures were converted to a rental basis by assuming the annual rental of a home to be equal to 10 per cent of its value. This conversion factor is obviously very rough. For more accurate results it would be necessary to study separately the incomes of families in owned and rented homes. The available data are, however, insufficient to make such an analysis possible at this time. The analysis of the samples and the discussion of the problems connected with the study must be reserved for a separate presentation.

<sup>55</sup> For rents from \$400 to \$2,500 the estimated relationship between rents and incomes may be represented by the straight line  $I = 5.15R$  in which  $I$  is income and  $R$  is rent. It is estimated on the basis of the available data that, for the same amounts of rent, incomes in rural non-farm communities were about 40 per cent higher than in urban communities.

the individual distributions (farm families and non-farm families were treated separately) were broken into parts representing (1) the incomes of heads of families of two or more persons, (2) supplementary income recipients in families having more than one income, (3) unattached individuals living alone, as roomers, or as parts of institutional groups.

The next step was to combine the incomes of other members of the family with that of the head of the household for families of two or more persons. To accomplish this these families were divided into groups according to the number of income recipients in the family. Table 46, page 238, shows the estimated number of families with one, two, three, four, and five income recipients.<sup>56</sup> Separate income distributions, which were later combined into a composite representing all families of two or more persons, were set up for each group. In general the principle was to add successively to the main income, that of each additional income recipient in the family.

It was assumed that the shape of the distribution curve for heads of families was the same for each class of families, that is, that the proportion of the number of principal incomes of a given amount was the same in families with only one income recipient as in families with two or more income recipients. On this assumption, there was obviously no problem in setting up the distribution for the families with only one income recipient. It was obtained by merely multiplying each frequency in the income distribution of all heads of families by the ratio of the total number of families with one income recipient to the total number of all families.

The residual frequencies, obtained by subtracting the distribution of one income families, constituted the distribution of principal incomes in families of two or more income recipients. To this distribution was added an equal number from the distribution of supplementary incomes so as to obtain the distribution of the combined incomes of the first two recipients. The distribution thus obtained was divided into families having only two income recipients and families having more than two. The

<sup>56</sup> No attempt was made to carry the classification further, although there were undoubtedly some families with more than five income recipients.

latter distribution was adjusted to include a third income recipient for each family. The process was repeated until distributions for all five groups were set up.

As a practical problem the combination of the principal incomes with the supplementary incomes is obviously not a matter of addition in the usual sense. Theoretically each principal income may combine with any one item in the distribution of supplementary incomes and the number of such possible combinations in several million families is infinite. Since our estimates are in broad classes it was possible to deal with the problem in a simplified manner.

The method employed may be illustrated by its application to the 7,409,000 non-farm families which had more than one income recipient in 1929. These families were subdivided into groups so that the total in each group corresponded proportionally to the frequencies in the different income classes<sup>57</sup> in the distribution of supplementary incomes. For instance, it was found on this basis that the first supplementary income of 839,000 (11.3 per cent) of the 7,409,000 families was between zero and \$500; of 3,359,000 families (45.3 per cent), between \$500 and \$1,000; of 1,600,000 families (21.6 per cent), between \$1,000 and \$1,500, and so on. To each of these groups, classified with respect to incomes of heads of families, was added the corresponding class average of the supplementary incomes. Thus the average of the zero to \$500 class in the supplementary income distribution was added to 839,000 principal incomes, so that presumably each family in this group, in addition to the income of its main breadwinner, had an added income of \$373. In this new distribution the principal income of zero became \$373, that of \$500 became \$873, and that of \$1,200 became \$1,573. This had the effect of shifting the distribution curve of principal incomes to the right along the income scale by \$373. The same type of shift was accomplished for the distribution of principal incomes representing the 3,359,000 families having supplementary incomes between \$500 and \$1,000 and for each of the other groups.

The several distributions thus transformed were plotted as

<sup>57</sup> In \$500 intervals up to \$5,000 and \$1,000 intervals thereafter. The method was applied only as far as \$15,000.

cumulative curves. The sum of these curves represented a composite distribution for the 7,409,000 families, which incorporated both the first and the second income.

The last distribution, after the proportional number of families with only two incomes had been subtracted, was treated in exactly the same manner as described above in order to incorporate the second supplementary income. In this case the distribution pattern to which the averages for the different income classes of supplementary income recipients were added was that based on the first two incomes instead of that based on the principal incomes alone. The process was repeated for the third and fourth supplementary incomes.

The resulting distributions for the five groups of families were added in order to obtain the frequencies for all families of two or more persons. A similar method was used for the purpose of expanding the distributions of farm incomes into the distribution of incomes among farm families.

The final results will be found in Tables 37-41. It should be noted that on account of the magnitude of the task, the method of expansion described in the foregoing paragraphs was, in the case of non-farm families, applied only to incomes below \$15,000. For the higher incomes the distribution of families was estimated to be proportional to that of principal incomes. The error resulting from this assumption cannot be evaluated. We can only say that the figures above \$15,000, particularly in the upper range, are of a lower order of accuracy than those under \$15,000.

In Table 42, page 232, the distribution of non-farm families obtained from the expansion of the distribution of individual incomes is compared with that based upon rents. In view of the imperfections in the original data the results reached by the two methods are remarkably close to each other. The distribution derived from individual incomes is on the whole believed to be more reliable than that estimated from the distribution of rents. The latter was consequently used only as a check. However, it is not improbable that in the lower incomes, particularly incomes from zero to \$500, the rentals offer a more accurate estimate. In other words, the percentage of families with incomes under \$500 is perhaps understated in the distribution derived from the personal incomes; conversely, in the following class, that is be-



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**37. ESTIMATED NUMBER OF FAMILIES AND UNATTACHED INDIVIDUALS  
BY INCOME CLASSES, 1929**

(In thousands)

Income Class* (In dollars)	All Spending Units	Families of Two or More Persons			Unat- tached Individuals (In- cluding one-per- son families)
		Total	Non-Farm	Farm	
Under 0 <sup>b</sup>	139	120	50	70	19
0 to 500 <sup>b</sup>	3,562	1,982	600	1,382	1,580
500 to 1,000.	6,319	3,797	2,085	1,712	2,522
1,000 to 1,500.	7,782	5,754	4,749	1,005	2,028
1,500 to 2,000.	5,993	4,701	4,094	607	1,292
2,000 to 2,500.	3,812	3,204	2,811	393	608
2,500 to 3,000.	2,247	1,988	1,767	221	259
3,000 to 3,500.	1,604	1,447	1,312	135	157
3,500 to 4,000.	1,091	993	898	95	98
4,000 to 4,500.	785	718	656	62	67
4,500 to 5,000.	565	514	474	40	51
5,000 to 6,000.	736	666	626	40	70
6,000 to 7,000.	454	407	388	19	47
7,000 to 8,000.	284	252	243	9	32
8,000 to 9,000.	196	172	168	4	24
9,000 to 10,000.	146	128	126	2	18
10,000 to 15,000.	354	304	301	3	50
15,000 to 20,000.	130	108	107	1	22
20,000 to 25,000.	71	59	59	•	12
25,000 to 30,000.	42	35	35	•	7
30,000 to 40,000.	48	40	40	•	8
40,000 to 50,000.	27	22	22	•	5
50,000 to 75,000.	32	27	27	•	5
75,000 to 100,000.	14	12	12	—	2
100,000 to 250,000.	19	16	16	—	3
250,000 to 500,000.	5	4	4	—	1
500,000 and over...	5	4	4	—	1
All classes .....	36,462	27,474	21,674	5,800	8,988

\* Includes income from occupation, investments, and sale of property; also includes imputed income on owned homes, but does not include imputed income on durable consumption goods other than homes. The distribution above \$15,000 is very rough. See p. 226.

<sup>b</sup> The estimates for this class are highly tentative.

• Less than 500 included in \$15,000 to \$20,000 class.

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38. PERCENTAGE DISTRIBUTION OF FAMILIES AND UNATTACHED INDIVIDUALS BY INCOME CLASSES, 1929

Income Class <sup>a</sup> (In dollars)	All Spending Units	Families of Two or More Persons			Unat- tached Individ- uals (In- cluding one- person families)
		Total	Non-Farm	Farm	
Under 0 <sup>b</sup>	0.381	0.437	0.231	1.207	0.211
0 to 500 <sup>b</sup>	9.769	7.214	2.768	23.828	17.579
500 to 1,000.	17.330	13.820	9.620	29.517	28.060
1,000 to 1,500.	21.343	20.943	21.911	17.328	22.563
1,500 to 2,000.	16.436	17.111	18.889	10.466	14.375
2,000 to 2,500.	10.455	11.662	12.970	6.776	6.765
2,500 to 3,000.	6.162	7.236	8.153	3.811	2.882
3,000 to 3,500.	4.399	5.267	6.053	2.328	1.747
3,500 to 4,000.	2.992	3.614	4.143	1.638	1.090
4,000 to 4,500.	2.153	2.613	3.027	1.069	0.745
4,500 to 5,000.	1.550	1.871	2.187	0.690	0.567
5,000 to 6,000.	2.018	2.424	2.888	0.690	0.779
6,000 to 7,000.	1.245	1.481	1.790	0.328	0.523
7,000 to 8,000.	0.779	0.917	1.121	0.155	0.356
8,000 to 9,000.	0.538	0.626	0.775	0.069	0.267
9,000 to 10,000.	0.400	0.466	0.581	0.034	0.200
10,000 to 15,000.	0.971	1.107	1.389	0.052	0.556
15,000 to 20,000.	0.357	0.393	0.494	0.010	0.245
20,000 to 25,000.	0.195	0.215	0.272	0.002	0.134
25,000 to 30,000.	0.115	0.127	0.161	0.001	0.078
30,000 to 40,000.	0.132	0.146	0.185	0.001	0.089
40,000 to 50,000.	0.074	0.080	0.102	•	0.056
50,000 to 75,000.	0.088	0.098	0.125	•	0.056
75,000 to 100,000.	0.038	0.044	0.055	—	0.022
100,000 to 250,000.	0.052	0.058	0.074	—	0.033
250,000 to 500,000.	0.014	0.015	0.018	—	0.011
500,000 and over. . .	0.014	0.015	0.018	—	0.011
All classes . . . .	100.000	100.000	100.000	100.000	100.000

<sup>a</sup> Includes income from occupation, investments, and from sale of property; also includes imputed income on owned homes, but does not include imputed income on durable consumption goods other than homes. The distribution above \$15,000 is very rough. See p. 226.

<sup>b</sup> The estimates for this class are highly tentative.

<sup>c</sup> Less than 0.0005 of one per cent.

39. INCOME OF FAMILIES AND UNATTACHED INDIVIDUALS  
BY INCOME CLASSES, 1929  
(In millions of dollars)

Income Class* (In dollars)	All Spending Units	Families of Two or More Persons			Unat- tached Individuals (In- cluding one- person families)
		Total	Non-Farm	Farm <sup>c</sup>	
Under 0 <sup>b</sup>	-775	-615	-600	-15	-160
0 to 500 <sup>b</sup>	1,069	596	160	436	473
500 to 1,000.	4,815	2,919	1,670	1,249	1,896
1,000 to 1,500.	9,693	7,197	5,962	1,235	2,496
1,500 to 2,000.	10,399	8,167	7,117	1,050	2,232
2,000 to 2,500.	8,500	7,153	6,276	877	1,347
2,500 to 3,000.	6,137	5,433	4,831	602	704
3,000 to 3,500.	5,184	4,678	4,242	436	506
3,500 to 4,000.	4,077	3,710	3,356	354	367
4,000 to 4,500.	3,327	3,041	2,780	261	286
4,500 to 5,000.	2,678	2,437	2,247	190	241
5,000 to 6,000.	4,012	3,632	3,414	218	380
6,000 to 7,000.	2,933	2,628	2,506	122	305
7,000 to 8,000.	2,125	1,883	1,817	66	242
8,000 to 9,000.	1,661	1,459	1,421	38	202
9,000 to 10,000.	1,392	1,218	1,196	22	174
10,000 to 15,000.	4,265	3,666	3,629	37	599
15,000 to 20,000.	2,227	1,856	1,846	10	371
20,000 to 25,000.	1,572	1,309	1,306	3	263
25,000 to 30,000.	1,161	965	964	1	196
30,000 to 40,000.	1,674	1,395	1,394	1	279
40,000 to 50,000.	1,187	984	984		203
50,000 to 75,000.	1,943	1,616	1,615	1	327
75,000 to 100,000.	1,248	1,036	1,036	—	212
100,000 to 250,000.	2,595	2,164	2,164	—	431
250,000 to 500,000.	1,802	1,500	1,500	—	302
500,000 to 750,000.	1,073	895	895	—	178
750,000 to 1,000,000.	655	545	545	—	110
1,000,000 and over.	4,321	3,649	3,649	—	672
All classes .....	92,950	77,116	69,922	7,194	15,834

\* Includes income from occupation, investments, and sale of property; also includes imputed income on owned homes, but does not include imputed income on durable consumption goods other than homes. The computations are based on Table 37, p. 227, and were made before the frequency figures in that table were rounded. Hence class averages computed from the recorded figures would be inaccurate in the classes in which the frequencies are low. The distribution above \$15,000 is very rough. See p. 226.

<sup>b</sup> The estimates for this class are highly tentative.

<sup>c</sup> Includes an allowance for rent and farm produce consumed, and the earnings from non-farm activities of all members of the family.

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40. PERCENTAGE DISTRIBUTION OF THE INCOME OF FAMILIES AND UNATTACHED INDIVIDUALS, BY INCOME CLASSES, 1929

Income Class <sup>a</sup> (In dollars)	All Economic Units	Families of Two or More Persons			Unat- tached Individ- uals (In- cluding one- person families)
		Total	Non-Farm	Farm	
Under 0 <sup>b</sup>	-0.834	-0.797	-0.858	-0.208	-1.010
0 to 500 <sup>b</sup>	1.150	0.773	0.229	6.061	2.987
500 to 1,000.	5.180	3.785	2.388	17.362	11.974
1,000 to 1,500.	10.428	9.333	8.526	17.167	15.764
1,500 to 2,000.	11.188	10.590	10.178	14.596	14.096
2,000 to 2,500.	9.145	9.276	8.976	12.191	8.507
2,500 to 3,000.	6.603	7.045	6.909	8.368	4.446
3,000 to 3,500.	5.577	6.066	6.067	6.061	3.196
3,500 to 4,000.	4.386	4.811	4.800	4.921	2.318
4,000 to 4,500.	3.579	3.943	3.976	3.628	1.806
4,500 to 5,000.	2.881	3.160	3.214	2.641	1.522
5,000 to 6,000.	4.316	4.710	4.882	3.031	2.400
6,000 to 7,000.	3.156	3.408	3.584	1.696	1.926
7,000 to 8,000.	2.286	2.442	2.599	0.918	1.528
8,000 to 9,000.	1.787	1.892	2.032	0.528	1.276
9,000 to 10,000.	1.498	1.579	1.710	0.306	1.099
10,000 to 15,000.	4.588	4.754	5.190	0.515	3.783
15,000 to 20,000.	2.396	2.407	2.640	0.139	2.343
20,000 to 25,000.	1.691	1.697	1.868	0.042	1.661
25,000 to 30,000.	1.249	1.251	1.379	0.014	1.238
30,000 to 40,000.	1.801	1.809	1.994	0.014	1.762
40,000 to 50,000.	1.277	1.276	1.407	0.005	1.282
50,000 to 75,000.	2.090	2.096	2.310	0.004	2.065
75,000 to 100,000.	1.343	1.343	1.482	—	1.339
100,000 to 250,000.	2.792	2.806	3.095	—	2.722
250,000 to 500,000.	1.939	1.945	2.145	—	1.907
500,000 to 750,000.	1.154	1.161	1.280	—	1.124
750,000 to 1,000,000	0.705	0.707	0.779	—	0.695
1,000,000 and over..	4.649	4.732	5.219	—	4.244
All classes .....	100.000	100.000	100.000	100.000	100.000

\* Includes income from occupation, investments, and from sale of property; also includes imputed income on owned homes, but does not include imputed income on durable consumption goods other than homes. The distribution above \$15,000 is very rough. See p. 226.

<sup>b</sup> The estimates for this class are highly tentative.

41. CUMULATIVE DISTRIBUTION OF NON-FARM AND FARM FAMILIES, BY INCOME CLASSES, 1929<sup>a</sup>

Income Class <sup>b</sup> (In dollars)	Non-Farm Families				Farm Families			
	Families		Income		Families		Income	
	Number (In thousands)	Per cent	Amount (In millions of dollars)	Per cent	Number (In thou- sands)	Per cent	Amount (In millions of dollars)	Per cent
Under 0 <sup>c</sup>	50	0.231	-600	-0.258	70	1.207	-15	-0.208
Under 500 <sup>d</sup>	650	2.999	-440	-0.529	1,452	25.035	421	5.853
Under 1,000	2,735	12.619	1,230	1.759	3,164	54.552	1,670	23.215
Under 1,500	7,484	34.530	7,192	10.285	4,169	71.850	2,905	40.382
Under 2,000	11,578	53.419	14,309	20.463	4,776	82.346	3,953	54.978
Under 2,500	14,389	66.389	20,585	29.439	5,169	89.122	4,832	67.169
Under 3,000	16,156	74.542	25,416	36.348	5,390	92.933	5,434	75.537
Under 3,500	17,468	80.595	29,658	42.415	5,525	95.261	5,870	81.598
Under 4,000	18,366	84.738	33,014	47.215	5,620	96.899	6,224	86.519
Under 4,500	19,022	87.765	35,794	51.191	5,682	97.968	6,485	90.147
Under 5,000	19,496	89.952	38,041	54.405	5,722	98.658	6,675	92.788
Under 6,000	20,122	92.840	41,455	59.287	5,763	99.348	6,893	95.819
Under 7,000	20,510	94.630	43,961	62.871	5,781	99.676	7,015	97.515
Under 8,000	20,753	95.751	45,778	65.470	5,790	99.831	7,081	98.433
Under 9,000	20,921	96.526	47,199	67.502	5,794	99.900	7,119	98.961
Under 10,000	21,047	97.107	48,395	69.212	5,796	99.934	7,141	99.267
Under 15,000	21,348	98.496	52,024	74.402	5,799	99.986	7,178	99.782
Under 20,000	21,455	98.990	53,870	77.042	5,800 <sup>d</sup>	99.996	7,188	99.921
Under 25,000	21,514	99.262	55,176	78.910	5,800 <sup>d</sup>	99.998	7,191	99.963
Under 30,000	21,549	99.423	56,140	80.289	5,800 <sup>d</sup>	99.999	7,192	99.977
Under 40,000	21,589	99.608	57,534	82.283	5,800 <sup>d</sup>	100.000 <sup>d</sup>	7,193	99.991
Under 50,000	21,611	99.710	58,518	83.690	5,800 <sup>d</sup>	100.000 <sup>d</sup>	7,193	99.996
Under 75,000	21,638	99.835	60,133	86.000	5,800 <sup>d</sup>	100.000 <sup>d</sup>	7,194	100.000
Under 100,000	21,650	99.890	61,169	87.482	5,800	100.000	7,194	100.000
Under 250,000	21,666	99.964	63,333	90.577	5,800	100.000	7,194	100.000
Under 500,000	21,670	99.982	64,833	92.722	5,800	100.000	7,194	100.000
All classes	21,674	100.000	69,922	100.000	5,800	100.000	7,194	100.000

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<sup>a</sup> Families of two or more persons. Based on Tables 37-40, pp. 227-30. The distribution above \$15,000 is very rough. See p. 226.  
<sup>b</sup> Includes income from occupation, investments, and sale of property; also includes imputed income on owned homes, but does not include imputed income on durable consumption goods other than homes.  
<sup>c</sup> The estimates for this class are highly tentative.  
<sup>d</sup> There were some families in these classes, but the frequencies were too small to show in the units used here.

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tween \$500 and \$1,000, the percentage is probably overstated.

Both distributions presumably reflect in a general way the same concept of income, that is, income from the individual rather than the national point of view. Profits from the sale of property were included in the personal incomes and hence also in the family incomes based thereon; such profits were reflected also in the rents paid by families and in the values of owned homes.

## 42. COMPARISON OF TWO ESTIMATES OF THE PERCENTAGE DISTRIBUTION OF NON-FARM FAMILIES, BY INCOME CLASSES, 1929

Income Class (In dollars)	Families in Each Class (Simple distribution)		Families in Each and All Preceding Classes (Cumulative distribution)	
	Computed from Distri- bution of In- dividual Incomes	Computed from Distri- bution of Rents	Computed from Distri- bution of In- dividual Incomes	Computed from Distri- bution of Rents
Under 0.	0.2	0.2 <sup>a</sup>	0.2	0.2 <sup>a</sup>
0 to 500.	2.8	1.2	3.0	1.4
500 to 1,000.	9.6	9.7	12.6	11.1
1,000 to 1,500.	21.9	20.6	34.5	31.7
1,500 to 2,000.	18.9	18.9	53.4	50.6
2,000 to 2,500.	13.0	12.7	66.4	63.3
2,500 to 3,000.	8.1	8.9	74.5	72.2
3,000 to 4,000.	10.2	12.0	84.7	84.2
4,000 to 5,000.	5.2	6.0	89.9	90.2
5,000 to 10,000.	7.2	7.7	97.1	97.9
10,000 and over.	2.9	2.1	100.0	100.0

<sup>a</sup> Assumed to be the same as in preceding column.

In the distribution based upon rents greater account was perhaps taken of income from illegal and extra-legal activities than in the other distribution. The income from graft, for instance, is reflected in the type of home the recipient occupies but does not find its way to any great extent into the statistics used for estimating the distribution of personal incomes.

As in the distribution of individual incomes, the family distribution contains certain duplications which, together with the fact that profits from the sale of property are included, make the aggregate income higher than the estimates of total national income. The "inflation" represented by this difference, if inflation

it may be called, is not evenly or proportionally distributed among all income classes. That arising from the inclusion of capital gains is concentrated largely in the higher incomes. The comparison between the lower and the higher income brackets must, therefore, remain largely arithmetic, within the terms of our

**43. CLASSIFICATION OF INCOME RECIPIENTS BY AGE, SEX, AND FAMILY CONNECTION AS OF THE END OF 1929**

Class of Income Recipients	Number of Income Recipients (In thousands)		
	Total	Non-farm	Farm
<b>ALL INCOME RECIPIENTS</b> . . . . .	49,041	40,308	8,733
<b>MALES AND FEMALES 20 YEARS OF AGE AND OVER</b> . . . . .	45,390	37,197	8,193
Heads of families of two or more persons . . . . .	27,474	21,674	5,800
Supplementary earners . . . . .	8,928	8,168 <sup>a</sup>	760
Unattached . . . . .	8,988	7,355	1,633 <sup>a</sup>
<i>Males 20 years of age and over</i> . . . . .	36,176	28,378	7,798
Heads of families of two or more persons . . . . .	26,124	20,574	5,550
Supplementary earners . . . . .	2,976	2,361 <sup>a</sup>	615 <sup>a</sup>
Unattached . . . . .	7,076	5,443	1,633
<i>Females 20 years of age and over</i> . . . . .	9,214	8,819	395
Heads of families of two or more persons . . . . .	1,350	1,100	250
Supplementary earners . . . . .	5,952	5,807 <sup>a</sup>	145
Unattached . . . . .	1,912	1,912	<sup>b</sup>
<b>MINORS UNDER 20, SUPPLEMENTARY EARNERS</b> . . . . .	3,651	3,111	540
<i>Males</i> . . . . .	2,217	1,717	500
<i>Females</i> . . . . .	1,434	1,394	40

<sup>a</sup> It is estimated that 465,000 of the non-farm income recipients (135,000 males and 330,000 females) supplemented the income of farm families. See Table 44, p. 234.

<sup>b</sup> It is assumed that the number of unattached females on farms was negligible.

definition of income. In other words, before the figures may be used as a measure of comparative economic well-being, they must be adjusted in many respects. For instance, some adjustment will have to be made for the difference in tax burden relative to derived benefits as between the upper and lower income classes. An adjustment will also have to be made for the greater

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dissipation of nominal income that exists in the upper classes as compared with the lower, and more specifically for the fact that in the lower incomes a larger proportion of the income is likely to be realized in terms of consumption. Much of the income in the higher brackets, whether derived from capital gains or from production, never materializes in consumption by the recipient.

*Allocation of income recipients and families.* In transforming the individual income distribution into a family distribution it was necessary, as a preliminary step, to make an analysis of the census data pertaining to gainfully employed individuals and families. Selected material from this analysis bearing upon the final results is presented in Tables 43-46. The classification of income re-

44. HEADS OF FAMILIES AND GAINFULLY EMPLOYED PERSONS ON FARMS  
APRIL 1930

(In thousands)

Classification	Total	Farmers	Farm Managers	Other Occupations	Agricultural Wage Workers	Unpaid Family Workers	No Occupation
Total . . . . .	11,462	6,012 <sup>a</sup>	56 <sup>b</sup>	880	2,733 <sup>c</sup>	1,660	121
Heads of families . . . . .	6,604 <sup>e</sup>	6,012	56 <sup>d</sup>	415 <sup>b,e</sup>	— <sup>f</sup>	—	121 <sup>e</sup>
Unattached . . . . .	1,433	—	—	—	1,433 <sup>d</sup>	—	—
Supplementary . . . . .	3,425 <sup>h</sup>	—	—	465 <sup>h</sup>	1,300 <sup>h</sup>	1,660 <sup>h</sup>	—

<sup>a</sup> *Fifteenth Census of the United States (1930), Population, Vol. V, p. 40.*

<sup>b</sup> The same, *Agriculture, Vol. II, Pt. 2, p. 30.*

<sup>c</sup> The same, *Population, Vol. VI, p. 23.*

<sup>d</sup> It is assumed that all of the farm managers had families.

<sup>e</sup> Total number of farm operators as reported in Census of Agriculture less farm managers and farmers, as reported in Census of Occupations.

<sup>f</sup> It is assumed that practically all of the hired agricultural laborers were not heads of families.

<sup>g</sup> Total less the estimated number of supplementary breadwinners employed in agriculture.

<sup>h</sup> According to the Census of Families 1,387,000 farm families had two gainful workers, 519,000 had three, and 302,000 had four or more. From this it is estimated that the farm families had about 3.4 million supplementary earners. Since 1,660,000 gainful workers on farms were reported as "unpaid family labor" the supplementary earners working for wages numbered 1,765,000. The division of this number between those working on local farms and those engaged in other occupations is arbitrary and is based on the best guess that can be made from general considerations. Teaching school, tending filling stations, "clerking" in country stores, and urban occupations within commuting distance are some of the non-agricultural opportunities offered to young people on American farms.



ipients by age, sex, and family connection shown in Table 43, page 233, was used in estimating the number and types of income recipients constituting the main providers and the supplementary earners in families, as well as the number of unattached individuals.

It appears from the census that at the end of 1929 the number of persons deriving income from gainful occupations in the continental United States was approximately 47,041,000.<sup>88</sup> This number included 3,651,000 minors under the age of 20 and 8,814,000 females 20 years of age and over. In addition to the 47,041,000 there were about 2,000,000 individuals who received incomes although not actively employed. The number of income recipients was thus 49,041,000. An analysis of the income tax returns for 1929 indicates that approximately 20 per cent of the income receivers in the United States were females.<sup>89</sup> Accepting this as a basis we estimated that the 2,000,000 income recipients without gainful occupations were composed of approximately 400,000 females and 1,600,000 males. The total number of income recipients in the country at the end of 1929 may therefore be divided as follows:

Males 20 years of age and over . . . . .	36,176,000
Females 20 years of age and over . . . . .	9,214,000
Minors under 20 years of age . . . . .	3,651,000
	49,041,000

The bulk of these income recipients formed part of 29,825,000 families of the following classes:

Families with no gainful workers . . . . .	1,800,000
Families with 1 gainful worker . . . . .	18,519,000
Families with 2 gainful workers . . . . .	6,305,000
Families with 3 gainful workers . . . . .	2,134,000
Families with 4 or more gainful workers . . . . .	1,067,000

It should be noted that the foregoing estimates, which are based upon the census, include 2,351,000 "families" of one person each. In many respects these do not constitute families and

<sup>88</sup> Unpaid family labor on farms is not included.

<sup>89</sup> This checks closely with the proportion of females in the total number of gainfully employed persons 20 years of age and over.

should rather be treated as individual income recipients outside of family groups. When these individuals are eliminated the estimate of the total number of families, that is families of two or more persons, becomes 27,474,000 instead of 29,825,000.

In so far as the classification according to the number of gainful workers is concerned the 2,351,000 families of one person fall either within the group of 1,800,000 with no gainful workers or within the next class (the 18,519,000 with only one

45. DISTRIBUTION OF CENSUS FAMILIES ACCORDING TO THE NUMBER OF GAINFUL WORKERS AS OF THE END OF 1929<sup>a</sup>

Families with Specified Number of Gainful Workers	Number of Families (In thousands)		
	Total <sup>b</sup>	With Two or More Persons	With Only One Person
None.....	1,800	800	1,000 <sup>b</sup>
One.....	18,519	17,168	1,351 <sup>b</sup>
Two.....	6,305	6,305	—
Three.....	2,134	2,134	—
Four or more.....	1,067	1,067	—
All families.....	29,825	27,474	2,351 <sup>a</sup>

<sup>a</sup> Includes unpaid family workers on farms.

<sup>b</sup> Estimated on basis of distribution with respect to type of community and home ownership. *Fifteenth Census of the United States (1930), Population, Vol. VI, pp. 13-50.*

<sup>c</sup> Figures from *Fifteenth Census of the United States* reduced by 0.0273 per cent to allow for increase between Dec. 31, 1929 and Apr. 1, 1930. The latter date is the date of the census.

gainful worker). Just how the one-person families are divided cannot be determined with certainty. Only a rough estimate may be ventured. From an examination of the distribution of one-person families according to location and tenure, in the light of certain considerations with respect to mode of living and occupational opportunities, we estimated that roughly a million of the single persons classified by the census as families were without gainful occupations. The remainder, 1,351,000, were gainfully occupied.

Accepting these figures as the best available estimate we concluded that only 800,000 of the 1,800,000 families which had

no gainful workers at the end of 1929, and only 17,168,000 of the 18,519,000 census families which had only one gainful worker each, were composed of two or more persons.

The results of the foregoing considerations are set forth in Table 45, page 236. The classification of families in this table is based on the census definition of gainfully employed persons, which includes unpaid family labor on farms. Since we are interested only in the gainfully employed persons who received incomes independently, the distribution must be adjusted by subtracting from the families reported as having more than one income recipient some 1,600,000 supplementary workers. The effect of the adjustment is to shift some of the families down the scale with respect to the classification by the number of gainful workers or incomes. That is, a family classified as having two gainful workers may under the new terms become one with only one income.

In making the adjustment it was assumed that the distribution of unpaid agricultural workers among the farm families was proportional to that of the total number of gainful workers originally computed from the census data. The original and adjusted estimates of the distribution of farm families according to the number of gainful workers in the family are given below (in thousands):

Workers in Family	Original Estimate	Adjusted Estimate
One .....	3,592	4,662
Two .....	1,387	715
Three .....	519	268
Four or more .....	302	155
Total <sup>60</sup> .....	5,800	5,800

The final distribution of the families, both farm and non-farm, according to number of incomes and allocation of income recipients is given in Table 46, p. 238.

<sup>60</sup> For purposes of computing the distribution of income by families, it was estimated that 5.8 million farmers were heads of families of two or more persons.

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46. CLASSIFICATION OF FAMILIES BY NUMBER OF INCOME RECIPIENTS, AND ALLOCATION OF INCOME RECIPIENTS TO SPENDING UNITS  
As of the End of 1929<sup>a</sup>

Type of Family and Income Recipient	All Groups		Non-Agricultural		Agricultural	
	Number of Families	Number of Income Recipients	Number of Families	Number of Income Recipients	Number of Families	Number of Income Recipients
<b>FAMILIES OF TWO OR MORE PERSONS, BY NUMBER OF INCOME RECIPIENTS:</b>						
Any number.....	27,474	40,053	21,674	32,488	5,800	7,565 <sup>b</sup>
One.....	18,927	18,927	14,265	14,265	4,662	4,662
Two.....	5,705	11,410	4,990	9,980	715	1,430 <sup>b</sup>
Three.....	1,922	5,766	1,654	4,962	268	804 <sup>b</sup>
Four <sup>c</sup> .....	650	2,600	540	2,160	110	440 <sup>b</sup>
Five <sup>c</sup> .....	270	1,350	225	1,125	45	225 <sup>b</sup>
<b>INCOME RECIPIENTS OUTSIDE OF FAMILY GROUPS:</b>						
All.....		8,988		7,355		1,633
One-person families..		2,351		2,151		200
Not operating independent household.		6,637		5,204		1,433
<b>ALL INCOME RECIPIENTS ..</b>		<b>49,041</b>		<b>39,843<sup>d</sup></b>		<b>9,198<sup>b</sup></b>

<sup>a</sup> Based on the census. See discussion in text, pp. 234-37.

<sup>b</sup> Includes supplementary workers not engaged in farming. The total of such workers is estimated as 465,000.

<sup>c</sup> The total number of families with four or more income recipients is 920,000. The division of this number between families of four and five income recipients has been accomplished by reading from a cumulative distribution projected to include all families. The assumption is made that the number of families with more than five income recipients is negligible.

<sup>d</sup> This is 465,000 less than the total number of income recipients outside of agriculture. See note <sup>b</sup>.

## APPENDIX B

### THE UTILIZATION OF INCOME

This appendix is supplemental to Chapters VI, VII, and VIII dealing with the utilization of family incomes and with the aggregate consumptive expenditures and aggregate savings of the nation. It contains the basic tables from which data used in the text are drawn. Consideration is also given to the statistical methods used in building up these basic tables, and to problems involved in the process.

We wish to express our appreciation to those who have cooperated in providing us with tabulations, transcripts of original data, or access to files containing original data: The Bureau of Labor Statistics, and the Children's Bureau of the United States Department of Labor; the Bureau of Home Economics, the Division of Farm Population and Rural Life, and the Division of Farm Management and Costs of the United States Department of Agriculture; the Heller Committee for Research in Social Economics; the Committee on the Cost of Medical Care; the New York State Board of Housing; Mr. Carle C. Zimmerman and the University of Minnesota Experiment Station; the Department of Rural Sociology and the Agricultural Experiment Station, University of Wisconsin; Professor T. C. McCormick, of the University of Arkansas; and to various secretaries of Chambers of Commerce and others who assisted in the distribution and filling out of our own questionnaires.

1. *Surveys of family expenditures, 1918-30.* Surveys of family expenditures are numerous. Only a limited number of them, however, can be used for determining the allocation of family income among the various purposes for which income is used. In many investigations the income of the family has not been obtained; in others expenditures have been obtained for only a few items, or so many items are lumped together indiscriminately as to make the results of little value. Even in the case of those surveys in which adequate data were secured, the tabulations published have usually been made with particular purposes in view,

and are not comparable with the published tabulations of other surveys.

The data given in the tables on pages 246-51 and charted in the text, Chapter VI, are drawn from the most important surveys of family expenditures which provide reasonably complete data both in respect to income and in respect to expenditures. For the most part they are the results of special tabulations made by the staff of the Institute of Economics, or by other agencies for the purposes of this book.

A list is given below of the publications relating to the various investigations from which the data given in the tables on pages 246-51 have been drawn, together with a statement of the character of the special tabulations which have been made. These investigations are designated by the letters used in the charts in Chapter VI.

- A. "Cost of Living in the United States," *U. S. Bureau of Labor Statistics Bulletin No. 357* (1924). Tabulations made from printed tables. "Home maintenance" includes rent, fuel and light, furniture and furnishings, telephone, moving, cleaning supplies, servant, and personal property insurance. "Attire" includes clothing, laundry, toilet articles and barber. "Other living" includes all miscellaneous items not elsewhere classified. "Savings" includes life, health, and accident insurance premiums, and the net surplus or deficit.
- B. Jessica B. Peixotto (Heller Committee for Research in Social Economics of the University of California), *How Workers Spend a Living Wage*, 1929. Tabulations made from transcripts furnished by courtesy of the Heller Committee. "Home maintenance" includes rent (or rent-equivalent in the form of principal and interest on mortgage, taxes, assessments, repairs, insurance, and other housing costs) and house operation. "Attire" includes clothing and personal upkeep. "Other living" includes general recreation, transportation, education, tobacco, church and charity, medical care, union dues, gifts, contributions to dependents, funeral expenses, and unclassified expenses. "Savings" includes investment and savings, adjusted for surplus or deficit.
- C. Heller Committee for Research in Social Economics of

the University of California, *Spending Ways of a Semi-Skilled Group*, 1931. Tabulations were made from transcripts furnished by courtesy of the Heller Committee. Items included under the various headings are the same as in "B."

- D. U. S. Bureau of Labor Statistics, "Cost of Living of Federal Employees in Five Cities," *Monthly Labor Review*, August, September, and October 1929. Tabulations made in part from printed tables and in part (clothing and home maintenance) from transcripts of original data obtained by courtesy of Isador Lubin, commissioner of labor statistics. "Home maintenance" includes rent (or rental value of owner-occupied home), heating and lighting, furniture and furnishings, personal property insurance, radio, telephone, household incidentals, and servant hire. "Attire" includes clothing, laundry, and barber. "Other living" includes street car fares, automobile and motorcycle expense, garage rent, traveling and moving expenses, health expense, death expense, labor unions, papers and books, music, school, personal property and poll taxes, church, lodges, tobacco, moving pictures, vacations, gifts, charity, and other miscellaneous items. "Savings" includes life, accident, and health insurance, retirement deduction, and surplus or deficit.
- E. "Welfare of Children of Maintenance-of-Way Employees," *U. S. Children's Bureau Publication No. 211*, 1932. Tabulations made from transcripts of original data made available through the courtesy of Miss Grace Abbott, chief of the Children's Bureau. "Home maintenance" includes rent (or rental equivalent in the form of property payments and expenses), fuel and light, furniture, and household operation. "Attire" includes clothing and barbering. "Other living" includes transportation, health, education, taxes, bank charges, legal service, ceremonials, recreation, trips and travel, contributions, dependents, and miscellaneous items of expense. "Savings" includes insurance and reported savings, with an adjustment for probable under-reporting of savings—that is, half of item "unclassified."
- F. Heller Committee for Research in Social Economics and

- Constantine Panunzio, *How Mexicans Earn and Live*, 1933. Tabulations made from transcripts furnished by courtesy of the Heller Committee. Items included under the various headings the same as in "B."
- G. Lewis S. Reed (The Committee on the Cost of Medical Care), *The Ability to Pay for Medical Care*, 1933. Tabulations made from original questionnaires, furnished by courtesy of Maurice Leven and Lewis S. Reed. "Home maintenance" includes rent (or rental value of owner-occupied home), furniture and furnishings, maid and laundry service, household soaps and cleaning supplies, fuel, light, gas, telephone, water, and ice. "Attire" includes clothing, toilet articles and services, jewelry and watches. "Other living" includes items of transportation, amusements, education, stationery and postage, toys and gifts, flowers, church, charity and club dues, medical service, and other miscellaneous expenses. "Savings" includes life, accident, and health insurance premiums, excess of payments (principal and interest, repairs and improvements, taxes and assessments, and insurance) over rental value of owner-occupied homes, and surplus or deficit. "Income" includes excess of rental value over payments on owner-occupied homes.
- H. Jessica B. Peixotto, *Getting and Spending at the Professional Standard of Living*, 1927. Tabulations made from transcripts furnished by courtesy of the Heller Committee. Items included under the various headings the same as in "B."
- I. Carle C. Zimmerman, "Incomes and Expenditures of Village and Town Families in Minnesota," and "Incomes and Expenditures of Minnesota Farm and City Families, 1927-28," *University of Minnesota Agricultural Experiment Station Bulletins Nos. 253 and 255*. Tabulations made in part from published tables, and in part from special tables prepared through the courtesy of Mr. Zimmerman and the University of Minnesota Agricultural Experiment Station. Tabulations relating to the two investigations have been combined, after careful scrutiny indicated that the habits of expenditure of the village and town families did not differ significantly from those of



the city families. "Home maintenance" includes repairs, taxes, rent, insurance, light and fuel, household operation, music, telephone, domestic help, and other household items. "Attire" includes clothing, and toilet and barber. "Other living" includes automobile, health, religion and charity, education, reading, gifts, travel, tobacco, shows and movies, other entertainment, organization dues, vacation, and other miscellaneous expenses. "Savings" includes all investments and reported savings, including insurance premiums, adjusted for the difference between total income and total expenditures.

- J. Asher Achinstein, *Report of the State Board of Housing on the Standard of Living of 400 Families in a Model Housing Project, 1931*. Tabulations made in part from published tables and in part from tables furnished by courtesy of Mr. Achinstein. "Home maintenance" includes rent (adjusted to take account of interest on stock), house operation, and furniture and furnishings. "Attire" includes clothing, and beauty and barber shop. "Other living" includes education, health, recreation, car fare, automobile, church and charity, organizations and societies, tobacco, and miscellaneous expenses. "Savings" includes investments, life insurance premiums, and the surplus or deficit of income as compared with expenditures. "Income" includes reported income, and also net value of interest on stock.
- K. E. L. Kirkpatrick and H. W. Hawthorne, *Sources and Uses of Income Among 300 Farm Families of Vinton, Jackson, and Meigs Counties, Ohio, 1926*, U. S. Bureau of Agricultural Economics (mimeographed) 1928. Tabulations made from transcripts of original data made available through the courtesy of Mr. C. J. Galpin of the Division of Farm Population and Rural Life. "Home maintenance" includes rental value of home (estimated at 10 per cent of value), furniture and furnishings, and household operation. "Attire" includes clothing, jewelry, and toilet articles. "Other living" includes transportation, health, education, reading matter, organization dues, church, recreation, gifts, candy, tobacco, and unclassified expenses. "Savings" includes life insurance premiums,

debts paid, change in farm inventory, and cash surplus or deficit. "Income" includes living from farm and change in farm inventory, as well as cash income.

- L. "Cost of Living and Population Trends in Laurel County Kentucky," "Farm Management and Incomes of Farm Families in Laurel County, Kentucky," "The Standard of Living of Farm Families in Grayson County, Kentucky," and "Farm Organization and Management in Grayson County," *Agricultural Experiment Station of the University of Kentucky Bulletins Nos. 301, 305, 316, and 317, 1930 and 1931*. Tabulations made from transcripts of original data made available through the courtesy of the Kentucky Agricultural Experiment Station and the Division of Farm Management and Costs, United States Department of Agriculture. Items included same as in "K."
- M. E. L. Kirkpatrick, P. E. McNall, and May L. Cowles, "Farm Family Living in Wisconsin," *Agricultural Experiment Station of the University of Wisconsin Research Bulletin No. 114* (and supplementary tables), 1933. Tabulations made from transcripts of original data, courtesy of Mr. E. L. Kirkpatrick and the Division of Farm Management and Costs, United States Department of Agriculture. Items included same as in "K."
- N. Faith M. Williams, "Variations in Farm Family Living in the Southern Appalachian," *Economic and Social Problems and Conditions of the Southern Appalachian* (Miscellaneous Publication No. 205, U. S. Department of Agriculture, 1934). Tabulations made from transcripts of original data made available through the courtesy of the Bureau of Home Economics and the Division of Farm Management and Costs, U. S. Department of Agriculture. Items included same as in "K."
- O. T. C. McCormick, "Farm Standards of Living in Faulkner County, Arkansas," *University of Arkansas Agricultural Experiment Station Bulletin No. 279, 1932*. Tabulations made from table prepared by Mr. McCormick. "Home maintenance" includes rental value of home, fuel and light, furnishings and equipment, and miscellaneous household expense. "Attire" includes

clothing and miscellaneous personal items. "Other living" includes health, advancement, social and recreational expense, church and charity, and taxes. "Savings" includes life insurance and reported savings, and the excess of income over expenditures, which is presumed to have been reinvested in the farm.

- P. Helen Canon, "The Family Finances of 195 Farm Families in Tompkins County, New York, 1927-28," *Cornell University Agricultural Experiment Station Bulletin No. 522*, 1931. Tabulations made from published tables. Original groups relate to cash receipts, from which average income has been computed by deducting cash farm expenses and adding value of farm products used by the household, the net farm rental, and the change in farm inventory. "Home maintenance" includes rental value of home, home equipment, house operation, and fuel from farm. "Attire" includes clothing, and barber and toilet. "Other living" includes transportation, health, schooling, books and music, tobacco, gifts, dues and recreation, and miscellaneous items. "Savings" includes investments, change in farm inventory, and balance between income and expenditures.

## 246 AMERICA'S CAPACITY TO CONSUME

## 1. EXPENDITURES OF NON-FARM

Chart Designation	Character of Families	Location	Year	Income Range	Number of Families
Average about \$800					
A.	Wage-earners	United States	1918	Under \$900	332
E.	Maintenance-of-way	Ten states	1928	600-900	80
F.	Mexican	San Diego	1929-30	Under 1,000	22
G.	Urban	Five Middle Atlantic and North Central states	1930	Under 1,000	20
Average about \$1,300					
A.	Wage-earners	United States	1918	\$1,200-1,500	3959
D.	Federal government employees	Five cities	1927-28	Under 1,500	47
E.	Maintenance-of-way	Ten states	1928	1,200-1,500	74
F.	Mexican	San Diego	1929-30	1,250-1,500	23
Average about \$1,600					
A.	Wage-earners	United States	1918	1,800-2,100	1594
C.	Street-car men	San Francisco (East Bay Region)	1924-25	1,800-2,000	23
D.	Federal government employees	Five cities	1927-28	1,500-2,100	141
E.	Maintenance-of-way	Ten states	1928	1,800-2,100	40
F.	Mexican	San Diego	1929-30	1,750-2,000	8
G.	Urban	Five Middle Atlantic and North Central states	1930	1,500-2,000	27
Average about \$2,700					
A.	Wage-earners	United States	1918	Over \$2,500	353
B.	Typographers	San Francisco	1920-21	2,500-3,000	40
C.	Street-car men	San Francisco (East Bay Region)	1924-25	2,500-3,000	5
D.	Federal government employees	Five cities	1927-28	2,400-3,000	143
E.	Maintenance-of-way	Ten states	1928	2,700-3,000	10
G.	Urban	Five Middle Atlantic and North Central states	1930	2,500-3,000	10
Average about \$3,400					
B.	Typographers	San Francisco	1920-21	3,000-4,000	17
D.	Federal government employees	Five Cities	1927-28	3,300-3,600	30
G.	Urban	Five Middle Atlantic and North Central states	1930	3,000-4,000	14
H.	University faculty	Berkeley	1922	3,000-4,000	23
I.	Village and urban	Minnesota	1926-28	3,000-4,000	69
J.	Residents, Amalgamated Apts.	New York City	1930	3,000-3,500	58

THE UTILIZATION OF INCOME

247

FAMILIES, 1918-30

Average Size of Families	Average Annual Income	Average Annual Expenditures					Chart Designation
		Food	Home Maintenance	Attire	Other Living	Savings	
Average about \$800							
4.3	\$ 813	\$ 372	\$ 224	\$ 125	\$ 96	\$ -3	A.
4.5	792	371	192	125	101	5	E.
5.1	764	382	229	115	83	-45	F.
—	775	346	412	53	88	-124	G.
Average about \$1,300							
4.7	1,344	516	338	229	178	83	A.
4.0	1,324	523	454	184	175	-12	D.
5.2	1,314	598	316	186	184	30	E.
5.3	1,349	505	333	243	232	36	F.
Average about \$1,800							
5.1	1,925	627	451	343	282	222	A.
4.0	1,889	782	559	246	364	-61	C.
3.9	1,835	675	657	260	321	-78	D.
5.4	1,900	708	500	269	324	102	E.
5.1	1,883	580	422	318	380	184	F.
—	1,729	634	582	181	253	79	G.
Average about \$2,700							
6.4	2,790	860	534	550	454	391	A.
3.4	2,662	932	619	318	702	91	B.
3.8	2,738	876	863	371	530	99	C.
4.2	2,641	892	871	405	460	13	D.
6.9	2,798	897	508	284	1,030	79	E.
4.0	2,667	715	817	270	577	289	G.
Average about \$3,400							
4.0	3,475	875	695	353	902	651	B.
4.3	3,469	985	976	520	698	290	D.
3.9	3,435	752	1,001	407	569	706	G.
3.4	3,438	683	1,023	407	993	333	H.
—	3,368	663	688	403	688	926	I.
—	3,343	1,124	1,201	450	697	-129	J.

## 248 AMERICA'S CAPACITY TO CONSUME

## 1. EXPENDITURES OF NON-FARM

Chart Designation	Character of Families	Location	Year	Income Range	Number of Families
Average about \$5,000					
D.	Federal government employees	Five cities	1927-28	Over \$3,600	32
G.	Urban	Five Middle Atlantic and North Central states	1930	4,000-6,000	4
H.	University faculty	Berkeley	1922	4,500-6,000	30
I.	Village and urban	Minnesota	1926-28	5,000-6,000	26
J.	Residents, Amalgamated Apts.	New York City	1930	Over 4,000	34
Average about \$7,500					
G.	Urban	Five Middle Atlantic and North Central states	1930	6,000-10,000	6
H.	University faculty	Berkeley	1922	6,000-10,000	12
I.	Village and urban	Minnesota	1926-28	6,000-10,000	27
Average about \$11,000					
G.	Urban	Five Middle Atlantic and North Central states	1930	10,000-15,000	9
H.	University faculty	Berkeley	1922	10,000-15,000	7
I.	Village and urban	Minnesota	1926-28	10,000-15,000	17
Average about \$16,000					
G.	Urban	Five Middle Atlantic and North Central states	1930	15,000-20,000	2
I.	Village and urban	Minnesota	1926-28	15,000-25,000	7

THE UTILIZATION OF INCOME

249

FAMILIES, 1918-30 (Continued)

Average Size of Families	Average Annual Income	Average Annual Expenditures					Chart Designation
		Food	Home Maintenance	Attire	Other Living	Savings	
Average about \$5,000							
4.6	\$4,320	\$1,192	\$1,166	\$ 562	\$ 986	\$ 414	D.
3.0	4,946	833	1,135	519	785	1,674	G.
3.6	5,219	946	1,462	553	1,903	355	H.
—	5,282	589	1,124	480	1,119	1,970	I.
—	4,955	1,346	1,592	677	1,123	217	J.
Average about \$7,500							
3.5	8,202	1,211	1,803	853	1,593	2,742	G.
3.4	7,585	948	2,491	599	2,697	852	H.
—	7,358	796	1,497	743	1,801	2,520	I.
Average about \$11,000							
3.7	11,746	1,549	2,888	1,119	2,453	3,737	G.
3.9	11,462	1,619	3,714	909	3,903	1,318	H.
—	11,810	947	1,441	813	2,280	6,328	I.
Average about \$16,000							
3.0	15,973	2,147	3,799	1,221	1,665	7,141	G.
—	17,329	908	2,055	715	2,118	11,643	I.

## 2. EXPENDITURES OF

Chart Designation	Location	Year	Income Range (In dollars)	Number of Families
Average about \$400				
K.	Ohio (three counties)	1926	300 to 600	59
L.	Kentucky (two counties)	1928-29	300 to 600	115
M.	Wisconsin (seven counties)	1929	Under 600	521
N.	Appalachian (two counties)	1930	300 to 600	167
Average about \$800				
K.	Ohio (three counties)	1926	600 to 900	83
L.	Kentucky (two counties)	1928-29	600 to 900	89
M.	Wisconsin (seven counties)	1929	750 to 1,000	109
N.	Appalachian (two counties)	1930	600 to 900	142
O.	Arkansas (one county)	1924	500 to 1,000	123
P.	New York (one county)	1927-28		72
Average about \$1,300				
K.	Ohio (three counties)	1926	1,200 to 1,500	38
L.	Kentucky (two counties)	1928-29	1,200 to 1,500	14
M.	Wisconsin (seven counties)	1929	1,250 to 1,500	115
N.	Appalachian (two counties)	1930	1,200 to 1,500	48
O.	Arkansas (one county)	1924	1,000 to 1,500	144
P.	New York (one county)	1927-28		38
Average about \$1,800				
K.	Ohio (three counties)	1926	1,500 to 2,500	36
L.	Kentucky (two counties)	1928-29	1,500 to 2,500	27
M.	Wisconsin (seven counties)	1929	1,500 to 2,000	171
N.	Appalachian (two counties)	1930	1,500 to 2,500	56
O.	Arkansas (one county)	1924	1,500 to 2,000	69
Average about \$2,800				
K.	Ohio (three counties)	1926	2,500 to 3,500	3
L.	Kentucky (two counties)	1928-29	2,500 to 3,500	3
M.	Wisconsin (seven counties)	1929	2,500 to 3,000	73
N.	Appalachian (two counties)	1930	2,500 to 3,500	7
Average about \$4,000				
K.	Ohio (three counties)	1926	3,500 and over	3
L.	Kentucky (two counties)	1928-29	3,500 and over	2
M.	Wisconsin (seven counties)	1929	4,000 to 5,000	14
N.	Appalachian (two counties)	1930	3,500 and over	3
P.	New York (one county)	1927-28		4



THE UTILIZATION OF INCOME

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FARM FAMILIES, 1924-30

Average Size of Family	Average Annual Income (In dollars)	Average Annual Expenditures (In dollars)						Chart Designation
		Food	Home Maintenance	Attire	Other Living	Savings		
Average about \$400								
3.0	485	350	116	96	103	-180	K.	
4.3	469	317	86	77	50	-60	L.	
4.0	394	325	129	95	102	-256	M.	
4.9	470	325	105	98	91	-148	N.	
Average about \$800								
3.9	751	420	133	143	124	-71	K.	
5.1	746	400	94	108	74	70	L.	
4.1	873	454	304	151	209	-245	M.	
5.6	729	439	127	132	142	-111	N.	
	784	443	148	109	64	20	O.	
	882	458	316	129	168	-189	P.	
Average about \$1,300								
4.7	1,325	542	177	201	169	237	K.	
5.2	1,333	528	174	177	133	325	L.	
4.4	1,376	516	379	183	291	9	M.	
6.5	1,298	562	198	196	249	94	N.	
	1,250	597	198	159	111	185	O.	
	1,547	492	415	150	240	250	P.	
Average about \$1,800								
4.9	1,846	586	193	267	215	584	K.	
5.0	1,818	509	187	241	229	652	L.	
4.3	1,722	533	386	202	272	329	M.	
6.6	1,807	656	236	226	217	473	N.	
	1,700	651	268	187	158	436	O.	
Average about \$2,800								
3.7	2,896	586	389	366	320	1,236	K.	
5.0	2,935	620	233	279	165	1,638	L.	
4.8	2,716	612	498	258	352	996	M.	
6.6	2,791	759	301	599	584	548	N.	
Average about \$4,000								
4.0	3,821	510	309	359	170	2,473	K.	
6.5	3,933	524	269	247	103	2,791	L.	
4.6	4,373	740	833	363	468	1,969	M.	
5.0	4,430	907	148	303	324	2,749	N.	
	4,130	692	567	270	530	2,071	P.	

2. *Applicability of the 1918-19 survey to conditions of recent years.* It is sometimes claimed that important changes have occurred since 1918 in habits of consumption, and that the character of family expenditures at that time, as revealed in the cost of living investigation of the Bureau of Labor Statistics, is no longer typical. Specifically, it is suggested that the ownership of automobiles has had a very important influence upon the character of family expenditures.

From such fragmentary evidence as is available, it is estimated that not over one-third of all wage earners' families owned automobiles in 1929.<sup>1</sup> Among the families included in the 1918-19 survey, 15 per cent reported expenditure for automobiles, most of whom presumably owned them. While this is a substantial increase during the decade in the percentage of wage-earning families owning automobiles, it involves changes in habits of consumption among only 15 or 20 per cent of all wage earners' families. Moreover, a considerable part of the cost of maintaining an automobile constitutes a direct substitution for other types of transportation expense, and does not involve any change in the proportion of income spent for other purposes. It does not appear, therefore, that increased ownership of automobiles, between 1918 and 1929, made any great alteration in the proportion of the incomes of wage-earners' families spent for major purposes.

It may be interesting to note in this connection that during

<sup>1</sup> The average number of passenger automobiles in use during 1929, when allowance is made for duplicate registrations, for cars scrapped during the year, and for other factors, is estimated at 20,800,000. Of these, more than 4 million were on farms, and probably more than a million were owned by business concerns. (R. L. Polk and Company estimate that from 6 to 8 per cent of registrations of passenger cars are in the names of business concerns. The percentage owned by business concerns is probably greater than this.) This leaves between 14 and 15 million automobiles owned by 22 million non-farm families and 9 million unattached individuals. That is, not more than half of the non-farm families and unattached individuals owned automobiles. It is reasonable to assume that the great majority of the families of business and professional men, in the upper income groups, had automobiles (some of them, in fact, had two or more automobiles), and that a larger percentage of unattached individuals than wage-earners' families had them. Under these circumstances, it is hardly possible that more than a third of the families of wage earners and low salaried men owned automobiles.

the three decades from 1890 to 1918 there was little change in the proportion of income spent by wage earners' families for major purposes, notwithstanding the fact that this was a period of rapid progress. There are, to be sure, some differences in the average percentages of income devoted to the various purposes, as reported by the Commissioner of Labor for 1890 and as reported by the Bureau of Labor Statistics for 1918-19. These differences, however, are chiefly attributable to the differences in the character of the sample, and to changes in the relative prices of basic necessities and in the incomes of wage earners.<sup>2</sup> When adjustments are made for these factors, so far as it is possible to do so, there is no evidence of important changes in habits of consumption aside from the substitution of certain types of articles for others which serve the same general purpose.

Price changes have been more important than changes in habits of consumption in making the survey of 1918-19 somewhat inapplicable to conditions of more recent years. The index of the cost of living of the National Industrial Conference Board was, to be sure, at approximately the same level in 1918 as in 1930, and in both of these years only 4 per cent lower than in 1929.<sup>3</sup> Prices were, however, advancing rapidly during the period covered by the 1918-19 investigations, and this made it difficult for housewives to estimate their annual expenditures accurately. Further, there have been considerable changes since 1918 in the relative prices of various types of goods and services, clothing and food having been cheaper during the years from 1923 to 1930 than in 1918, while housing, fuel and light, and sundries were more expensive than in 1918.

Finally, as noted in Chapter VI, page 68, important types of families, notably families consisting of husband and wife only, were omitted from the 1918-19 investigation. These omissions are such that the entire sample was drawn from approximately one-half of the wage-earning class. It is therefore highly probable that the patterns of expenditure of this half differed to some extent from those of the other half.

<sup>2</sup> Based on unpublished computations from data in the sixth and seventh *Annual Reports of the Commissioner of Labor*, 1890 and 1891, and in *U. S. Bureau of Labor Statistics Bulletin No. 357*.

<sup>3</sup> 1932 annual supplement of *Survey of Current Business*, pp. 22-23.

3. *Questionnaire distributed by the Institute of Economics.* On account of the inadequacy of the data relating to savings and consumptive expenditures among families in the middle and wealthy classes, the Institute of Economics in 1933 prepared and circulated a questionnaire relating to the use of income. This questionnaire was widely distributed among business men, federal government employees, university professors, and families of university students.

Table 3 on the opposite page shows, for the year 1929, the number of questionnaires tabulated in the various income groups, together with the average income, living expenses, and savings.

4. *Generalized patterns of income utilization.* In the table on page 257, estimates are given of the average amounts spent for each of the major purposes—food, home, attire, other living, and savings—by all families in the various income strata. These estimates are based upon data drawn from surveys of family expenditures. A part of the data utilized in preparing these estimates has been given in the foregoing sections of this appendix. However, some of the figures relate to income groups not covered by the charts in Chapter VI, or the tables on pages 246-51. Use has also been made of three surveys not mentioned in the preceding sections: (1) savings of 199 professional families at New Haven, Connecticut in 1928; (2) cost of food among 149 families in Providence, Rhode Island in 1930; and (3) living expenses of 125 rural families in Tennessee, Minnesota, Wisconsin, and New York, 1930.<sup>4</sup>

It is apparent that the various surveys used are not entitled to be recognized as of equal importance, both on account of variations in the size of the samples and the conditions under which the original data were collected, as well as the varying degrees

<sup>4</sup>The data relating to professional families in New Haven were obtained through the courtesy of Professor Maurice R. Davie (see Henderson and Davie, *Incomes and Living Costs of a University Faculty*). Those relating to families in Providence, Rhode Island were taken from an unpublished study made by members of the Department of Economics of Brown University, through the courtesy of Nathanael H. Engle. Those relating to rural families in Tennessee, Minnesota, Wisconsin, and New York were collected by the Committee on the Cost of Medical Care, and made available through the courtesy of Lewis S. Reed and Maurice Leven.

### 3. LIVING EXPENSES AND SAVINGS OF FAMILIES OF BUSINESS AND PROFESSIONAL MEN, 1929<sup>a</sup>

Income Class (In dollars)	Number of Cases	Average Reported Income <sup>b</sup>	Reported Disposal of Income					Adjusted Averages		
			Living Expenses <sup>c</sup>	Home Payments <sup>d</sup>	All Savings <sup>e</sup>	Losses <sup>f</sup>	Unaccounted for	Income <sup>g</sup>	Living Expenses <sup>h</sup>	Savings <sup>i</sup>
1,000- 1,499	27	1,223	1,200	26	25	—	-2	1,223	1,226	-3
1,500- 1,999	65	1,749	1,522	58	181	10	36	1,739	1,616	123
2,000- 2,499	70	2,287	1,838	101	409	25	15	2,262	1,953	308
2,500- 2,999	143	2,726	2,246	89	422	9	48	2,717	2,384	333
3,000- 3,499	148	3,182	2,480	111	616	33	52	3,149	2,644	505
3,500- 3,999	152	3,704	2,908	147	689	26	81	3,678	3,136	542
4,000- 4,499	135	4,189	3,140	198	906	89	54	4,100	3,392	708
4,500- 4,999	159	4,717	3,592	236	1,005	70	50	4,647	3,878	769
5,000- 5,999	256	5,371	4,039	234	1,180	83	70	5,288	4,343	946
6,000- 6,999	123	6,354	4,589	214	1,496	113	156	6,241	4,958	1,282
7,000- 7,999	64	7,405	5,062	220	2,053	56	234	7,349	5,516	1,833
8,000- 8,999	37	8,399	5,626	315	2,507	47	218	8,352	6,159	2,192
9,000- 9,999	31	9,323	6,457	168	2,337	266	264	9,057	6,889	2,169
10,000- 11,999	38	10,714	6,776	334	3,454	293	191	10,421	7,301	3,120
12,000- 14,999	28	13,056	7,567	207	5,075	4	411	13,052	8,184	4,868
15,000- 19,999	22	16,268	8,461	364	6,420	227	1,161	16,041	9,985	6,056
20,000- 29,999	18	23,928	14,990	846	8,530	685	-277	23,243	15,559	7,684
30,000- 40,999	14	37,449	19,365	—	16,866	574	643	36,875	20,008	16,866
50,000- 99,999	5	66,777	38,175	—	28,602	—	—	66,777	38,175	28,602
100,000-199,999	4	125,618	62,467	—	60,376	—	2,774	125,618	65,241	60,376
200,000-399,999	2	295,224	137,029	—	106,552	51,643	—	243,581	137,029	106,552
400,000 and over	1	659,000	394,000	—	265,000	—	—	659,000	394,000	265,000

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<sup>a</sup> Tabulated from replies to questionnaire distributed by the Institute of Economics.

<sup>b</sup> Including profits on the sale of securities.

<sup>c</sup> Including taxes and contributions.

<sup>d</sup> Interest and amortization payments, which may be regarded chiefly as the equivalent of rent rather than as an investment.

<sup>e</sup> Including all home payments.

<sup>f</sup> Chiefly from stock market operations.

<sup>g</sup> Average reported income minus average loss.

<sup>h</sup> Reported living expenses, plus home payments and income unaccounted for.

<sup>i</sup> All savings minus home payments (interest and amortization payments).

by which the samples are representative of the population as a whole. It is not possible, however, to rate the reliability of the data in the various samples, nor to determine their relative importance as samples of the families in the nation at large. There is, in consequence, no arithmetical or mechanical method of weighting the data from the various samples which may be considered to be especially appropriate. On the other hand, the fact that the various surveys show a considerable degree of similarity as to the proportions of income used for each of the major purposes, and the fact that the chief differences among them are for the most part assignable to the known peculiarities of the sample or survey, suggest that various methods of weighting the data from the various surveys would yield substantially the same result, provided, of course, that care is taken not to overweight those showing the largest variations from the others (for example, savings of village and urban families in Minnesota and of the faculty of Yale University).

The procedure followed in combining the data drawn from the various surveys was that of making readings from smoothed curves. The data from the various sources were first plotted on double logarithmic paper, six separate charts being made: (1) food; (2) shelter and home maintenance; (3) attire; (4) "other living"; (5) total living; and (6) savings. The data from the Institute of Economics questionnaire were included, in the charts relating to total living and to savings. In all charts, expenditures were plotted as functions of income. Smoothed free-hand curves were drawn through the points plotted, a separate curve being drawn for the data from each survey. Thus, for example, the chart relating to food contains 13 curves, since in this case data were drawn from that number of separate investigations. On these charts, small income intervals were blocked off, and the midpoints of those intervals selected for reading—the reading in respect to expenditures being approximately the mean or median among the points on the various curves, with regard for particular samples which, in the writer's judgment, were more or less representative than the others. Slight adjustments were made in the readings thus obtained so that the sum of the expenditures equalled the income at the point to which they referred. The adjusted readings were then plotted and

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4. UTILIZATION OF FAMILY INCOMES

a. Farm Families

Income Class	Average Expenditures				
	Food	Home	Attire	Other Living	Savings
0 to 500 .....	250	75	40	35	-80
500 to 1,000 .....	400	150	100	100	-20
1,000 to 1,500 .....	490	260	180	200	100
1,500 to 2,000 .....	550	340	210	260	370
2,000 to 2,500 .....	600	410	250	310	660
2,500 to 3,000 .....	630	480	280	360	980
3,000 to 3,500 .....	660	550	310	410	1,300
3,500 to 4,000 .....	680	600	340	450	1,660
4,000 to 4,500 .....	700	630	360	490	2,050
4,500 to 5,000 .....	720	650	370	540	2,450
5,000 to 6,000 .....	730	670	380	600	3,050
6,000 to 7,000 .....	740	690	390	670	3,950
7,000 to 8,000 .....	750	720	400	730	4,840
8,000 to 9,000 .....	750	740	410	800	5,750
9,000 to 10,000 .....	750	760	420	870	6,650

b. Non-Farm Families

Income Class	Average Expenditures				
	Food	Home	Attire	Other Living	Savings
0 to 1,000 .....	360	250	110	110	-60
1,000 to 1,500 .....	490	360	180	210	10
1,500 to 2,000 .....	610	470	250	310	100
2,000 to 2,500 .....	700	580	300	470	180
2,500 to 3,000 .....	770	690	350	640	280
3,000 to 3,500 .....	820	820	390	800	400
3,500 to 4,000 .....	860	960	450	960	510
4,000 to 4,500 .....	900	1,110	490	1,120	620
4,500 to 5,000 .....	920	1,250	530	1,260	780
5,000 to 6,000 .....	940	1,460	590	1,480	990
6,000 to 7,000 .....	970	1,720	680	1,770	1,320
7,000 to 8,000 .....	1,000	1,930	760	2,050	1,720
8,000 to 9,000 .....	1,030	2,100	820	2,280	2,240
9,000 to 10,000 .....	1,060	2,290	900	2,500	2,720
10,000 to 15,000 .....	1,150	2,620	1,040	2,980	4,270
15,000 to 20,000 .....	1,300	3,600	1,400	4,300	6,600

smooth freehand curves drawn. The figures given in Table 4, for incomes up to \$20,000, are readings taken from these final curves, rounded to the nearest multiple of ten dollars.

To obtain estimates of average expenditures of families with incomes over \$20,000, a variation of the same method was used. The adjusted averages for all living expenses and for savings, computed from replies to the Institute of Economics questionnaire, were plotted as functions of income. The curves thus obtained were continuations of the corresponding curves for families with incomes below \$20,000, and were found to be virtually straight lines on double logarithmic paper, with all points plotted falling close to the lines drawn. In view of the character and closeness of fit of these functions over a wide range of incomes, these lines were extrapolated to cover the remaining income range. Also, total expenses (excluding savings) were allocated to the four categories, food, shelter and home maintenance, attire, and "other living," by straight line extrapolations on double logarithmic paper of the data for the income range from \$10,000 to \$20,000, with a residual allotted to other living. The readings from extrapolated curves for the four separate categories gave a figure for total living expenses, in the upper income levels, less than that given by the data from the Institute of Economics questionnaire. This is probably due to the fact that contributions, which are of relatively little importance in the expenses of families with incomes under \$20,000, assume great importance among families with larger incomes.

It is apparent from this description of method that the estimates relating to families in the upper income levels are not as reliable as those for families with incomes below \$20,000. For that reason the readings from the curves for the higher income groups are not here presented in detail. Since, however, the number of families in these income levels is relatively small, it is believed that the aggregate consumptive expenditures and aggregate savings shown in the tables in Chapters VII and VIII, for families with incomes of more than \$20,000, are approximately correct.

5. *Disposition of aggregate family income, 1929.* The estimates of average expenditures for major purposes by families, as shown in the table on page 257 and as estimated for families with incomes over \$20,000, were multiplied, in each income group, by the number of families in that group. In this process, the same income intervals were used as in Table 37, Appendix A, p. 227. The estimates thus obtained of aggregate expenditures



for each of the major purposes by all families in each income group, are given in Tables 5 and 6, pp. 260-61. These estimates are the basis for the tables used in Chapters VII and VIII.

In these estimates of aggregate expenditures, the figures for savings have been adjusted to take account of the small discrepancies, due to the use of rounded figures of average expenditures, between the computations of aggregate income, given in Appendix A, Table 39, p. 229, and the sum of the estimated amounts used for the five major purposes. The figures for savings are less reliable than those for the four types of living expenses. This is due in part to the greater variation in savings than in other items among the figures derived from surveys of family expenditures, and in part to the fact that errors in the reporting of living expenses in the original collection of data, are also reflected in the figures of savings.

In order to obtain estimates of the use of income by families in groups each containing 10 per cent of all families, the aggregates in the preceding tables were plotted as cumulative distributions, and readings made at intervals of 10 per cent of the total number of families. These readings were the basis for the estimates in Table 7, page 262.

**5. DISPOSITION OF AGGREGATE INCOME OF FARM FAMILIES, 1929**  
(In millions of dollars)

Income Class	Number of Families <sup>a</sup> (In thousands)	Aggregate Income <sup>b</sup>	Living Expenses <sup>c</sup>				Total Living Expenses	Savings
			Food	Home	Attire	Other <sup>d</sup>		
Under 0.....	70	\$ -15	\$ 31	\$ 16	\$ 10	\$ 12	\$ 69	\$-84
0- 500.....	1,382	436	346	104	55	48	553	-117
500- 1,000.....	1,712	1,249	685	257	171	171	1,284	-35
1,000- 1,500.....	1,005	1,235	493	261	181	201	1,136	99
1,500- 2,000.....	607	1,050	334	206	127	158	825	225
2,000- 2,500.....	393	877	236	161	98	122	617	260
2,500- 3,000.....	221	602	139	106	62	79	386	216
3,000- 3,500.....	135	436	89	74	42	55	260	176
3,500- 4,000.....	95	354	64	57	32	43	196	158
4,000- 4,500.....	62	261	43	39	22	30	134	127
4,500- 5,000.....	40	190	29	26	15	22	92	98
5,000- 6,000.....	40	218	29	27	15	24	95	123
6,000- 7,000.....	19	122	14	13	7	13	47	75
7,000- 8,000.....	9	66	7	6	4	7	24	42
8,000- 9,000.....	4	38	3	3	2	3	11	27
9,000-10,000.....	2	22	2	2	1	2	7	15
<b>Total.....</b>	<b>5,796</b>	<b>\$7,141</b>	<b>\$2,544</b>	<b>\$1,358</b>	<b>\$844</b>	<b>\$990</b>	<b>\$5,736</b>	<b>\$1,405</b>

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- Farm families with incomes over \$10,000 included among non-farm families.
- <sup>b</sup> See Appendix A, Table 39, p. 229.
- Class averages derived from these estimates will be inaccurate in the classes in which the number of families is small, because aggregates have been computed prior to the rounding of the frequency figures for number of families.
- <sup>d</sup> Includes taxes and contributions.

**6. DISPOSITION OF AGGREGATE INCOME OF NON-FARM FAMILIES, 1929**  
(In millions of dollars)

Income Class	Number of Families <sup>a</sup> (In thousands)	Aggregate Income <sup>b</sup>	Living Expenses <sup>c</sup>				Total Living Expenses	Savings
			Food	Home	Attire	Other <sup>d</sup>		
Under 0	50	\$-600	\$ 80	\$ 271	\$ 106	\$ 447	\$ 904	\$-1,504
0								
0-500	2,685	1,830	967	671	295	295	2,228	-398
500-1,000	4,749	5,962	2,327	1,710	855	997	5,889	73
1,000-1,500	4,094	7,117	2,497	1,924	1,023	1,269	6,713	404
1,500-2,000	2,811	6,276	1,968	1,630	843	1,321	5,762	514
2,000-2,500	1,767	4,831	1,361	1,220	619	1,131	4,331	500
2,500-3,000	1,312	4,242	1,076	1,076	512	1,049	3,713	529
3,000-3,500	898	3,356	772	862	404	862	2,900	456
3,500-4,000	656	2,780	591	728	322	735	2,376	404
4,000-4,500	474	2,247	436	593	251	598	1,878	369
4,500-5,000	388	1,817	376	514	185	499	1,398	419
5,000-6,000	243	1,421	244	352	138	383	1,046	375
6,000-7,000	168	1,196	173	289	114	316	853	343
7,000-8,000	126	1,000	134	289	114	316	907	2,370
8,000-9,000	304	3,666	350	797	316	466	1,149	707
9,000-10,000	108	1,856	141	390	152	371	807	502
10,000-15,000	59	1,309	83	253	100	279	584	381
15,000-20,000	35	965	53	181	71	438	851	544
20,000-25,000	40	1,395	69	247	97	305	575	409
25,000-30,000	22	984	40	166	64	521	921	695
30,000-40,000	27	1,616	56	248	96	321	566	470
40,000-50,000	12	1,036	30	147	58	331	1,095	1,069
50,000-75,000	16	2,164	47	282	110	656	690	810
75,000-100,000	4	1,500	18	176	59	437	378	517
100,000-250,000	2	895	7	80	33	258	321	517
250,000-500,000	1	545	4	45	18	157	224	321
500,000-750,000	1	545	4	45	18	157	224	321
750,000-1,000,000	1	545	4	45	18	157	224	321
1,000,000 and over	1	3,649	13	221	89	927	1,250	2,399
Total	21,678	69,975	14,501	16,610	7,563	17,567	56,241	13,734

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<sup>a</sup> Farm families with incomes over \$10,000 included among non-farm families.  
<sup>b</sup> See Appendix A, Table 39, p. 229.  
<sup>c</sup> Class averages derived from these estimates will be inaccurate in the classes in which the number of families is small because aggregates have been computed prior to the rounding of the frequency figures for number of families.  
<sup>d</sup> Includes taxes and contributions.

## 7. UTILIZATION OF AGGREGATE INCOME BY FAMILIES, 1929

Decile	Family Income	Aggregate Amount (In billions of dollars)				
		Food	Home	Attire	Other Living*	Savings
1st	\$4,600 and over	2.9	6.6	2.6	9.5	13.0
2d	3,100-4,600	2.3	2.5	1.2	2.5	1.8
3d	2,450-3,100	2.1	1.9	1.0	1.7	1.0
4th	2,000-2,450	2.0	1.6	0.8	1.3	0.7
5th	1,700-2,000	1.6	1.2	0.7	0.9	0.4
6th	1,450-1,700	1.5	1.2	0.6	0.7	0.2
7th	1,250-1,450	1.4	1.0	0.5	0.6	0.1
8th	950-1,250	1.3	0.8	0.4	0.5	0.0
9th	600-950	1.0	0.6	0.3	0.3	-0.1
10th	Under \$600	0.9	0.6	0.3	0.5	-2.0

\* Including taxes and contributions.

6. *Disposition of income by unattached individuals.* Surveys of the use of income by unattached individuals are less numerous and less representative than surveys of family expenditures. In order to make even a crude approximation, therefore, of the disposition of the aggregate income received by unattached individuals, it has been necessary to depend in part upon the data relating to the use of family income.

The method used in making the estimates of aggregate expenditures of unattached individuals, given in the table on pages 264-65, is as follows. Two sets of computations were first made, based, respectively, on the assumptions: (1) that unattached individuals spend the same proportions of their incomes for the five major categories as do families with the same amounts of income; and (2) that unattached individuals spend the same proportions of their incomes for the five major categories as do families having the same income per capita. For example, under the first of these assumptions an individual with an income of \$1,500 was assumed to spend the same amount for food, for shelter and home maintenance, for attire and for other living, and therefore to save just as much, as a family with an income of \$1,500. Under the second assumption, an unattached individual with an income of \$1,500 was assumed to spend one fourth as much for each of these categories as the average family with an income of

\$6,000. The results of these two sets of computations were compared, in the form of average expenditures at various income levels, with the limited data available in surveys of expenditures by single persons.

The two assumptions were also examined, as to their reasonableness, in the light of all the information available to the author as to the habits of living of unattached individuals. Thus, for example, the first assumption was believed to over-estimate the expenditures of unattached individuals for food, since it is not likely that a single person spends as much for food as a family with the same income. On the other hand, the second assumption probably understates the cost of food, since single individuals more commonly eat at restaurants and boarding houses than do families. The true figures in respect to food expenditures therefore probably lie between those obtained by the two sets of computations. Again, in the case of attire, it appeared reasonable to suppose that the results obtained by either of the two computations would tend to be below, rather than above, the actual expenditures of unattached individuals, and this was confirmed by the expenditures for clothing and personal care, as reported in the surveys available.

Adjustments were made to take account of these considerations and a third set of average expenditures of unattached individuals at the various income levels was prepared. These figures were plotted—the estimates for each of the five major purposes treated as functions of income—smooth curves drawn, and readings taken from the curves. These readings for incomes under \$20,000 a year are presented in Table 8, page 264. The aggregate expenditure for each of the items, derived from the readings and the number of unattached individuals in each income class, are given in Table 9, page 265.

The surveys of expenditures of unattached individuals that were made use of in this connection are given below.

Bailey, William B., "Personal Budgets of Unmarried Persons," *Yale Review*, Vol. 10, May 1901-February, 1902.

Bosworth, Louise Marion, "Living Wages of Women Workers," *Supplement to The Annals*, May 11, 1911.

Clark, Sue Anslie and Wyatt, Edith, *Making Both Ends Meet*.

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Gilboy, Elizabeth Waterman, "Demand Curves by Personal Estimate," *Quarterly Journal of Economics*, Vol. XLVI, February, 1932.

Little, Esther Louise and Cotton, William Joseph Henry, *Budgets of Families and Individuals of Kensington, Philadelphia*, University of Pennsylvania.

Meeker, Royal, *A Study of Costs and Standards of Living of Minneapolis Teachers in Relation to Their Salaries*, Central Committee of Teachers Associations, September, 1926.

"Self-Supporting Wage-Earning Women," U. S. Bureau of Labor Statistics, *Monthly Labor Review*, Vol. VI, 1918.

Morton, Grace Margaret, and Clark, Marjorie Ruth, "Income and Expenditures of Women Faculty Members in the University of Nebraska," *Journal of Home Economics*, August, 1930, p. 655.

Saffian, Sadie, "The Income and Expenditures of Forty-two Unmarried Social Workers," *Journal of Home Economics*, August-September, 1933, Vol. 25, No. 7, pp. 563-66. Miss Saffian also furnished unpublished data relating to social workers in Philadelphia.

8. ESTIMATED UTILIZATION OF INCOMES BY UNATTACHED INDIVIDUALS

Income Class	Living Expenses				
	Food	Home	Attire	Other Living	Savings
0- 500.....	150	90	60	40	-40
500- 1,000.....	250	190	170	170	-30
1,000- 1,500.....	330	310	260	310	20
1,500- 2,000.....	370	430	340	430	160
2,000- 2,500.....	410	560	410	560	280
2,500- 3,000.....	440	690	480	690	420
3,000- 3,500.....	470	800	550	820	590
3,500- 4,000.....	490	910	620	970	740
4,000- 4,500.....	510	1,030	690	1,120	880
4,500- 5,000.....	530	1,120	750	1,270	1,070
5,000- 6,000.....	550	1,270	850	1,540	1,250
6,000- 7,000.....	580	1,440	970	1,880	1,600
7,000- 8,000.....	610	1,600	1,080	2,240	1,940
8,000- 9,000.....	640	1,770	1,200	2,570	2,290
9,000-10,000.....	660	1,920	1,320	2,900	2,680
10,000-15,000.....	700	2,300	1,600	3,700	3,800
15,000-20,000.....	750	3,100	2,100	5,200	6,050

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**9. DISPOSITION OF AGGREGATE INCOME OF UNATTACHED INDIVIDUALS, 1929**  
(In millions of dollars)

Income Class	Number of Individuals (In thousands)	Aggregate Income <sup>a</sup>	Living Expenses				Total Living Expenses	Savings
			Food	Home	Attire	Other		
Under 0...	19	-160	12	40	26	63	141	-301
0- 500...	1,580	473	237	142	95	63	537	-64
500- 1,000...	2,522	1,896	630	479	429	429	1,967	-71
1,000- 1,500...	2,028	2,496	669	629	527	629	2,454	42
1,500- 2,000...	1,292	2,232	478	556	439	556	2,029	203
2,000- 2,500...	608	1,347	249	340	249	340	1,178	169
2,500- 3,000...	259	704	114	179	124	179	596	108
3,000- 3,500...	157	506	74	125	86	128	413	93
3,500- 4,000...	98	367	48	89	61	95	293	74
4,000- 4,500...	67	286	34	69	47	75	225	61
4,500- 5,000...	51	241	27	57	38	65	187	54
5,000- 6,000...	70	380	38	88	59	107	292	88
6,000- 7,000...	47	305	27	68	46	89	230	75
7,000- 8,000...	32	242	20	52	35	73	180	62
8,000- 9,000...	24	202	15	42	29	61	147	55
9,000- 10,000...	18	174	12	35	24	53	124	50
10,000- 15,000...	50	599	35	114	79	183	411	188
15,000- 20,000...	22	371	16	67	45	112	240	131
20,000- 25,000...	12	263	10	44	31	79	164	99
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<sup>a</sup> See Appendix A, Table 9, p. 229.

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